Rural History 2010

13-16 September, University of Sussex, UK

Social and environmental filters to market incentives: Common land persistence in 19th century Spain

Francisco J. Beltrán Tapia

University of Zaragoza

beltranf@unizar.es

ABSTRACT: The regional diversity of communal persistence in 19th century Spain has been well documented by historiography. Although the explanation of this divergence has been attributed to the social and environmental context, together with the prevailing market incentives that characterized the different rural societies of this period, there has been no clear assessment of the role played by each. Through a comparative study of the historical data at the provincial level, this paper analyzes the relative contribution of these elements to that divergence. The results diminish the significance of market signals and show how the social and environmental conditions of these communities interacted to limit, or promote, the dismantling of the common lands.

Key words: Spain, 19th century, common lands, privatization, socio-ecological context

1. INTRODUCTION

The importance of the commons in the reproduction and development of rural communities in pre-industrial economies, and their capacity for adaptation and innovation, have already been examined by extensive research, both in the European case (De Moor 2002; Allen 2004), and in the Spanish case (Moreno 1998; Lana 2006, 2008). In a rural world, whose productivity depended significantly on the use of the common lands, the welfare of these communities was influenced by their availability and by the way these resources were managed. The changes brought about by the transition to capitalism that European economies experienced threatened the kind of property and management that these collective lands had been developing throughout the centuries, and upset the traditional balance that had characterized these economies[1].

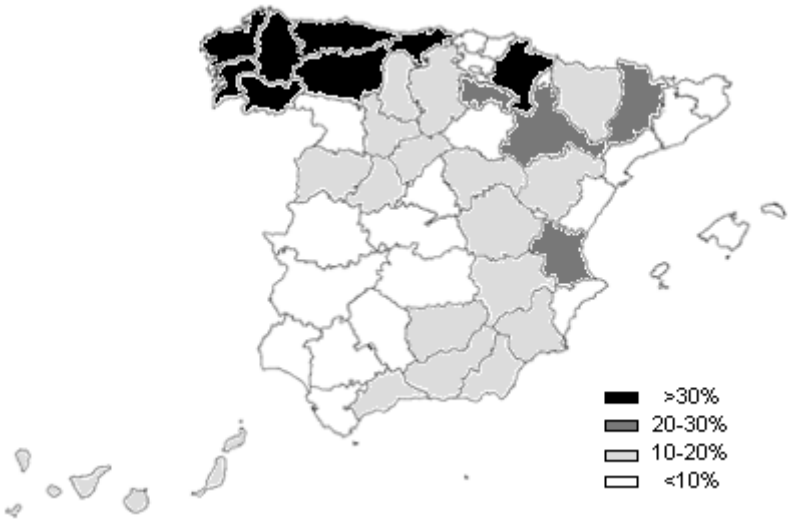
The communal regime in Spain was not immune to these trends and suffered, from the end of the 18th century, a transformation process that affected both its property regime and the way these resources were used[2]. On the one hand, local communities had to adapt to the gradual onset of capitalism and the increasing role that markets were beginning to play. On the other hand, the establishment and consolidation of the new liberal state involved an attempt to accelerate its arrival by trying to privatize these resources - and to exert influence over the management of those lands that remained under the control of the rural community - through a kind of progressive interventionism. Both processes led to a massive privatization of common lands during 19th century Spain, not only of their property rights, but also of the way in which these resources had been traditionally used. However, the outcome of the process was quite

[1] See Allen (1992) for a review of the English case and Vivier (1998) for the French case. The book edited by De Moor (2002) includes studies of the Low Countries, Sweden, Germany and England.

[2] Summaries of what happened in the Spanish case can be found in Balboa (1999), Jiménez Blanco (2002), and Iriarte (2002).

different, both in pace and intensity, depending on the geographic area analyzed (GEHR 1994, 1999). Map 1 reflects the diverse persistence of common land at the end of the process[3].

MAP 1
Persistence of common land in Spain, 1900 (% of the total surface area)



Source: GEHR (1994) and Gallego (2007); excluding the Basque Country.

