Agriculture and nobility in Lombardy. Land, management and innovation (1815-1861)

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ABSTRACT
The paper aims to reassess the contribution of the nobility in the nineteenth-century economic transformation of Lombardy in northern Italy, focusing on its role in agricultural development. Relying on ongoing archival research into thousands of documents such as correspondence, notarial deeds, probate records, accounting books, the article attempts to demonstrate that noblemen acted in an entrepreneurial manner, supported the progress of techniques and innovation, and played a leading role in the modernisation of the sector. The paper reconsiders the contribution of noble families both to the enhancement and management of their lands and to the elaboration and application of agricultural innovation.

Introduction
Since the 1980s scholars have increasingly interpreted the process of the decline of European aristocratic classes as a transformation that proceeded rather slowly over the course of the nineteenth century: the social and cultural influences of the landed aristocracy would last until at least WWI. The debate opened up by Arno Mayer in the early 1980s drove studies in this direction: he identified a strong persistence of the old regime and of the values of the nobilities in Europe, indicating the Great War as the point at which the old order, while trying to defend itself, truly collapsed (a collapse which would finally end only with the Second World War). In England, a long debate took place on the role of gentlemen capitalism in the building of the Empire (Cain & Hopkins, 2016, f.e. 1993). Research studies in Spain, France, Germany, Austria, and Belgium have found new evidence to suggest the enduring role of the nobility in the economic capitalistic transformation of the nineteenth century (Clark, 1984; Higgs, 1987, Hagen, 2002; Malatesta, 2004; Moeller, 1986; Pedlow, 1998). Recent estimates of the wealth of Sweden’s nobility have led to the conclusion that as late as 1900 they represented an important economic force (Bengtsson, Missiaia, Olsson, & Svensson, 2018). All these studies made an important contribution to the re-evaluation of the social and economic weight of the nobility throughout the century. However, they still did not lead to a conclusive change of perspective and framework on the issue. The nobility has continued
to be considered as a conservative force, trying to adapt to and survive the economic and social changes much more than playing a propulsive role in transformation.

In Italy, some research studies have emphasised the ability of a single nobleman or noble family to deal with the economic evolution (Biagioli, 2000; Coppini, 1988; Felisini, 2017; Fumi, 2014; Moroni, 1997; Rollandi, 1998). However, as noblemen as a class were supposed to maintain a rentier mentality, their entrepreneurship seemed to be an exception. For much of the nineteenth century, the endurance, or the survival, of the nobility’s social and economic power was still based on large-scale land ownership (Malatesta, 2000). Extensive land ownership was a traditional kind of property, with connotations of status, normally handed down over the generations and eventually belonging to the agricultural sector, whereas economic progress was linked to industry and industrialisation. Therefore, historians have often considered it as a traditional conservative investment, not worthy – with only a few exceptions – of particular attention from the point of view of entrepreneurial attitudes and management capabilities. In southern Italy, the survival of latifundum, despite being managed according to the trend of international commercial trade (Petrusewicz 1989, Nardone 2004), led to the nobility being considered backward and conservative. Also, regarding northern Italy and Lombardy, the traditional view considers the nobility, due to its cultural attitude, as reluctant to undertake businesses other than land ownership (Cardoza, 1997; Levati, 1997).

By contrast, the main objective of the paper is to reassess the contribution of the nobility in the nineteenth-century economic transformation of northern Italy, focusing on its role in agricultural development particularly in the wealthy region of Lombardy. The article relies on ongoing archival research whose aim is to be systematic, collecting economically relevant documents held in public and private archives, concerning titled families. In Lombardy, nobility represented on average 0.12% of the regional population and 0.22% of those in the province of Milan (Jacini, 1857, pp. 40–41) and owned 30–40% of land in the middle of the century. The number of noble families in Lombardy was substantially stable during the century, even though it decreased from 805 in 1828 to 751 in 1840 (Elenco, 1828, 1840). In 1895, the number rose again to 767 (Jocteau, 1993, p. 23). In 1854 the aristocracy consisted of a group of 3409 people, nearly half of whom (1492) were living in the province of Milan, where 454 noble families were registered in 1858 (ASM, 1858, Araldica). Thousands of items of correspondence, notarial deeds, probate records, fiscal sources, reports, evaluations and accounting books have been already collected.

As a result, it seems that the nobility contributed to agricultural development either by investing, managing, applying new methods or machinery to production over their land or by personally participating in the elaboration and diffusion of such innovations. Therefore, the article is divided into two parts. The first section reconsiders the role of noblemen in the enhancement and management of their land; the second part highlights their contribution to the elaboration, circulation and application of agricultural innovation. The final aim is to demonstrate that noblemen acted in an entrepreneurial manner, supported the progress of techniques and innovation, and played a leading role in the modernisation of the sector.

1. Land, improvements and management

1.1. Property and improvements

Lombardy was the wealthiest Italian region even before Unification (1861) and would be at the helm of Italian industrialisation in the twentieth century. Until Unification, its rich
agriculture represented the bulk of the economy, providing increasing exports of silk, dairy products and cereals. A large proportion of investments and improvements in the sector continued to come from noblemen, who were still the largest landowners in the area.

Scholars have underlined the endurance of land ownership by the nobility in Lombardy (Meriggi, 1987, pp. 11–114; Romani, 1963, p. 96). Since the eighteenth century a huge concentration and rationalisation of properties owned by noblemen took place, through the acquisition of common land and small properties (Faccini, 1988). The nobility’s land ownership was extended or reinforced in the first part of the nineteenth century, thanks to expropriated Catholic Church estates or, to a smaller degree, to public sales of former common properties (Cova, 1986). Throughout the century, the province of Brescia saw a decrease in land ownership expansion by the nobility (Tedeschi, 2009). However, noblemen acquired land all over the Kingdom of Lombardy-Venetia, as very wealthy Lombards bought lands near Verona, Vicenza, and Padova (Stato della coltivazione a riso nella Lombardia, 1843). Genoese noblemen were also extending their properties beyond Liguria, in Piedmont and Lombardy.

According to some reliable estimations, in 1835 noblemen owned one-third of the lands in the high plain and hills near Como and Milan (Brianza), where small properties together with large plots were the rule (Czoernig, 1838; Romani, 1957, pp. 70–73, 74 n. 9). In 1841, in the province of Crema, they owned more than 40% of the agricultural land and forestry (Antonietti, 1982). In the area of Milan, in 1844 noblemen’s properties would account for almost 40% of the territory (Litta Modignani, Bassi, & Re, 1844, I: 186). Around Inzago (Milan), the nobility still owned more than 50% of land in 1886–1887 (Riva, 1984–85). In 1861 noblemen were still among the biggest landowners and, above all, the aristocratic predominance was even more striking at the very highest levels of land ownership, as the noblemen’s plots were on average eight times the size and value of those not owned by noblemen (Czoernig, 1838; Banti, 1996, pp. 66 and f.).

