

Marie-Lucie Rossi, « Performances of agriculture in Reggio Emilia in the nineteenth century: an economic and social construction »

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Abstract

Reggio Emilia is famous for four products (PDO): Red cow (*vacca rossa*), White pork (*Yorkshire Reggiano*), Yellow cheese (*Parmigiano Reggiano*) and Sparkling wine black (*Lambrusco*). The analysis of books of accounts from farms justifies these associations. Until 1859 predominates with integration to markets in Austrian empire, raising cattle for meat (*bovi* and *giovenco*). With the closure of borders after 1876 and the creation of the new Italian domestic market, we develop the cheese industry (*casello*). While raging in Europe after 1885 the wheat crisis and the phyllosera crisis, Reggio Emilia, easily transforms the cattle for meat in a dairy cattle and builds a new vineyard with the money from the sale of fat pig. Indeed, between 1854 and 1873, imports of pig breeds English improve the local breed and a new breed of swine of Reggio Emilia invades European markets. These changes non-stop are explained by the *perfetta mezzadria*. It is an operating system that requires between employers and workers association of interest: every actor provides (gradually if it is necessary for the peasant) half of the capital and immediately in exchange receives half of revenues. This flexible and integrator system is responsible of the agricultural performances in Reggio Emilia.

CV

I am working on the unpublished archives of the great families of the Italian aristocracy. The practice of the agricultural accounting books leads me to follow the passage of heritage conservation with rents in search of a business income. However, this profit wants an optimum collaboration between land, capital and labour with the development of flexible contracts based on inputs of capital by all the members. Reading theoretical books of accounting also allows me to understand that this passage is the result of a tax policy that encourages entrepreneurial agriculture. After a PhD at the EHESS, I prepare a HDR (Habilitation à diriger des recherches) at Paris1Sorbonne.

Performances of agriculture in Reggio Emilia in the nineteenth century: an economic and social construction

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The landscape is a complex compound in Reggio Emilia a plain in Italy between Milano and Bologna: cattle and pigs for meat, cheese, alfalfa and vineyard. After 1876, animal breeding in Reggio Emilia specialized in cattle fattening since the half of the eighteenth century is now directed to the cheese industry. If a productivity problem is at the origin of this evolution of the breeding of cattle for meat in cattle for milk, what is the role to the hog until we realize development of the wine industry only at the beginning of the twentieth century?

We must also ask how this landscape born in the operating farms of large estates (*Tenuta*) to the mid-nineteenth century became the country's landscape at the end of this century: from the center of the plain across high plains toward mountains and across the low plains until Po river, we observed the growth of the alfalfa planted with vineyards and the livestock swine. Also, in 1914 the importance of cooperative buildings for the refinement of cheese (*casello*), for the hog industry (*porcilaia*) and for the wine storage (*cantina*) testifies that Reggio Emilia occupies leading positions at international level in cheese (*Parmigiano Reggiano*), in hog (*Yorkshire Reggiano*) and in wine (*Lambrusco*).

Finally, we also must explain the territorial diffusion with the economic success and the social success of this enterprise. The capitalist and (in same time) the entrepreneur owner and the worker and (in same time) the operator of the land have in common flocks: they are also interested in increasing performance. This leads them to re-negotiate regularly and temporarily their costs and their operating conditions without ever touching to their equal share in profits if they are already sharecroppers (*mezzadri*) and accept the principle of co-sharing (*compartecipazione*) by virtue of their initial inputs if they are employees: they are partners in business (*soci*)².

I. The variety Red Spotted cattle

The engineer Giacomo Maffei, administrator of the biggest owner in the province, gives in May 1854, a memorial to the *Agricultural Society of Reggio Emilia* where he explains that "The two fat oxen of Fribourg (Switzerland), presented by the aristocrat Giovanni Battista Spalletti at the Market of the city of Reggio Emilia last year each had a weight of 1235 kg". But, what kind of animal fat are we talking about?

I.1. Exports of fat ox?