The first works to examine the destiny of common lands in Spain attributed a leading role in their dismantling to legislation introduced by the central government throughout this period (Sanz 1985; Jiménez Blanco 1991). The rising liberal state, striving for its consolidation, would be the driving force of the process and the key to an understanding of its extent[4]. However, without denying the boost it gave to the

[3] Given the hybrid nature that characterized the concept of the "commons" in 19th century Spain, this article, following Iriarte (2002), identifies common lands as those lands that were collectively managed at the local level, in spite of their ownership being collective, municipal or public. See the Appendix for a more detailed discussion of this issue.

[4] The main motivation was ideological: to promote the establishment of the "perfect property" and market mechanisms throughout the rural sphere. The privatization of common land was justified as encouraging greater social efficiency, having among its aims the promotion of arable land. On the other hand, the

process, a reform imposed from the centre does not explain the diversity of regional outcomes. In fact, the role played by liberal policy during the first half of the 19th century was restricted, since it limited itself to establishing the legal framework that allowed municipalities to freely dispose of their patrimony[5]. It was not until the decade of the 1850s, when privatization was already quite advanced in certain areas, that the liberal state became actively involved in the process[6]. The diversity observed in different areas of the country thus indicates the presence of some elements that conditioned the outcome of this policy. Although the explanation of this diversity has been attributed to the social and environmental context, together with the prevailing market incentives that characterized the different rural societies of this period, there has been no clear assessment of the role played by each (GEHR 1994; Iriarte 2002)[7].

---

disposal of municipal wealth would have undermined the village's financial autonomy, smoothing the establishment's way to the achievement of a centralist state (Jiménez Blanco 2002, 147).

[5] Among the legislative landmarks of the first half of the 19th century, two stand out: the law of 1812 that granted full legal capacity to private property, and the law of 1832 that assigned common lands to municipalities, allowing them to sell these resources freely (Sanz 1985).

[6] Besides the Disentailment Law of 1855 itself, other state interventions were the creation of the Land Registry Office, the establishment of a registry of ownership (*catastro*) and the appointment of the Civil Guard to watch over rural property (Iriarte 1998). According to Lana (2006) and Cabral (1995), who present data from the end of the Ancient Regime, the amount of land privatized during the first half of the 19th century was not only greater than that sold from 1855 onwards, but also of superior quality, which enhances the importance of that period.

[7] According to the GEHR, the central government was compelled to adapt its conduct to the specific economic, social and environmental conditions of each territory (1994, 132). See Gómez Urdáñez (2002) for an analysis of the flexibility that successive liberal governments showed in different contexts, not only until 1855, but also in the so-called "general" disentailment law, that provided a loop-hole for the villages to request the exception of their common lands. In this sense, Balboa stresses that, although the municipalities partly lost control over the privatization process, certain local conditions were able to influence and orient the application of the law (1999, 100). Iriarte shows, for the Navarran case, that the disentailment law of 1855 did not mean any change, and he stresses the strong prominence that municipalities had in the process, since almost all the exception requests made by the villages were granted, being such decisions thus ultimately taken at the local level (1992, 211).

Through a comparative study of the historical data at the provincial level, this paper analyzes the relative contribution of these factors to the different levels of persistence of common land in 19th century Spain[8]. The use of scatter plots, rather than econometric techniques, allows for a detailed discussion of the various elements that contribute to the complexity of this phenomenon[9]. With this aim, we first examine the market incentives that drove the process, and then focus on the social and environmental framework that characterized the different rural communities. These diverse elements constitute a complex web of reciprocal influences, where the joint interaction between social and environmental conditions prevails over market pressures in shaping the privatization process. Local communities were thus able to retain control over the property and management of collective resources to a greater or lesser extent, depending on the social and environmental context in which they were immersed.

2. MARKET INCENTIVES

One of the aspects that would influence the dismantling of the commons was the market incentives resulting from the rise of farming and forestry prices due to a growing population, and the slow but gradual economic growth that increased the demand for agricultural products and raw materials such as timber, resin, cork and

[8] Although the dismantling of the common lands also implies the privatization of their use (González de Molina and Ortega 2000), my aim is to focus on the redefinition of property rights. This process refers not only to the disentailment carried out from 1855 onwards, but also to other processes prior to, and after that date, such as sales made by local institutions, usurpations and appropriations, arbitrary ploughings, etc. (López Estudillo 1992; Balboa 1999; Jiménez Blanco 2002). Likewise it is also important to acknowledge that the outcome of the privatization process may also present remarkable differences within the same province (Balboa 1999, 113). We will come back to this point later, with reference to the bias that the use of provincial averages may generate.