The value of noblemen’s properties and the rich Lombard agriculture of the nineteenth century was the result of long term human work and investments which started in the Middle Ages. The Po valley had a high degree of diversification of soil and climate, but its wealth did not originate in the natural environment. Throughout the centuries, landowners invested huge amounts of capital in building an efficient and articulated irrigation system, in reclaiming heaths and swamps and in improving land. After the crisis of the sixteenth century, a new wave of recovery and investments started in the second half of the eighteenth century, when the international prices of food commodities and the value of land rose again (Faccini, 1988). As in the rest of the peninsula, agricultural development in nineteenth-century Lombardy followed two main processes: the further expansion of fertile soil through reclamation, deforestation, and tillage and the more intensive exploitation of the old plots of land by increasing market-oriented production, particularly silk in northern Lombardy and cattle farming and rice cultivation in the low Po valley (Bevilacqua, 1989; Caizzi, 1972). The Lombardy nobility played a relevant and sometimes pioneering role in both processes.

As we will see more clearly in the second part of this article, following the ‘agrarian activism’ movement which began in the eighteenth century and which was spreading throughout Europe at the time, many noblemen, who were agronomists themselves or who were inspired by technological and scientific progress, were aiming at modernising and renewing agriculture, improving their land with new agricultural techniques (ABR, 1850–1860; ASM, 1847–1865). To this end they supported the establishment of institutes for agricultural education.
and also the creation of model farms, such as that of Corte Palasio (Pugliese, 1923; Zaninelli, 1962). They provided much of the leadership for the most important improvement societies and actively participated in the organisation of the Italian Scientists Congresses. Social and local meetings and lectures discussed agricultural issues (including vegetal and animal diseases); numerous articles and brochures were published and circulated among them. Additionally, noblemen travelling for business or leisure around the world collected, sent and experimented with seeds of cereals, rice, silkworms, exotic fruits, plants, in a continuous transmission of knowledge in an attempt to discover new opportunities for agriculture (Annali, 1826–1827, 1827–1830, 1830, 1831–1833, 1834–1843; Giornale agrario, 1844–1853; Annali, 1854–1857).

Noblemen tried to earn as much as possible from their land and it seems that they were often (although not always) successful in the economic exploitation of their rural properties (many references to the issue can be found in their abundant correspondence and in the property balance sheets; as an example see ASM, Litta Modignani; Sormani; Brambilla Archives). Their land was essential to the economy, supplying commodities such as hemp, linen, silk, wood, and untapped raw materials (minerals), waterpower (renting ancient water rights and old cereal mill-sites to be transformed into silk or cotton mills) and in addition, the land was used to provide security for the borrowing of capital.

Many landowners were increasingly involved in commercial agricultural activities and invested in innovations and experimentation, introducing new kinds of plants and cultivation techniques, agricultural tools such as innovative ploughs or threshing machines (Gualdo, 1842; Dossena, 1843), and in canal-building for irrigation, costing millions of lire (Canetta, 1976, p. 112 and f.; Litta Modignani et al., 1844, p. 123). Yields increased, farm prices rose, and so did the value of rental incomes, which doubled from the beginning of the century, reaching unequalled heights until the middle of the century (Jacini, 1857, p. 45). In the 1850s every pertica (654,5179 square metres) of a good irrigated area could command 8.58 Austrian Lire in rental income, while in the high plain it was between 5.24 and 6.55 A. Lire (Canetta, 1976, p. 128).

In Lombardy, the areas of irrigated land totalled 427,000 hectares in 1857, out of total agricultural land of 1,132,000 hectares; while residual unreclaimed land amounted to only about 25,000 hectares (Jacini, 1857, p. 60). Dairy (milk, butter, cheese), rice and pasture became the main areas of production in the low irrigated plains, which was internationally recognised by contemporaries as one of the most advanced European agricultural areas, close to having a perfect cultivation system. In the dry high plain and hills, silk in particular was the most popular commodity in production. Silk has been defined as the main leading sector of the Lombardy economy (Cafagna, 1989). In the 'Bonelli-Cafagna model', an influential interpretation of Italy’s economic development, the profits earned from the export of silk gave northern Italy the opportunity to launch banks and credit institutions, which in turn stimulated investments in industry, paving the way for industrialisation. Land and silk were a rational investment, not a sign of backwardness (Bonelli, 1978; Cafagna, 1983a, 1983b, 1989). Within Lombardy, the quantity of mulberry trees tripled from 1796 to 1834; the production and export of silk grew and in the 1830s Lombardy was the region that produced and exported the greatest amount of this product in Italy, also collecting silk produced in Veneto (about 75% of exports consisted of reeled silk), while more than 50% of the silk manufactured in Europe was produced in Italy. The capital accumulated in this sector by landowners, manufacturers and merchant-bankers would be decisive in furthering
investments in financial activities and later in the new industries of the second industrial revolution; indeed, the silk industry would deploy its propulsive role after Unification (Federico, 2005).

The first half of the century saw the emergence of new economic activities, directly connected to the European process of development. The region was moving forward in a first wave of industrialisation, based upon the cotton industry, new textile factories and mechanical workshops. Faster circulation and transmission of technological innovations and scientific achievements successfully linked northern Italy to Paris, Lyon, Mulhouse, London, Manchester, Zurich, etc. Part of this progress was due to the strong commercial and economic relationships which merchants and industrialists exploited all over Europe. Businessmen from France, Switzerland, Austria, Germany were also coming to Italy and establishing their businesses in Milan, Turin, and Genoa (Poettinger, 2011). Milan, in particular, was becoming the commercial and financial centre of Lombardy: the city hosted the headquarters of the main regional business firms, which were moving there from the other provinces or from abroad.

However, the new emerging forces were not antagonistic to noblemen landowners: in other words, the ‘rise of the bourgeoisie’ did not cause the ‘decline of the nobility.’ The origins and behaviour of the local élite drove matters in a different direction. Traditionally, the aristocracies of Lombardy were civic aristocracies living in the cities (about half of them were concentrated in the province of Milan) whose members’ wealth had commercial or financial origins. They were systematically open to the exponents of the emerging families able to gain wealth and prestige. Noblemen followed a practice of osmosis and incorporation, which could ensure the endurance of their central civil role, also blocking in advance any possible political dissent. Co-opting new non-noble families – through inter-marriage or direct upgrades thanks to the solid patrimony acquired in finance or trade – was the norm (Meriggi, 1987, p. 135). During the Restoration, co-optation through marriage in the nobility’s circles continued and in 1827, around 36% of noblemen resident in the province of Milan were married to non-noble ones (ASM, 1827).