The system of permits trading between the Estense State and the Austrian Empire from 1757 to 1836 allows early development of a trading relationship that is reinforced by the progressive introduction of free trade from 1837 to 1859 in the Hapsburg Mitteleuropa and by the proliferation of bilateral treaties from 1860 to 1884 between the new Italian State and the powers of the North-West and Central Europe. The counting of the Archives of Customs and the reading of the records of the company of railway in the province of Reggio Emilia certifies increased exports of cattle during the period between the end of Mercantilism and the return to protectionism: the average increases of 4,000 heads of cattle in 1770 to 5,500 heads in 1830 and climbs to 20,000 heads in 1880. What about this steady increase in exports?

I.2. Profitability of fattening?

The farmer must know whether to produce an old fattened ox or a young steer super fattened? To find a solution, we must analyze the management of the farm. The opinion of experts seems

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² Rossi M.-L. (2006), *Les entreprises de culture améliorante ou l'aménagement du terroir en plaine de Reggio Emilia à l'époque du libéralisme concurrentiel (1748-1922) pour une modélisation du management Spalletti*, doctoral thesis under Maurice Aymard, EHESS, Paris, 1399 folios. The numbers and percentages presented in this article are all from this thesis. In this thesis there are also citations of archives for to explain the interpretations and the conclusions contained in this article.

unambiguous throughout the nineteenth century. In 1809, the engineer Bolognini wrote: "It is always a bad speculation fatten cattle for sale"³. However, in 1869 in Paris, Professor Henri Magne informs of the birth of a new branch in the animal husbandry industry, "it is a livestock intended exclusively to provide meat". In 1898, the Italian agronomist Niccoli, stating that "the predisposition to gain weight is profitable only when animals are young and early", wants to get a maximum net meat in little time⁴.

What is the type of breeding in *San Donnino*, large estate of over one thousand hectares in the south-eastern of the plain of Reggio Emilia and belonging to *Casa Spalletti*? The steer of race Spalletti is a young animal of 15 months that wins daily 1150 gram: it allows a profit. Indeed, from 1841 to 1848, the book of the cowsheds in *San Donnino* notes the imports of bulls of Fribourg.

After a short period until 1854 of crossing between the local Red breed of Reggio and the Spotted breed of Switzerland, breeder establishes a selection policy in purity who leads to the creation of the *variety Spalletti* at the World Exposition in Vienna in Austria in 1873: the new variety condemns by this victory the fattening of the old ox of Reggio. The result is spectacular because the fat animal that weighed in 1840 only 290 kg at 36 months now weighs in 1870 610 kg at 15 months⁵. Until 1914, the scientist in Italy magnifies the experience of the *cattle Spalletti*.

II. The long aging cheese

From the great agricultural depression to the isolationism of Mussolini, the province of Reggio Emilia compared to the Italian production in the second decade of the twentieth century produces less than 4% of the butcher's meat, but over 25% of the hard cheese. Why this change?

II.1. Selection of dairy cows

In 1854, Carlo Roncaglia, an *Estense* statistician does not mention cheese industry among the major regional industries⁶. Then suddenly, in 1886 is published the work of Jacopo Rava, a Lombard cheese maker to the glory of the Parmesan cheese from Reggio⁷.

According to the livestock census of Italy, there was an increase in the number of cows (*vacche*) at the expense of the number of cattle (*bovi*): the percentage rose from 40 in 1847 to 53 in 1875 and to 60 in 1908. The race cattle *Red of Reggio* in 1848 is still a mixed breed with a low susceptibility for milk (3.80 liters per day and solar year) despite an improve from 1841 to 1873 due the livestock of *Casa Spalletti* through to the crossing with the *race of Fribourg* (5.07 liters). From 1876 to 1908 are required multiple imports of *Simmental Switzerland*: the result, by interbreeding, is the development of the improved race *Red of Reggio* (6.61 liters).

This evolution of the race of cows reflects the study of accounts of farmers (*libri dei poderi*): since the early eighties of the nineteenth century, the creamery became more profitable than fattening (130 lire from the sale of a beef for meat against 144 for the conversion of the milk of a cow in cheese) and the gap widens in the first decade of the twentieth century (150 against 198 lire).

II.2. Assessments on production of cheeses

This change in the breed Red of Reggio is accompanied by the amplification of the role of the dairy, which allows an economic significant rebalancing between the villages of the province between the second third of the nineteenth century and the second decade of the twentieth century.