[9] A first approximation using a multiple linear regression model leads to results similar to those obtained here.

esparto grass. These incentives were influenced by the degree of market penetration in the different rural communities and the potential productivity of the collective lands themselves. According to the GEHR (1994), in the southern half of the country, where privatization was widespread, a high proportion of the commons was potentially arable or, at least, susceptible to high-yielding silvopastoral use[10]. These areas were also deploying an increasing connection to national and international agrarian markets, which encouraged local landowners to expand their production capacity by resorting, among other things, to the purchase of common lands[11]. However, the empirical evidence offers no clear relationship between the economic factors behind privatization and the diversity observed in the persistence of common lands.

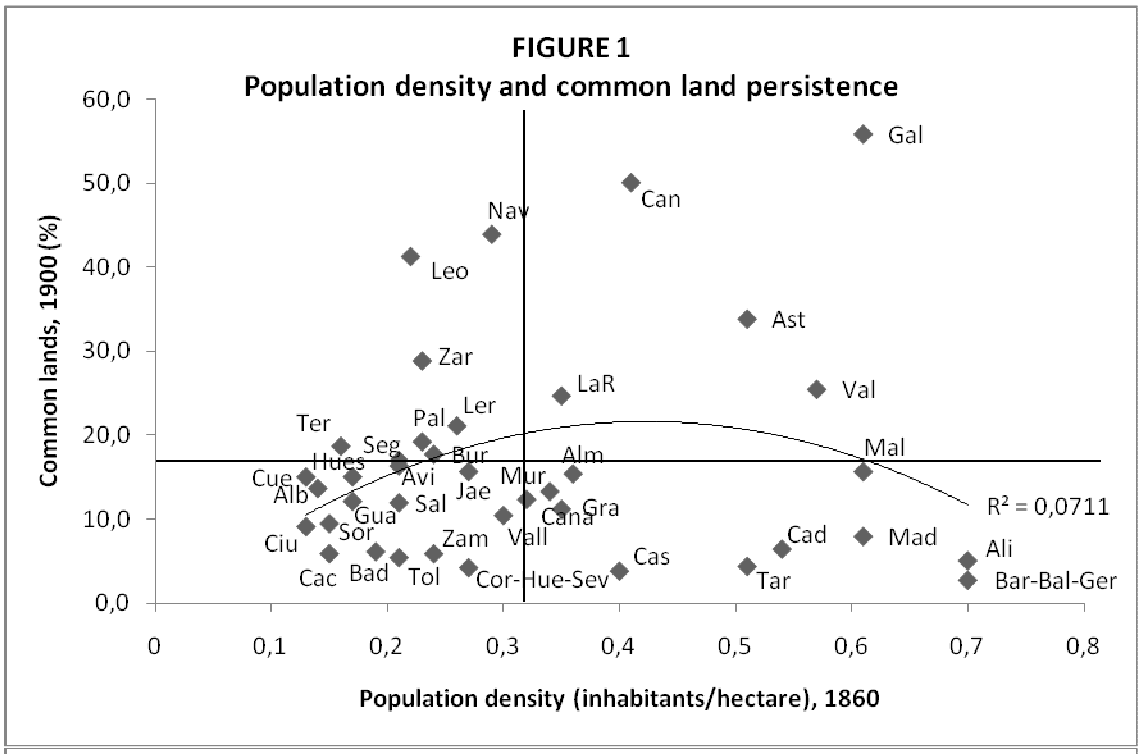
First, focusing on the available data on the demographic pressure in each province, and the outcome of the privatization process, it is clear that this variable does not help to explain the geographic diversity of the process. Although population growth from 1787 to 1860 shows a slight relationship with the persistence of common lands in 1900, the results obtained by population density are ambiguous (figures 1 and 2). Moreover, both variables show a weak explanatory power. In any case, it is significant