The origins and relative openness of the aristocratic élite can help to explain why noblemen and bourgeoisies often followed similar investment strategies, sharing the same initiatives and ventures. The nobility’s assets were based on real estate and particularly on land, which would be improved and enhanced during the century, profiting especially from the expanding silk trade. However, during this period, the nobility increasingly supported new economic ventures, the construction of railways and infrastructures, financial initiatives and manufacturing (Conca Messina, 2014). The main representatives of the nobility made the first risky attempts to introduce steam ships onto rivers and lakes, founding several navigation companies (which almost failed due to the fragmentation of the system of water transport). They founded (1823) and guided what was soon to become the main financial institution in Lombardy, the Savings Bank of Lombardy Provinces. The Savings Bank allocated most of its investments to long-term mortgage loans (30% in 1830, 63.5% in 1835, 76.3% in 1841 and 80% in the 1850s). Twenty-five percent of its lending until 1850 was allocated to noblemen landowners (Cova & Galli, 1991, pp. 83, 91), but it also supported some industrial vanguard companies both by directly funding the managing partner and by supporting those bankers who played the role of limited partner (Cova & Galli, 1991, pp. 82, 83, 88 and f.). During the turmoil of 1848, part of the nobility (considered responsible for the riot) was punished and obliged by Austrian authorities to pay high land taxes and enforced loans. From that moment on, the political and social constraints increased. Nevertheless, some
years later they were creating—together with the wealthiest bankers and entrepreneurs—the Silk Bank (Cassa interinale per le sete), supporting the project for a local Commercial Bank, investing in the railways of Lombardy-Venetia, substituting fixed capital and adopting the use of steam in the silk industry in the provinces of Como, Bergamo, and Milan (Conca Messina, 2007). After Unification, with the agricultural crisis, many noblemen would have a similar reaction to that of Italian and European landowners, increasing diversification and investing in new financial and industrial initiatives, public utilities and local transport, urban housing, and public debt.

1.2. Management and organisation

If we focus on the management of their estates, documents lead us to reconsider the idea of noblemen as a whole class living apart from (and unaware of) their businesses. Noblemen took care of, supervised and managed their patrimony mostly by acting as a sort of ‘corporate director’ (Beckett, 1988), making vital decisions about the type and amount of investments, expenditures, lending and borrowing, selling and buying.

The correspondence regarding the administration of the estates contains daily letters in which members of the noble family were dealing with economic estimates. They wrote very accurately and in great detail about supporting their assessments with calculations. They evaluated reparations or innovation, advised on plant cultivation systems or breeding methods, expressed concern about upcoming harvests, dealt with prices for the selling of food-stuffs, discussed the best solution for rents or the profitability of investing in new companies and economic activities, etc. (ASCM, Barbò; ASM, Serbelloni, Litta Modignani; ASCM, Belgiojoso, 3; AFT, Cristina Trivulzio, 60–61; ASM, Sormani Andreani Giussani Verri, 324, 373, 374, 487–489, 622–6233; ASM, 1806–1856, Litta Modignani; ASM, 1857–1862, Clerici di Cavenago; ASV, D’Adda). They also appointed and supervised the management team, assessing grievances and smoothing relationships on the estates. Noblemen appear to have been at the heart of a wide network, investigating, gathering information and making final decisions. Moreover, they were at the centre of a network of suppliers and sellers (also at an international level) of services, goods and technical tools. The closest similarity is that of a family business with large capital and estates. Constant attention was paid to updated information on prices and market trends by consulting specialised journals and daily bulletins. Noblemen analysed market trends and prices, the best times to sell, costs and benefits, and tried to foresee the potential profit or the level of capital remuneration which could be expected. They often shared and compared their information with that collected by other noblemen and landowners.

To manage such a large patrimony, complex administration systems were the rule, sometimes originating from the early-modern period, and updated to meet the new organizational necessities. Usually, the head of the noble family was in charge of dealing with the administration of the patrimony, even though consultation with the other members was the norm. Here it should be stressed that the patrimony was made up of different parts, plots, nurseries, buildings, which belonged to the family as a whole, but were specifically attributed (for the purposes of inheritance, donation, right of use) to one or more members of it (brothers, sons, their wives), so that rents, investments, reparations, and expenditure in many cases concerned single portions of the estates and had to be agreed with these family members.
The noble family was the head of a hierarchical structure consisting of the delegated general administrator and one or more offices with lawyers, attorneys, notaries, engineers and bookkeepers, based in the town. The general administrators might also be noblemen or they might come from the professional bourgeoisie. Depending on the central management, the land in the countryside was organised into different branches (Agenzia), each one under the supervision of a rural agent with the help of engineers and land surveyors. Most wealthy noblemen worked their way through copious daily correspondence with the general administrator, who had to inform them about every problem that emerged and also had to carry out all the orders received about investments, profits and agricultural innovation which the noblemen often wanted to introduce (plants, practices, land reclamation). The letters noblemen wrote were full of advice concerning the maintenance of the farms and general cultivation (ASM, 1838). Constantly, and especially during the summertime, the noblemen visited their estates in person. The general administrator, in turn, could only supervise the house’s affairs and so he appointed many other employees and consultants (a central office was nearby) to keep the accounts, give periodical reports, visit the properties, gather information about the economy and enterprises for investment (engineers, lawyers, notaries, accountants, stewards) (ASM, Litta Modignani, Sormani, Serbelloni, Crivelli Giulini, Sormani Andreani Giussani Verri, Clerici di Cavenago; AFCAG, Litta, FVM, ABR, AFT, Trivulzio di Belgiojoso, ISEC, Zaccaria; ASD, Greppi, ASV, D’Adda). The administration process was accompanied and supported by thousands of accounting books, balance sheets, notarial deeds, reports, evaluations, which for every family culminated in an extensive archive which was carefully kept and which went back for decades or centuries.

Since the eighteenth century, the nobility had paid great attention to diversifying the distribution of their properties between the two main environments of the high and low plains. The goal was both to face unfavourable climatic events, plant or animal diseases, or at least war damage and to be able to respond to international and local changes in the level of foodstuff prices and demand (Faccini, 1988; Archive Lucini Passalacqua). Living in their villas in Milan or in the provincial towns (where they also owned houses and shops which were rented out to the common people), they owned or built up residential mansions (ville) on or near their land. They used to move there in the summer, or to visit them during the silkworm egg breeding season, or during the cereal and grape harvest times. Many mansions were spread throughout Lombardy, located in villages or along the main canals in the low plain or on their land and near the lakes in the high plain and hills.

Usually, the noble family relied on different types of rural organisation, depending on the size of the plots and the type of soil and climate, in a variable arrangement. They directly managed (ad economia) just part of their land, usually that adjacent to their residential homes in the country and gave it over to woods, plant nurseries (mainly mulberries), vegetable gardens, while renting out the rest.

The part of all the land which was managed directly by the noble family (ad economia), relied on the employment of a farmer (agente), who would be daily in touch with the general administrator, who in turn updated the landlord constantly about the weather, the harvests, the potential problems or the progress of the land. Some land could be handed over to direct management if the lord aimed to introduce specific improvements or if the tenant failed in its management.