From 1881 to 1914 the number of dairies increases of 138% and for each dairy, the production of cheese increases of 152%. Under the leadership of Giuseppe Namias for consolidate the brand image, the quality and the typical traditions of the cheese *Grana Reggiano*, a collective grouping

³ Bolognini, L. (1809), « Dal governo del bestiame bovino nel dipartimento del Crostolo e suo commercio », *Annali del Regno d'Italia*, p. 193-225.

⁴ Niccoli, V. (1898), *L'alimentazione del bestiame*, Torino.

⁵ Rossi, M-L. (2001), « Una esperienza zootecnica moderna a San Donnino di Casalgrande (1841-1880): il giovenco grasso della Varietà Spalletti », *Bollettino Storico Reggiano*, fasc., n°112, 2001.

⁶ Roncaglia, C. (1850), *Statistica Generale degli Stati Estensi*, Modena.

⁷ Rava, J. (1886), *Il Parmiggiano Reggiano*, Lodi.

brings together a professional association of cheese makers and the union of the dairies of the province.

Also noteworthy is the dynamism of the dairy industry of the province of Reggio Emilia: 80% of the production is exported. In 1913 17% of the Parmesan (*Parmigiano*) in Italy is produced by the province of Reggio Emilia against 10% in 1892. In the first decade of twentieth century, the *Grana Reggiano* represents between one third and one quarter of total exports of Italian cheese⁸.

Finally, we must emphasize the weight of livestock of Reggio Emilia. In the early twentieth century, Reggio Emilia, is third behind Milan and Cremona for the density of livestock in relation to km² and at the forefront for the number of the cattle because of its population. If, to end the record list, this classification is compared to the number of cattle on the plain, in 1908 Lodi have a density of cattle for hectare of 1.04, while Reggio Emilia reached 1.12. But this high ranking, which was already a tradition for the city of Reggio Emilia and in the high irrigated plain on the West, becomes also true on the plain to the East and North of the province. Indeed, one can see four stages in the advances of the cattle in the territory of the province of Reggio Emilia. From 1787 to 1847 the plain on the center of the Western (Cavriago) prevails: is the cradle of traditional breeding in the province. From 1847 to 1869 the plain in the centre of the province around the city of Reggio Emilia (Castelnuovo Sotto) develops. From 1869 to 1881 increases the high plain of the East (Scandiano) and then the plain of West along Po River (Guastalla and Luzzara). From 1881 to 1915 the cattle progresses in the plain of East along Po River (Reggiolo) and in the middle of the plain of East (Correggio). Thus, according to the number of cows, from 1847 to 1918 Western and Central plain decreases 81 to 49%, the land along the Po river increases 13 to 33% and the East of the plain goes up 6 to 18%⁹.

To understand this reversal in favour of the cheese industry, we must explain the role played by breeding pigs.

III. The citadel of the Yorkshire

After 1868 the province of Reggio Emilia became the first centre of breed of pigs in the region of Emilia and then in Italy: this primacy pays the transition from the beef cattle to the dairy cattle.

III.1. Development of a pig for benefit

In the creation of the breeding of *Yorkshire of Reggio Emilia*, there is a central phase from 1853 to 1873: this processing, quick and easy, becomes a constant source of enrichment accessible to all.

A letter of Giovanni Battista Spalletti to the *Agricultural Society of Reggio Emilia* in 1853 presents the results of a cross between a Black sow of Reggio Emilia and a White and Little Yorkshire breeding boar of England: becomes the new pork super fatted in just 13 months instead of 18. This breeding gives rise to the *Black and White race of San Donnino* circulated by the *Agricultural society of Reggio*. The new breed is certainly a very early race, but too eater in cereals and sometimes infertile.

Under the direction of Antonio Zanelli in the *Institute of Animal Science of Reggio Emilia* from 1873 to 1893 is chosen a cross continuous with the Great Yorkshire of England breed only a little less precocious, but much less prolific and much less voracious. Scientific investigations are published on the claim that fattening should continue only until the full development of the young animal bred precocious¹⁰.

The improvement of a breed of pigs is both easy and immediate: it is indeed known that the transformation of a pig breed is fast (over 8 generations) and low cost while the editing a breed of cattle remains slow (at least 30 generations) and very expensive: a pig race is less than 200 Italian lire while a bull of race Switzerland equals 2.000 lire. This new White pig spreads so quickly that

⁸ Fascetti, G. (1915), *L'industria casearia nella provincia di Reggio Emilia: quadri statistici*, Reggio Emilia.