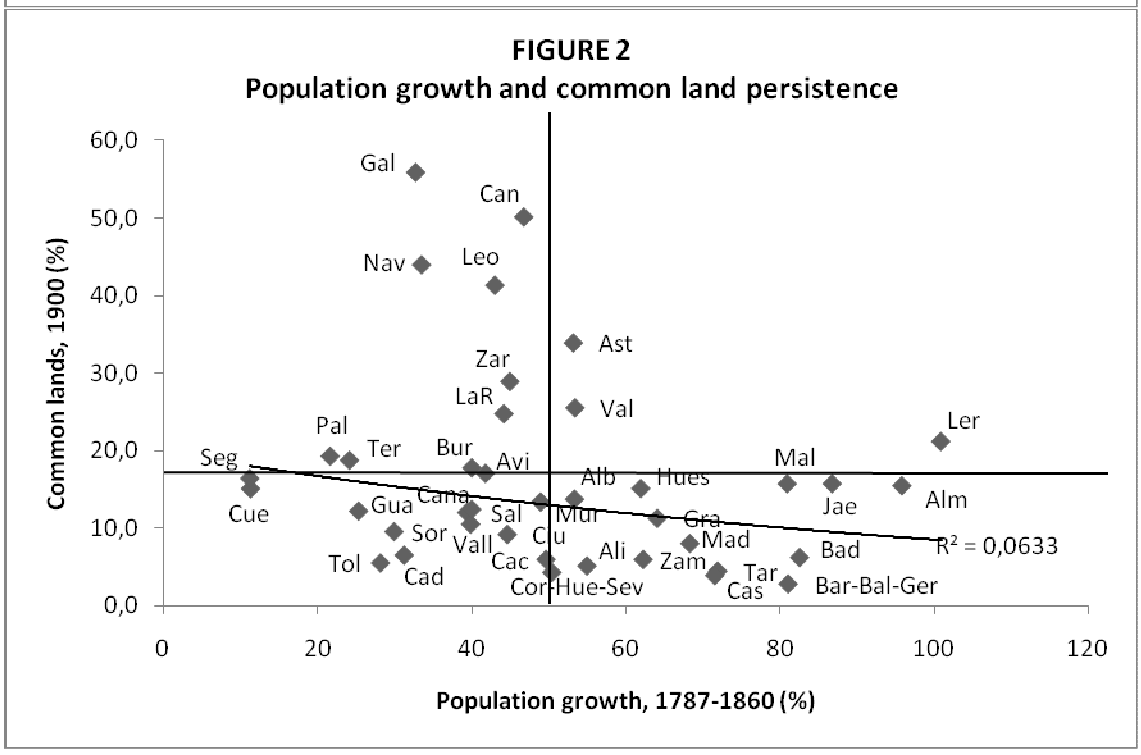
[10] The Ebro valley, which suffered an intense privatization of its flood plain, also responded positively to the growing incentives to expand arable land (GEHR 1994).

[11] It should be also stressed that the evolution of the agricultural and forestry markets throughout the 19th century contributes to explain the tempo of the privatization dynamic. Following Iriarte (2002), market incentives to plough became generally stronger from the second half of the century, and decreased during the end-of-the-century farming crisis. According to the GEHR (1994), the lower persistence of common lands in Western Andalusia and Extremadura in 1859 is partly attributed to an earlier and stronger connection to national and international agricultural markets. In the Ebro valley, on the contrary, the market incentives to expand the arable land did not appear until the last third of the century, which would help to explain the late arrival of the process in the province of Zaragoza. De la Torre and Lana (2002), in turn, state that the greatest privatization period developed in Navarra, the 1840s and 1850s, coincides with increasing prices, the first wine-growing boom, the wheat expansion, and the reorientation of the wool market to Catalonia and Valencia. The end-of-the-century farming crisis, by contrast, put an end to the expansive cycle, halting the increase in land rents and reducing the selling of common lands.

that, in those areas where population growth was above the country average, the persistence of common land was low (lower-right square of figure 2), thus attributing some role to the demand side in promoting privatization[12]. However, these imprecise results imply that social and environmental constraints played a key role in the process, given that the market was not equally established in each area, nor did each territory offer the same attraction to the advocates of privatization. The way in which the social and environmental context directly influenced the process will be analysed later. We will now focus on examining whether the diverse penetration of market incentives, and the potential productivity of the commons themselves, contribute to an explanation of the dissimilar intensity in the appropriation of the commons.