The rented properties were a constant matter of interest for the owner. It is worth underlining that all the land was managed with the aim of improving yields and value, taking into
consideration the kind of soil, the availability of water and local agricultural uses. All the rental agreements included improvements that were established by the land owners according to the evolution of local and international markets, following increased demand for silk, linen, crops, rice, dairy products and wine. They could consist of new plantations (mulberries, vines, and poplars), new agricultural uses (grasses), development of plant nurseries, innovation in irrigation systems, and the like.

1.2.1. The high plain
The land on the dry high plain – where silk, cereals and wine were the main items of production – could be rented to a tenant for cash or could fall under the general supervision of an agent. The latter solution was increasingly adopted. In both cases the land relied on labour-intensive cultivation and was broken up into small plots and sharecropped by farm labourers (massari or pigionantii). The large plots in the irrigated low plain (40 to 60 hectares, in which rice or grass, cow breeding and dairy products were the main enterprises) were rented out as a whole for cash to tenants. In the province of Pavia (low plain) in 1852 17.4% of the land was cultivated directly, while nearly 70% was rented out and the rest was given over to sharecropping (Jacini, 1857, p. 286).

During the Restoration, international demand for raw silk and thread increased at an unprecedented rate, as did prices and opportunities for creating wealth in all social classes of Lombardy involved in the production, trade and credit of silk, from planting mulberry trees to producing cocoons, from the reeling process to the sale of the semi-finished product on the European markets (Federico, 1997).

Not surprisingly, the landowners considered the value of the cocoon harvest as a key revenue (Serpieri, 165–166). The agreements between owners and farm labourers usually fixed the payment of rents in foodstuffs through the supply of a certain amount of wheat, and the sharecropping of silk cocoons and wine. However, the production and selling of silk was totally under the control of the owner. The plantation of mulberry trees was also managed by the owner. The landowner had ownership of the mulberry leaves, and distributed silkworm eggs to each farm labourer, according to their ability to cultivate them. At the end of the process, all the silk cocoons were collected by the owner, and their value assessed to offset the farm labourers’ debts.

In the countryside, every available space was utilised to make way for mulberry trees, and the area of the foothills was described as an unending forest. In 1815, cocoon production in Lombardy totalled 8–9 million kg, but doubled in the next two decades to almost 23 million in 1847. In the 1850s, the estimated production of a ‘reasonable year’ was between 20 and 25 million kg, and was worth around 80 million lire, figures that were more than twice those of Piedmont (Conca Messina, 2009; La storia di un progetto, 1844; Moioli, 1981, pp. 251–255).

Large properties were able to produce large quantities of cocoons. In many cases, landlords built reel manufacturing facilities on their land, which they could modernise with new systems and machinery and where they could seasonally employ their young female farm workers. Between 1811 and 1835, and over the next 20 years, the number of steam reeling basins tripled, and increased even further when the number of steam reeling factories increased. By 1854 they amounted to 25% of the basins in the census (Moioli, 1993).
Sometimes, the reeling factories were rented to specialised entrepreneurs. In this case, the landowner had to cooperate by carrying out repairs and introducing innovation into the buildings used for production, and by supplying the local workforce to be employed. In the middle of the century the 3,000 reeling factories in Lombardy were spread throughout the area and were sometimes still located on the lands themselves, but pioneering plants run by new silk entrepreneurs for both reeling and throwing also started to appear and made the region among the most technically advanced (Tolaini, 1994, 1996).

As landlords were large producers, they were able to influence the level of cocoon prices and, therefore, the prices of silk. Agreements and contracts for the sale of cocoons were settled in the months before the harvest, according to sale prices that another noble landowner (specified by name) selling cocoons would have been able to command at harvest time. In this way a web of references spread every year through the countryside, linking one harvest to another, one owner to another, with the aim of keeping the price level as high as possible. After the 1860s, agreements might also be reached according to prices on the Milan market (all’adeguato) (ASM, Sormani-Andreani, b. 341; Crivelli, b. 22, 31; Discorso sull’agricoltura, 1846; Federico, 1992).

1.2.2. The low plain

Another common way to earn money from large properties was to rent the land out to a tenant for many years (usually nine, seldom 12 or more) for a substantial annual payment in cash (plus some free services and foodstuff supplies). This happened especially (though not exclusively) in the low plain, where the land owned was larger and the cultivation and organisation of production had to be directed centrally by a farmer who had to deal constantly with specialised workers (such as the grower and the dairyman). Adopting Carlo Cattaneo’s definition (Cattaneo, 1853), a well consolidated historiography considers the tenants of the low plain to be the real capitalists and agricultural entrepreneurs, to whom the improvement and high profits of lands should be ascribed whereas the property owners have been often depicted as absent and interested only in rents. By contrast, what emerges from the extensive correspondence in the vast archives of the noble families is quite a different picture.

It is indubitable that tenants acted as entrepreneurs in being able to deal with costs and the efficient use of economic factors. They had to be prosperous enough to pay substantial amounts of cash for machinery and to access funds (more than three times the amount of the annual rent, according to Litta Modignani et al., 1844, i: 132); to provide enough livestock (cows, horses) and agricultural tools; to sell the crops, the dairy products, and all the other products at the right time and price them competitively to merchants on the local market. They also had to maintain a number of employees: the most important were the agent (fattore), in charge of the management of all the agricultural works and who hired temporary workers for planting and harvesting; the dairy men (casaro) who supervised the production of milk and cheese; the supervisors of the water sources (campano). Some of them became so wealthy and respected that they became owners themselves.

However, the landowner had an active role in the improvement of the agricultural firm and, sometimes, in the marketing of the produce. For example, dairy production was controlled by the dairy men, who were generally conservative and reluctant to change their systems of production and the tenant had no authority in the matter. The sector would be
the object of many interventions from local agricultural institutions led by noblemen before being able to advance in the systems of production and matters of hygiene (Besana, 2012). Furthermore, noblemen were also the owners of dairy aging stores near Milan where the cheese was gathered and stored before being sold. One example is the 14 stores owned by the Visconti di Modrone family in 1854 in Corsico (a total of over 89 local stores), capable of storing 10,000 wheels of cheese (more than 11% of total local trade).

Moreover, it was up to the property owners to provide the capital to repair and renovate the farmhouses, the cattle sheds, and the haylofts; the silos; the irrigation and hydraulic system; the buildings for processing foodstuffs, such as corn and rice mills, milk and dairy stores and production buildings, silk spinning machines, and the like. They were all necessary investments to maintain or increase the value and rental income of the land, but also to increase the amount and the quality of production, and meet the demand of the markets, which was a common interest of owners and tenants alike. However, the core of the contrasting interests was that the expenditures of tenants were related to an immediate return from the farm, exploiting its sources, while landlords looked at the long-term value of the land and at the increase of future returns (Mingay, 2000).