⁹ Montanari, P. (1911), *Le carte casearie della provincia di Reggio Emilia*, Reggio Emilia.

¹⁰ Zanelli, A. (1882), « Ricerche sperimentali sull'ingrassamento dei suini di diverse razze », *Atti R. Scuola di zootecnia e caseificio in Reggio nell'Emilia*, Vol., 2: 1877-1880, p. 38-58.

the competitions among breeders from 1892 decide to delete the section for the local pig breeds. The exports that have doubled between 1816-1837 and 1874-1884 increase by another 50% between the 1874-1884 decade, and the year 1911 and again between 1911 and 1917.

III.2. A source of general enrichment

In 1890, Zanelli in an article published in the *Bulletin of the Agricultural Society of Reggio Emilia* is categorical: "While the farming crisis continues, the pigsty is a true asset for the tenants and for the owners". Indeed, from 1873 to 1893, only the price of the hog remains constant on the rise.

Therefore, the hog breeding breaks down into several areas affecting the entire agricultural society. First, there is a large and regular production of piglets: the weekly market of Reggio Emilia has become the largest in Italy. Then, all studies in agricultural newspapers, about 1900, say the hog sales of the farms each year in April and August. The feeding often begins in the farm (*mezzadria*) and continues in the dairy (*casello*) with the residues of cheese: the net benefit to sell lean pork for the farmer is at least 60 lire and is 80 lire for a fat pig of the dairy.

Next the prices of the cereals and the calls of the markets, it is therefore possible for the farm worker (*braciante*), for the sharecropper (*mezzadro*), for the tenant (*affittuario*) and for the farmer (*possidente*) or the producer of cheese (*casaro*) raise a pig, still very thin (*terzone*) of 90 kg, a lean pork (*magrone*) of 110 kg, a pig subjected to a beginning of fattening (*magrone in ingrasso*) of 150 kg, a fat pork (*maiale*) of 210 kg or a super fattened pig (*suino grasso*) over 250 kg¹¹.

IV. Alfalfa and Black sparkling wine

Fattening pigs and cattle can not be separated from its fodder context: the triumph of the intercrops (weeded or green) married to a very high grape vine with a long cutting. In addition, this choice is developing areas (away from breeding due to lack of water) adding to the cereals the extensive cultivation of the vine because of the phylloxera crisis in the traditional wine regions.

IV.1. An intensive grass stake

A study of the expansion of the grass after 1847 reveals a strong trend. From 1847 to 1919 we move from the permanent meadow (*prato stabile*) sometimes irrigated into an artificial and temporary meadow (*erbaio*). The extent of the grass meadow in the province of Reggio Emilia goes up from 16% in 1847 to 48% in 1919 including 30% of intercrops meadows with alfalfas (*medica*) and clovers (*trifoglio*). Until 1855, we increase the irrigated and permanent meadow. From 1859 to 1878, outside of the traditional rotation of the cultivated fields, the alfalfa field extends. From 1878 to 1906, we insert the alfalfa in the rotations and we develop new forages in intercrops. From 1906 to 1921: is the abandonment of the permanent meadows and the disappearance of the field of rice stable in favour of the lengthening rotation with regular frequencies between wheat (upland) or rice (lowland) and alfalfa, clover, rye, vetch, beans, maize or fodder beet¹².

This differentiation of the meadow led to the reduction of regional disparities traditional. From 1848 to 1878 is prevailing still the ancient superiority of the plain to the West of the city of Reggio Emilia characterized by the importance of the permanent and irrigated meadow. From 1878 to 1914 has held the growth of the grass in the plain to the East of the city of Reggio Emilia and in the plain near the Po River by the rapid spread of the fodder intercrops¹³.

This advanced of the legumes (green or in seed) with an intense use of manure instead of irrigation water in longer rotations also leads to a possible association with the vineyard, contained in a row of trees (*filare*).

¹¹ Vallisneri, A. (1905), « Produzione e allevamento suino nella provincia di Reggio Emilia », *Atti del V° congresso di allevatori di bestiame della provincia di Reggio Emilia*, 4 giugno 1905.