Good cooperation between the tenant and the landlord could often encourage increased investment in the fixed capital allocated by the landlords. In this way, some technical innovations could be tried out or introduced by the owners, such as new, more suitable buildings, machinery, preservation and processing tools and systems. For example, between 1828 and 1843 the Serbelloni family enlarged several farmhouses, built about 30 new small cattle sheds and a cheese factory in Cornaredo (ASM, 1828–1854). In the land owned by Cavagna Sangiuliani near Pavia, self-financed spending (using revenues) for unscheduled repairs and conservation increased from one-sixth of the total owners’ expenditures at the beginning of the century, to one-third in the middle of the century (Romani, 1957, 126 n. 23, Archive Cavagna Sangiuliani in Zelata). Later, spending for repairs on the Andreani family’s land near Lodi represented more than one-third of all the outgoings in the years 1869–1872 (tax excluded) and amounted to 45% of the value of the net revenue (ASM, 1869–1872).

Many circumstances placed the tenants in an inferior position to the owners, so much so that they have been defined as their ‘serfs’, thus underlining their lack of independence despite their contribution of capital and organisational skills (Cantoni, 1851; Romani, 1957, pp. 96 and f.; 104, n. 32). In this respect, the social and economic prominence of the nobility has to be taken into serious consideration. The objective of the rental contracts was ‘improvement’, but how, when and where this was to be done had to be agreed with the landlords. The landlords had a plan for innovation which had been devised together with their experts and engineers and they were not at all keen on giving the tenants free rein to improve their land, since any innovation which was not previously agreed might give rise to compensation claims from the tenants (ASM, Notarile u.v., 503–505; 876–877; 989–993; 1088).

This is why, as far as possible, all improvements required by the landowner were described and clarified in a technical document and changed in every contract (e.g. ASM, Notarile, 50324, 50608; ASM, 1800–1872; ASM, Litta Modignani, 19, 20, 23, 24, 25; AFT, 27, 28, 30, 34, 37; Archivio Storico Diocesano di Milano (ASD), 1840–1861; ASV, 1803–1861). Although the signed agreements were the result of old forms prepared by notaries, their content was always different and adapted to the different types of soil, environment and revenue expected. All the contracts denied the tenant any possibility to introduce significant innovations without the written authorisation of the landlord, granted on a case by case basis.
Thus, the agreements carefully listed and detailed the duties of the tenants: the amount and type of new plants to be introduced; the work and intervention on plants, woods, land and water to be done; the rotation to be respected, the number (and sometimes the breed) of cattle, horses, oxen which had to live on the land to fertilise and work it; the animals that could not be kept (such as, in the low plain, goats and sheep) and many other specific duties (penalties included) and (limited) rights. Furthermore, tools and provisions used by the tenant were mortgaged in favour of the lessor for the rental period; the tenant, in order to be appointed, had to give guarantees (sureties); his management, balance sheets and results were constantly under scrutiny and the subject of reports by the central administration: if found unruly or inefficient, the landlord would terminate the rental contract and substitute him. The tenant did not have the right to sell hay harvested from the farm, had to use the milk from the farm to produce butter or cheese, could not freely manage the plants, and in any case, the landlord’s agent had the right to control and invigilate the tenant’s management of the farm at any time (ASM, Notarile u.v., 877, 1046; 1062, 1088, 1089).

Obviously, the arrangements could be not all be respected, and tenants carried out work even without the owner’s permission. However, the control of the owners was very strict and based on their local agents and technicians. The archives contain several documents in which the trusted engineer or agrimensores evaluated and reported to the landowner about the suitability and costs of any innovations proposed by the tenants (see e.g. ASM, Litta Modignani, Sormani, Serbelloni). It was only if the proposed innovation was found to be consistent with good estate management that the landlord agreed and paid compensation for the costs incurred by the tenants. Objections to any innovations could lead to a long dispute which usually annoyed the landlords and penalised tenants. At the end of the rental period, a balance sheet was drawn up by the agents of the landowners, accounting for credits, debts and enhancement. But the payment of compensation for the cost of improvement carried out by tenants was generally not compulsory (even if it had been authorised) – in some cases it was explicitly not due – and in any case it always had to be judged and evaluated as truly worthwhile for the property by the expert agent or engineer of the landlord, who had the final word.

The real goal for landlords was to find a good and loyal tenant. Former herdsmen, relatives of farmers, agents or also tenants usually originated from the local countryside, had some agricultural experience and varying levels of skills and knowledge. The landlord evaluated their social and professional reputation, gathering information from the local parish priest, attorneys, and compatriots. As tenants were often part of a family specialised in managing land (a very remunerative profession, if well conducted) they were sometimes recommended by other landlords who knew their family and put their names forward to noblemen friends. Good reputation was part of the capital for these families. This was also of great importance because tenants were usually able to act as representatives for their landlords’ interests in the local municipalities. It was not a guarantee of success, but a social system of personnel selection.

Sometimes the rent was put up for public action, especially when the landowner could not rely on a good trusted tenant. Even when they were carefully selected and engaged, they might still not have been clever or talented enough to manage the farm well. Tenants might be unable to make the expected profit from the rented land; they could fail to reach the goal of improving value and productivity; or they could be forced to delay and skip rent payments; they could also prove incapable or unfair in representing the owners’ interests in
the local municipal Council (ASM, 1848; Riva, 1984–85). If they proved able to successfully manage the land under the supervision of the owners, landlords kept them for a long time. By contrast, if they were not satisfied with the tenants’ management or behaviour, noblemen often rescinded the contract and sometimes decided to return the property to their own direct administration (ASM, 1845–1851).

2. Innovation and institutions

Commitment towards the efficient management of agricultural resources was a highly esteemed activity among noblemen as well as among the emerging class of rural entrepreneurs (Jacini, 1857). Some of the most prominent experts in agronomy operating in Lombardy during the first half of the nineteenth century, such as Vincenzo Dandolo and Ignazio Lomeni, boasted noble titles. This was not a specific feature of Lombardy but a common characteristic in the early nineteenth-century Italian peninsula, where the class of noble landowners produced some of the most renowned experts in agronomy and agricultural entrepreneurs (Biagioli, 2000; Gottardi, 2011; Gaspari, 1993; Pazzagli, 1985, 1998; Romeo, 2012). In Lombardy, the contribution to agricultural development could even be seen and used as a way for noblemen coming from other states to have their title acknowledged by the Milanese authorities. This is testified by the case of the Genoese marquis Marcello Saporiti, a subject of the Sardinian king, landowner in Vercelli (Piedmont) and resident in Milan, who in 1823 based his claim to have the right to use his title in Lombardy on the merit of having presented a new rice threshing machine invented by Tuscan mechanic Giuseppe Morosi to King Charles Emmanuel IV (ASM, 1823; Moioli, 1999).

Initiatives in support of agricultural innovation and development were not limited to individuals who were particularly responsive to innovation. The nobility was at the centre of a network and institutional system that played a key role in the production and circulation of ideas among the states of northern Italy and well beyond its borders.

Individual initiatives were encouraged and often promoted by central authorities, whose interest in innovation and economic development grew during the Enlightenment. Such an interest resulted in the creation of a myriad of national, regional and provincial scientific societies and academies throughout Europe, which largely replaced universities as centres of scientific research and development (Stapelbroek & Marjanen, 2012). Noblemen were among the founders and most active members of these institutions, which saw the cooperation of the brightest minds and most successful entrepreneurs of society to promote the public good and economic development.