¹² Rossi M-L, (2004), *Il dinamismo del prato fra le piantate nella pianura di Reggio Emilia : un paesaggio in cantiere continuo (1748/1922), I quadri paesistici italiani*, Università di Siena, Tavola rotonda alla Certosa di Pontignano, 7 aprile 2004, 32 p.

¹³ Vittorangeli, G. (1907), « Appunti di praticoltura », *Agricoltore reggiano: organo ufficiale della cattedra d'agricoltura della provincia de Reggio Emilia*, 3 giugno 1907.

IV.2. A young and extensive vineyard

The province of Reggio Emilia has not a good winemaking tradition. Only the circumstances surrounding the spread of phylloxera in the classic wine regions orient the new wine growers of Reggio Emilia toward an extensive production and massive exports of acids and colourful musts.

Before 1900, we are still looking for a science of wine knowledge. According to studies of the first local winemaker, Augusto Pizzi, the market demands a black wine quality table ordinary. Therefore, we must first focus on the blended wine (*vini da taglio*) that are rot proof and have a strong colouring (*Fogarina* and *Lancellota*). We must also help to the dissemination of the *Lambrusco dolce di Albinea* that remains a specie highly insensitive to fungi and easily viniferous¹⁴.

After 1900, with the come back in production of the former European vineyards decimated during the time of the big phylloxera crisis, the Italian oenological knowledge raises the question of the profitability of an extensive vine growing inserted in the other agricultural activities. Finally, in Italy in the first decade of the twentieth century, is the end of the profitability of the old, intensive and specialized vineyard like in Tuscany or in Piedmont. The analytic accounts (*conti colturali*) reveal that only the *madera* vineyard of Reggio Emilia where the vine is always in combination with a forage allows a profit¹⁵.

Thus, the East plain of the city of Reggio Emilia becomes the leading provider of the Italian blended wines in Europe and builds the beginnings of a new wine black, dry and sparkling (*Lambrusco*)¹⁶. In fact in 1914, 87% of grapes are exported from the Eastern plains (Correggio) and from South Centre (Scandiano and Albinea): they represent 60% of wine production exported out of province and 45% of the exports of Reggio Emilia. A fundamental question looms: how to consolidate this unprecedented deal with the import of the major wine regions traditional? The role of the province of Reggio Emilia in the great trading of wine remains an exemplary advanced due to the creation of specialized halls in the storage. Some become private capitalists (*cantina privata*) under the control of a large trader, but very often they are social cooperatives (*cantina social*) composed of winemakers. So, they can add to the sale of blended wines, the manufacture of the table wine.

V. Associated in affaire

If the breeding of the *Yorkshire of Reggio Emilia* can make money and easy pays the transition from the breeding for meat to the creamery and the establishment of the vineyard, it is also the flagship piece of a fully system designed to enable a regional development because owner and worker are partners (*soci*) in business¹⁷. To explain surely this situation, we must point out the regular reforms of the status of the operators and the weight of the investment from the peasant.

V.1. The flexibility of the sharecropping

Sharecropping requires for the peasant to acquire half of operating capital¹⁸. However, we observe two kinds of anomalies.

A first series are the variations in the distribution of the operating expenses. Thus, the development of the super fatted calf of the *Spalletti variety* in the estate of *San Donnino*, because of the high cost of its implementation, leads to three reforms of the repartitions of charges visible in the accounts of farm operating (*conti di mezzadria*). In 1840, 40% of spending goes to pay for purchases of hay, straw and bedding for winter. With the Protocol (*protocollo*) of 1843, the peasant does not pay now the half but only the third party purchases of hay, straw and bedding. In exchange, for the future, he creates alfalfa fields previously constructed by the management. However, is emerging a new imbalance and, in 1860, 45% of spending goes to pay for purchases of

¹⁴ Pizzi, A. (1891), « Per la riduzione e selezione dei vitigni della provincia », *Bollettino del Comizio agrario*, 1891, p. 341-373.

¹⁵ Berna, R. (1926), *Avvicendamenti e consociazioni agrarie*, Torino, 1926, p. 219-220.

¹⁶ Cavazza, D. (1914), *Viticultura*, Torino.

¹⁷ Rossi M-L. (2009), « Métayer à la Casa Spalletti (1821-1922) : un parfait associé en affaires ? », *Réalités industrielles, Annales des mines*, février 2009, p. 56-63.