Regarding Lombardy, the primary role of nobility in the advancement of agriculture and related industries is evident when we look at the institutions established to this end in Milan. This is the case of the Istituto Lombardo-Veneto (hereafter I.L.), founded by Napoleon and maintained by the Habsburg monarchy after the Restoration as a natural progression of the Patriotic Society established by Maria Theresa in 1776 (Pecchiai, 1917, Augello & Guidi, 2000). The institute responded to the need for innovation in Lombardy agriculture by providing academic studies, advising the government on specific issues, and promoting new research through prizes and competitions (Robbiati Bianchi, 2007).

Members of the local nobility do not only appear among the founders of the institute. As they had done in the Patriotic Society (Società Patriotica di Milano, 1783), they maintained
a primary role in its direction and management. Between 1840 and 1870 noblemen held the office of president for 15 years, that of vice-president for 17 years, that of secretary for 10 years and that of vice-secretary for 15 years (Istituto Lombardo Accademia di Scienze e Lettere, 1989). In the middle of the century, their leadership was undisputed: the I.L. president, vice-president, and vice-secretary had noble titles, and so did 15 out of 18 honorary members (the highest rank among the I.L. associates), 5 out of 18 salaried fellows, 6 out of 17 non-salaried fellows, 6 out of 32 correspondents in Lombardy, and 11 out of 50 correspondents outside Lombardy (Istituto Lombardo di Scienze Lettere ed Arti, 1845, 1852). While correspondents acted as key points of reference for the collection of information relevant to the advancement of different economic sectors, the fellows and honorary members were experts responsible for processing this information in more organic research or reports. The list of affiliations of Count Vincenzo Dandolo, which included more than 20 societies and academies in different Italian states, Germany and France (Compagnoni, 1820), gives us an idea of the amplitude of this international network as well as the role of I.L. fellows in enriching connections within its hubs.

The institute’s actions show the relevant contribution of noble members to the society’s activity and reveal that agriculture and the related industries, in line with the spirit of the institute, were at the centre of their interests. Between 1802 and 1888, noblemen authored 521 out of the 4,334 studies, speeches and reports presented at the institute. Those concerning topics related to agriculture ranged from methods and techniques for the breeding of silkworms, the farming of high-quality species, or the introduction of new cultivations to more theoretical studies on hydraulics, chemistry, natural sciences – useful for the improvement of the irrigation system or the study of diseases in plants –, or cultural traditions such as the civic use of land, considered as a major obstacle to the fertilisation of the heaths of northern Lombardy (Reale Istituto Lombardo di Scienze e Lettere, 1891).

Besides presenting studies and reports on academic research, the I.L. members were called to assess the profitability of new inventions and encourage their diffusion. This happened, for example, in 1841, when the engineer Luigi De Cristoforis and the naturalist Giuseppe Balsamo Crivelli were called to assess the effectiveness of the American plough on the initiative of another nobleman, Carlo Tinelli, renowned for having introduced porcelain manufacturing into Lombardy and for spending large sums of money to acquire devices and hire qualified technicians from abroad. After a close comparison with the Milanese and the Belgian ploughs, the American model was warmly recommended for adoption across the Lombardy provinces (Cavallera, 2003; Istituto Lombardo di Scienze Lettere ed Arti, 1841).

The institute favoured the circulation of knowledge through the organisation of scientific readings by selected authors and the exchange of publications with similar institutions within and outside Lombardy. An analysis of the books collected and the conferences organised by the I.L. confirms a special relationship with Tuscany, encouraged by the exponents of the Milanese and Tuscan nobility by virtue of their common interests in agriculture and the reformation of the education system (Moroni, 2003). In this period Tuscany – in particular Florence, the seat of the Accademia dei Georgofili – played a leading role in the transmission of modern agricultural theories and methods originating from other European countries, especially France (Biagioli & Pazzagli, 2004). As early as 1820, Marquis Cosimo Ridolfi, founder of the first agrarian institute in Italy, was invited by the I.L. to give a talk about the scientific advancements in Tuscany and his work on the implementation of the ‘monitorial system’
created a few years earlier by Joseph Lancaster and Andrew Bell for the education of the poor (Robbiati Bianchi, 2007). A few years later, the Tuscan agronomist Giuseppe Rossi personally donated his works on the production and commercialisation of wine to the I.L. (Istituto del Regno Lombardo-Veneto, 1838).

The I.L. was also repeatedly invited to share its expertise with foreign institutions, such as the Society for Science, Agriculture and Arts in Lille and the Irish Academy of Science (Istituto Lombardo di Scienze Lettere ed Arti, 1841). The relationship with the British Isles appears to have been particularly meaningful. In 1847 the British government asked for expert advice to solve the problem of the Irish famine by investigating the advanced irrigation system and capitalist exploitation of the land in Lombardy (Robbiati Bianchi, 2007).

Lombardy was internationally acknowledged as a major cultural and technical point of reference for high farming since the eighteenth century (Bigatti, 2016). This prosperity was achieved through a long-established set of practices enabling such an efficient exploitation of land that in the mid-1840s, 476 out of 530 square miles of the Milanese province, situated between the Ticino and Adda rivers, were made up of land suitable for cultivation. (Litta Modignani et al., 1844, II).

Over the course of the nineteenth century, appropriate technical education for agronomists, farmers, tenants and cheese makers became increasingly important to agricultural development. Lombardy was traditionally weak in this respect (Zaninelli, 1962) and the I.L. became the government’s main reference point for agricultural education. The region had a well-educated and experienced group of engineers and surveyors (agrimensori), whose technical cooperation was invaluable during the creation of the Cadastre of Maria Theresa in the eighteenth century. Their key role in the transformation of the agricultural sector increased as they supported and regulated the building, administration and use of the water system, with its dense network of navigation and irrigation canals. The progress of the natural sciences, which could potentially influence agricultural practices, however, made it necessary to constantly update knowledge. In 1829 some noblemen members of the I.L. and other experts proposed the foundation of an Academy of Agriculture and Natural Sciences in Milan for the teaching of subjects (such as mineralogy, zoology, practical agronomy, and agricultural chemistry) that were still lacking in public schools, but the government did not actively support the initiative. Aware of the scarce willingness of rural workers to have new techniques and practices imposed on them from above, the I.L. members also sought to create technical agricultural institutes for farmers and agents, model farms and farmer associations (Robbiati Bianchi, 2007; Istituto Lombardo Accademia di Scienze e Lettere, 2015). One of these schools, established at the suggestion of Ignazio Lomeni in 1835, was opened in the park at Monza and originated from direct contacts with Marquis Cosimo Ridolfi (Pazzagli, 1990).

The emergence of agronomy as a science and its application to the development of agriculture in northern Italy, particularly in Lombardy, was a slow and hard-fought process (Fumi, 1990; Zaninelli, 1990). Exponents from the local nobility appear to have played a role in enhancing both public and private agricultural education at academic as well as practical levels. However, the input came from the élite, and had to deal with widespread indifference or scepticism from farmers and farm labourers regarding the abandonment of traditional practices.

The expertise and dynamism of some prominent members of the Lombardy nobility in agriculture and other related industries explain their presence in the three technical committees (on agriculture, mechanics, and chemistry) established in the early 1840s by another
The commitment of Lombardy noblemen to innovation can also be inferred by the prizes they awarded using their own capital or through the institutes of which they were members, as well as by the prizes they were able to win as an acknowledgement of their own work and investments. From 1816, the I.L. granted a prize for agricultural and industrial innovation every two years and from 1842 a similar prize was regularly awarded by the SEAC; on a private level, awards were established by Ignazio Lomeni, Marquis Fermo Secco Comneno, and Luigi De Cristoforis — who in 1841 invited applicants to produce a report on ways to enhance manufacturing production without harming agricultural interests and set up at his own expense a prize in recognition of outstanding research in the techniques to improve the reeling of silk (Istituto Lombardo di Scienze Lettere ed Arti, 1841). As can be seen in Table 1, during the first half of the nineteenth century the IL regularly awarded noblemen for their contribution to the development of agriculture in both Lombardy and Veneto. The prize-winning projects clearly show the commitment of nobility to dealing with all the different aspects of agricultural development, from technical innovations to land reclamation and the increase of market-oriented crops.

The prizes awarded to noblemen were in a minority compared to the total amount of acknowledgements granted by the institute. This evidence shows that, along a small but dynamic privileged elite, new ranks of experts, technicians, and entrepreneurs of non-noble origin were growing in importance in the primary sector, and testifies to the willingness of the IL to enhance their contributions in the general interest.

The leading position of the noblemen experts in agronomy and related disciplines is confirmed in the Congress of Italian Scientists held in Milan in 1844 (directed by Count Vitaliano Borromeo), where they led the “Agronomics and Technology” section, and held offices dedicated to “Geology, Geography, Mineralogy” and “Botanical Studies and Vegetal Physiology” (Diario della sesta riunione degli scienziati italiani, 1844). In the days before the

Table 1. Noblemen members of IL awarded (1816–1857).

<table>
<thead>
<tr>
<th>Noblemen</th>
<th>Medal or prize</th>
<th>Object</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cusani Confalonieri Carlo</td>
<td>Prize</td>
<td>Steam spinning mill</td>
<td>1816</td>
</tr>
<tr>
<td>Lomeni Ignazio</td>
<td>Silver medal</td>
<td>Wine fermenter</td>
<td>1824</td>
</tr>
<tr>
<td>Lomeni Ignazio</td>
<td>Silver medal</td>
<td>Wine press</td>
<td>1826</td>
</tr>
<tr>
<td>Gera Francesco</td>
<td>Gold medal</td>
<td>Chinese silkworm and mulberry</td>
<td>1827</td>
</tr>
<tr>
<td>Minotto Giovanni</td>
<td>Silver medal</td>
<td>Steam machine to produce spirit</td>
<td>1827</td>
</tr>
<tr>
<td>Visconti di Modrone Carlo</td>
<td>Gold medal</td>
<td>New drainage system</td>
<td>1830</td>
</tr>
<tr>
<td>Spini Pier Antonio</td>
<td>Prize</td>
<td>Tillage and fertilisation of overgrown fields</td>
<td>1832</td>
</tr>
<tr>
<td>Molin Antonio</td>
<td>Prize</td>
<td>Drainage of 1500 plots of land on the adige river and renovation of farm labourers' buildings</td>
<td>1835</td>
</tr>
<tr>
<td>Turina Ferdinando di Casalbuttano</td>
<td>Prize</td>
<td>Enhancing productivity of 5,000 pertiche of land through drainage and the construction of irrigation channels</td>
<td>1839</td>
</tr>
<tr>
<td>Tinelli Carlo</td>
<td>Prize</td>
<td>Introduction of the american plough in lombardy</td>
<td>1843</td>
</tr>
<tr>
<td>Villa Carlo</td>
<td>Prize</td>
<td>Drainage of his property and the construction of irrigation channels</td>
<td>1845</td>
</tr>
<tr>
<td>Beccaria Bonesana Giulio</td>
<td>Prize</td>
<td>For enhancing the productivity of his land</td>
<td>1857</td>
</tr>
</tbody>
</table>
Congress, they opened a ‘Milanese Depot’ of wines in order to allow Italian products to be
discovered at the upcoming meeting of scientists. The initiative was part of the efforts led
by various Italian landowners of noble origin to emulate France in the production of quality
wines and was aimed at encouraging the production and sale of this valuable product
(Commissione Enologica Italiana, 1844). Propensity towards innovation, thus, not only con-
cerned production but extended to the demand side, with the active search of new markets
within and, possibly, beyond the state confines.

Prominent exponents of the most advanced ranks of the Lombardy nobility also actively
encouraged emulation of technology from more advanced European countries through
their participation in international exhibitions of manufactured products. In 1851 the
Chamber of Commerce of Milan officially sent members Luigi de Cristoforis and Antonio de
Kramer to London for the Chrystal Palace Exhibition. On his return to Milan, de Kramer
brought back new equipment and gave speeches about what he had seen, convincing the
Societies for the Encouragement of Arts and Crafts of Milan and Padua to jointly purchase
some examples of agricultural machinery suitable for northern Italian cultivation. (Lo
Spettatore. Rassegna letteraria, artistica, scientifica e industriale, 1857; Robbiati Bianchi, 2007).
From 1843 De Kramer also contributed to the activities of the SEAC as a teacher, being
appointed to the first school and chemistry course established by the institute.

Another way of enhancing developments in agriculture was through specialised journals.
This means was used by the nobleman Ignazio Lomeni (1779–1838), internationally renowned
for his essays on the breeding of silkworms and the cultivation of mulberries and rice, as
well as for the invention of a new machine to press grapes (Canetta, 1887). Along with Count
Luigi Bossi, Lomeni was the editor of and main contributor to the Annali Universali di
Agricoltura, Economia Rurale e Domestica (renamed Annali Universali di Agricoltura, Industria
ed Arti Economiche and then Giornale Agrario Lombardo-Veneto), a Milanese periodical pub-
lished from 1826 onwards for the diffusion of new agricultural techniques (Berengo, 2012).
From 1854 to 1858 the journal was under the editorial supervision of the nobleman Francesco
Peluso (Della Peruta & Cantarella, 2005).