¹⁸ Rabbeno, A. (1895), *Manuale pratico della Mezzeria e dei vari sistemi della colonia parziaria in Italia*, Milano.

manure. If until 1843, the peasant fertilizes only the new alfalfa, from 1843 to 1852 he fattens the old alfalfa and after 1852 he improves all kinds of meadows. With the settlement (*regolamento*) of 1864, the peasant pays now only a third of purchases of feed and natural manure instead of the normal half. But henceforth, he must fertilize and supports the new fields of legumes. In 1870, we checked again a problem: 35% of spending goes to pay for purchases of chemical fertilizers. Since 1867, it is necessary to improve the hemp-fields and the crops in the fields with oilseed cakes. In 1870, for fatten the natural and stable pastures, appears manure from urban waste and since 1879 on the alfalfa we use the Guano from Chile. With the convention (*convenzione*) of 1879, the peasant pays anew half of the expenses for purchases of hay, straw, litter, manure or feeds for the cattle, but he spends only a third of expenditures for purchases of chemical fertilizers. So, the flexibility of the sharecropping contract agrees to set broad the priorities of operating because the owner accepts to convert the financial rules of the perfect operating (*perfetta mezzadria*) by paying 61% of the costs between 1843 and 1879.

A second set of variations show that it is no longer just temporarily change the distribution of the operating expenses, but it is admitted temporarily a peasant without operating capital for make profitable new products quickly. In the estate of *Sant'Ilario* in 1898 *Casa Spalletti* accepts peasants without livestock for to increase production and variety of forage crops: are cut in the large farms, new and small farms where the livestock is anticipated by the owner. In 1914 the annual account of the estate (*resoconto generale di tenuta*) shows that the newest sharecropper, still in debt by the gradual acquisition of its initial share of stock, already have more a quarter of the total livestock and regularly participates in operating expenses for half. Even more revolutionary is the creation of a new kind of farm that does not require the ownership of livestock. Thus, a letter from the manager of the estate of *Sant'Ilario* in 1913 refers to the creation of a new type of management: "We must promote sharecropper the worker in the vine. It will be given a house, a vine and a few acres where he cultivates fodder for fattening cattle in the sharecropping with cowsheds and barns".

Finally, it must also integrate the poorest farmers. Traditionally in the areas with heavy flooding dominates the wage system where the worker receives a fixed salary (*Terzeria*). Gradually *Casa Spalletti* aims to favour the worker engaging in the results. In the estate of *Riviera*, the skilled and co-interested (*co-interessato*) worker in the new beet sugar culture is receiving a fixed salary equal to the 33% of the crop value and an amount that varies and depends on the productivity in the hectare. In 1912 the administrator intends to give 47% of the harvest for wage. However, this co-sharing system (*compartecipazione*) should remain a temporary pending the establishment of the perfect or no perfect sharecropping.

In short, we note that for a sharecropper or a future sharecropper all these changes in the provision of operating capital never touch the distribution of annual income¹⁹ because the owner is obliged to give to the peasant a land productive and in good condition (*stato lodevole*)²⁰. Therefore, finally, all these changes are always temporary in the time and in the space and limited to the initiation of novelty so that to long term, we note especially the very large investment of the peasant.

V.2. Investments of the peasant

The necessity of having to share the profit with a sharecropper or a worker co-interested (*salariato co-interessato*) necessarily leads the owners to the ordering of the operating accounts²¹. Since the date of the last major reform of the status of sharecropping in 1879 with the restoring of

¹⁹ Rossi M-L, (2010), « Le revenu social légitime : le partage des fruits à moitié », *Sismondi e la nuova Italia*, Convegno internazionale di studi, Associazione di studi sismondiani e Università di Pisa, Pescia-Pisa, 7-9 giugno 2010.

²⁰ Bastoni, G-A. (1905), *Commento a un contratto di mezzeria*, Firenze. See Rossi M-L, (2010), « La comptabilité de la valeur et les inventaires de biens-fonds monastiques à Reggio Emilia (1755-1857) » *Fra cultura scientifica e cultura economica: matematiche e contabilità in Europa (XIV-XIX secoli)*, Centro interuniversitario per la storia del clero e delle istituzioni ecclesiastiche, Siena, ottobre 2010.