Beyond the institutional circles, the aristocratic network that spread within and outside
Lombardy represented a powerful means for the transmission of new practices and ideas
at an informal level. The case of Count Vincenzo Dandolo (1758–1819), translator and prop-
grator of the main European treaties of modern chemistry in Italy and a pioneer for the
development of sheep farming and the silk industry (Pederzani, 2014), is particularly note-
worthy in this respect. One of the most recalled initiatives of Count Dandolo, the introd-
cution of merino sheep in Lombardy, was conducted by following the steps of the Pastoral
Society of Chivasso, led by Counts Benso of Cavour and supported by the main aristocratic
families of Piedmont. The Society’s initiative was the execution of the first experiments
conducted on the merino sheep by Count Carlo Lodi and other noblemen who had founded
the Ultramontane and Piedmontese Agrarian Society in 1785 (Romeo, 2012). To establish
and maintain contacts with the Pastoral Society, Dandolo relied upon his friend Luigi Bossi,
an intellectual from the Milanese nobility who was a member of many scientific societies
and academies throughout Europe and commissioner of the Cisalpine Republic in Piedmont
(Carta, 1835; Dandolo, 1804; Sebastiani, 1971; Società di Agricoltura di Torino, 1805). To
improve the silk industry, Dandolo invented a cocoonery that allowed a saving of from half
to two-thirds of mulberry leaves, established an agrarian school on his property to instruct
new silkworm producers from different parts of northern Italy, and started to test new
spinning and weaving machines. The count further spread his ideas with the support of publications and conferences, which excited curiosity and led to emulation especially among his peers. Many noblemen from the Mantova and Verona areas personally visited the establishments of Dandolo’s collaborators to witness first hand his new techniques and some of them, like the Marquis of Canossa and Count Solari, also participated in testing the cocoonery (Dandolo & Compagnoni, 1820). The aristocratic network was also useful to Count Ludovico Barbiano di Belgioioso, who duplicated the experience of Count Ettore Silva for the cultivation of mulberries (ASCM, Fondo Belgioioso, 277). Similarly, members of the Lombard nobility personally contacted Cosimo Ridolfi in Tuscany to have their agents and farmers instructed at his institute or to find skilled personnel who had been trained in Tuscany (Pazzagli, 2008).

The introduction of new techniques, machines, or crops sometimes failed or did not prosper. But even unsuccessful attempts demonstrated that non-marginal segments of the Lombard nobility shared — and contributed to enhance — values oriented towards efficiency improvement and technical change.

The nobility was deeply involved in the silk industry in many aspects of production and trade. This became apparent with the outbreak of pebrine in the 1850s, which determined great losses in production and a response from the nobility at both informal and institutional level. In 1858 the SEAC created a committee to investigate and find possible solutions to the silkworm disease. The committee included the above-mentioned agronomist Francesco Peluso, the naturalist Giuseppe Balsamo Crivelli and Count Camillo Casati, chosen for his expertise in the breeding of silkworms (Società di Incoraggiamento d’Arti e Mestieri, 1858). At the same time, private contacts among peers proved useful to noble landowners and silk producers in purchasing high-quality silkworm seeds imported from Asia (ASM, 1856a; ABR, 1856). Among them there were also those who, like Count Pompeo Litta and Modesto Gavazzi, members of a noble family of great silk manufacturers, personally travelled to present-day Uzbekistan in search for a better raw material (Gavazzi, 2003).

In the aftermath of Italian political unification, the Lombard nobility continued to promote advancements in agriculture despite the emergence of new ranks of rural entrepreneurs and indeed worked in close collaboration with them. Exponents of the Milanese nobility were among the founders and leaders of the Milanese Comizio Agrario (1866–1923) and the Lombard Agrarian Society (founded in 1862), established as a means of promoting scientific and financial improvements in Lombardy agriculture. Both institutions represented the entire category of landowners, which at the time already counted a majority of non-noble landlords (Braga, 1990; Brianta, 1994).

Those who were not at the forefront of agricultural innovation in many cases fully participated in the administration of their properties. The private correspondence of Lombardy noble families reveals that in many cases owners were attentive managers of their agricultural possessions or closely controlled them (ASM, 1856b; ASCM, Fondo Barbò; ISEC, Archive Lucini Passalacqua; Corgnati, 1984).

The management of agricultural resources also captured the attention of noblemen intellectuals. Luigi Bossi published an annotated edition of Melchiorre Gioia’s works about rural administration (Bossi, 1829). The member of a family who strongly relied upon the collaboration of good managers (AFCAG, 1816), Count Pompeo Litta Biumi, dealt with the inevitable problem of the control of large properties in a report presented at the I.L.: aware that most
great landowners could not be expected to leave their villas in Milan and become expert farmers, he insisted on the importance of choosing capable and reliable agents in the countryside (Robbiati Bianchi, 2007).

As a result of this interest in the exploitation of the main source of prosperity in Lombardy at the time, it is not surprising that Cosimo Ridolfi’s apprentices who went to work as farmers on the land of Lombardy noble families pointed to the power and control exercised by the general agents, who held control over all activities in the countryside in constant communication with the owners, as the main feature of the local productive system (Pazzagli, 2008).

The cases mentioned so far were the most active exponents of a class composed of generally prominent families who experienced continuous fortune by virtue of their ability to manage their rural properties in accordance with the needs of the market. Their success was ensured by the cooperation of competent farmers and agents, but also by a long-established tradition of agricultural management nurtured by the scientific revolution and enlightened reforms. In the mid-1850s, all these subjects had concurred to make Lombardy the most productive area in Europe, with more than a half of its territory devoted to regular cultivation (1,152,700 hectares) with only residual portions of infertile land (Jacini, 1857).

Conclusion remarks

The Milanese nobility, or at least the most advanced segments of this group, were thus able not only to defend their own interests, but to fully participate in the process of modernisation that characterised the Lombardy economy and society between the eighteenth and nineteenth centuries (Banti, 1989; Meriggi, 1992). Despite the loss of their leading role as public-office holders (Levati, 1997, 2001), they maintained a key function in promoting, orienting and supporting the local economy in collaboration with new ranks of entrepreneurs. This would explain the words used by the German jurist Carl Mittermaier to describe the Lombardy aristocracy in his 1844 essay on the condition of Italy: an ‘active and industrious class within an expanding civil society’ aimed at presenting itself as the guarantor of social cohesion by no longer acting as a group assimilated to public power, but as a private elite (Meriggi, 1988).

To conclude, in the nineteenth century, gentlemen’s esprit du rentier did not stifle the esprit de l’entrepreneur in Lombardy (De Maddalena, 2000). New entrepreneurial initiatives allowed a number of Lombard noble families to consolidate their position in the primary sector and, in some cases, to play a leading role in the country’s agricultural development. Not all the efforts were crowned with success. But the capital and energies spent in inventing, testing, improving, adapting, and spreading more or less valuable innovations testify to a mentality oriented towards risk and efficiency that was the necessary precondition for the creation of new profit-making opportunities in this sector and to survive its crises. The division between a rentier nobility class and a productive modernising bourgeoisie has to be smoothed. The sources kept in public and private archives also point to the need to reassess the role of the nobility in other economic sectors, calling into question the scope and the nature of this group’s historical decline. How far Lombardy followed a distinctive path with respect to the rest of the peninsula is still an open question, which deserves further studies and research.
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