²¹ Rossi M-L, (2009), « Les archives agricoles de la Casa Spalletti (1821-1922) : conserver pour entreprendre », *La Gazette des archives*, n°213, 2009, p. 103-117.

the financial situation by the success of the improved breed of Reggio Emilia, we observe simultaneously at *Casa Spalletti* three proliferations of the operating charges²².

First is the rising cost of the ordinary cultivation of the domain given in sharecropping because expenditures for innovations join the ordinary expenses. From 1879 to 1914, the owner and the peasant pay each half all the expenditure for the cultivation and for the breeding. Then, there is an increase in livestock: the sharecropper in Reggio Emilia is the owner of the cattle in association with the owner of the land (50% for each) and no derogation is permitted on a long time. The exceptions for this rule are temporary and are only dictated by the high cost of genetic modification. The sales of the fruits of the livestock augment a third in number and in value from 1872 to 1913. Finally, there is a development of fodder: from 1838 to 1856 we propagate the alfalfa, the clover and the lupines (*invernaglie*), from 1854 to 1864 multiply the planting of grain for livestock and the purchases of concentrate feed (*mangimi*) and finally after 1870 appear cakes for cattle (*panelli*). The agricultural expertise (*consegna e riconsegna*)²³ removes the accounts with sharing half of losses or profits. The return to the perfect farm after 1879 in the distribution of charges for stock feed and livestock becomes the symbol of the success of peasant capitalism in Reggio Emilia. Finally, from 1885 to 1914, a regular increase of the chemical fertilizers in the vineyards normally paid (by owner and sharecropper) confirms the weight of the capital of peasant origin.

In Reggio Emilia, the change of the fat calf for a cheese shows a long and expensive genetic evolution of the cattle paid by the genetic revolution of the pig, rapid and profitable, which in turn allows the maturation of the new vineyard. This scheme, developed in *Casa Spalletti* and in others large landowners, spreads after 1870 in the province and explains why Reggio Emilia in 1918 continues as the leading center for breeding in Italy and became the new center of the viticulture. Together, the owner and the sharecropper made the necessary choices for investment to produce more at lower cost: they reorganize the territory of Reggio Emilia first with a Western lowland based on the economy of the meat and the milk and a plain of Eastern refocused on viticulture for after 1900 extend across the entire plain the *Yorkshire Reggiano*, the *Parmigiano Reggiano*, and the *Lambrusco Reggiano*²⁴. However at closer inspection, this "mental model of the perfect sharecropping" is not only a forgotten legacy of the past. With a flexible legal form that allowed for numerous variations of the financial burden for the cultivation of a farm with cowshed, the sharecropping was a system receptive to the economic innovation and the social cohesion. The sharecropping by the continuous rotation with all the other forms of the land management and after the interested worker system and before the rental to the precedent sharecropper remained a profitable enterprise integrated with the market economy (calf to butcher until 1880, dairy and viticulture after 1880) of the North-West Europe. To have been proposed as a model between 1933 and 1942 in Italy, poor of agricultural modernization, it died only for ideological and political reasons in 1947. However, this mental model of co-sharing revives with the "industrial district" (*distretto industriale*) where it's always the idea of collaboration between actors in an area that plays the primary role. The peasant with his participation in the expenses of the culture and with his operating capital and the entrepreneurial owner as *Casa Spalletti* have not only contributed to the industrialization of agriculture, together, they built the foundations for the industrialization of the *Third Italy*²⁵.

²² Rossi M-L, (2010), « Savoir compter mieux pour entreprendre plus : la Casa Spalletti en Italie au XIX^e siècle », *Cheiron* (à paraître).

²³ Rossi M-L, (2010), « Le caméralisme Italien et l'émergence de la comptabilité de la valeur et du coût d'exploitation (1755-1857) », *Les comptes publics : enjeux, pratiques, modèles (1500-1850)*, Colloque international, Université Paris X Nanterre, 10-11 juin 2010 (à paraître).

²⁴ Rossi M-L, (2010), « Produits régionaux et développement territorial à Reggio Emilia au XIX^e siècle », *Typicality in history: tradition, innovation and terroir*, international study conference, University of Parma, Institute of Economics, Parma, September 10-11, 2010.

²⁵ Bagnasco, A. (1988), *La costruzione sociale del mercato : studi sullo sviluppo di piccola impresa in Italia*, Bologna.