[12] It is also worth noting that, in certain thinly populated provinces in the interior of the country, the predominance of livestock farmer's interests encouraged the selling of collective lands (Gallego 2001ª).





Source: GEHR (1994), Gallego (2007) and Linares (2004)[13].

[13] The thicker lines that draw the four different squares in the figure reflect the country average of the variables in play, an arrangement that will be maintained in all figures of this paper.

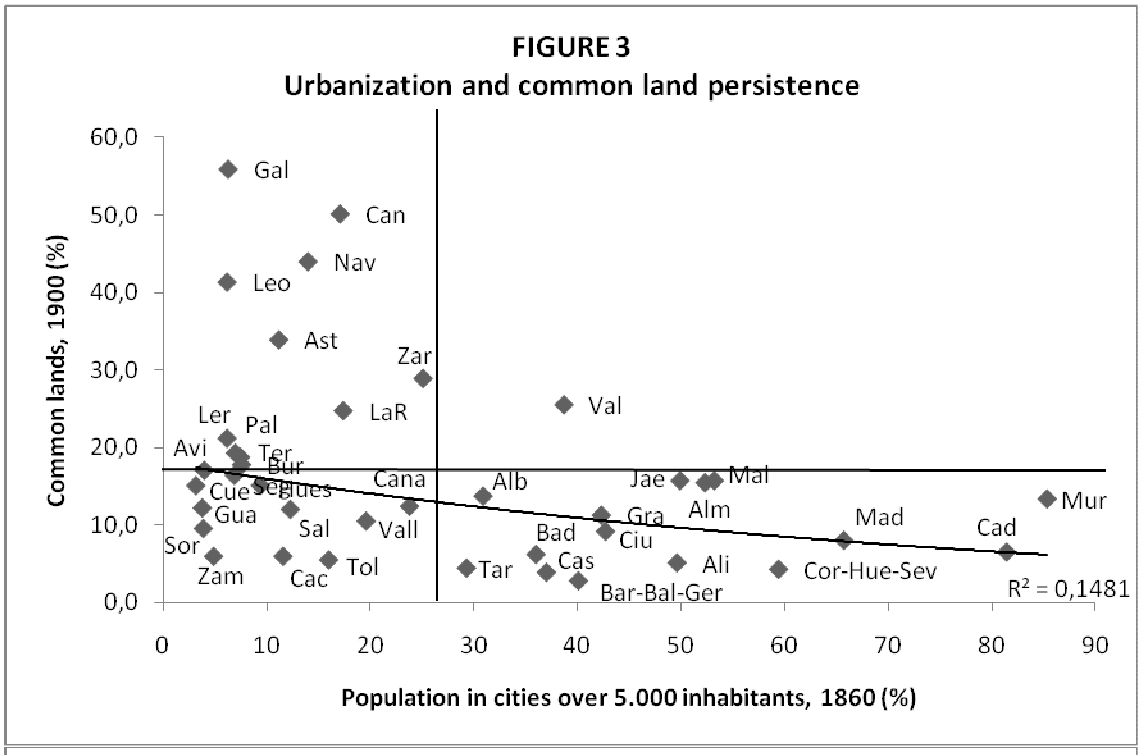
The consolidation of a market-oriented economy took place at different tempos, especially in the rural areas. One commonly-used indicator of the market potential of a certain area, and thus of the level of market penetration, is the existing urban population. However, it is also possible to ascertain the presence of the market in the rural areas of 19th century Spain through the index built by Domínguez (1994)[14]. Comparing both variables with the level of common land persistence, the expected relationship, while extremely weak, appears, although the explanatory capacity of urban population data is somewhat greater (figures 3 and 4). Nevertheless, the figures show that, except in the particular case of Valencia, in those provinces where market penetration was higher, privatization was more intense[15]. It is significant that none of the more market-oriented provinces had a higher level of common land persistence than the Spanish average[16]. Thus, rather than stressing the relevance of demographic pressure, this analysis assigns a certain, but very limited, role to the level of market

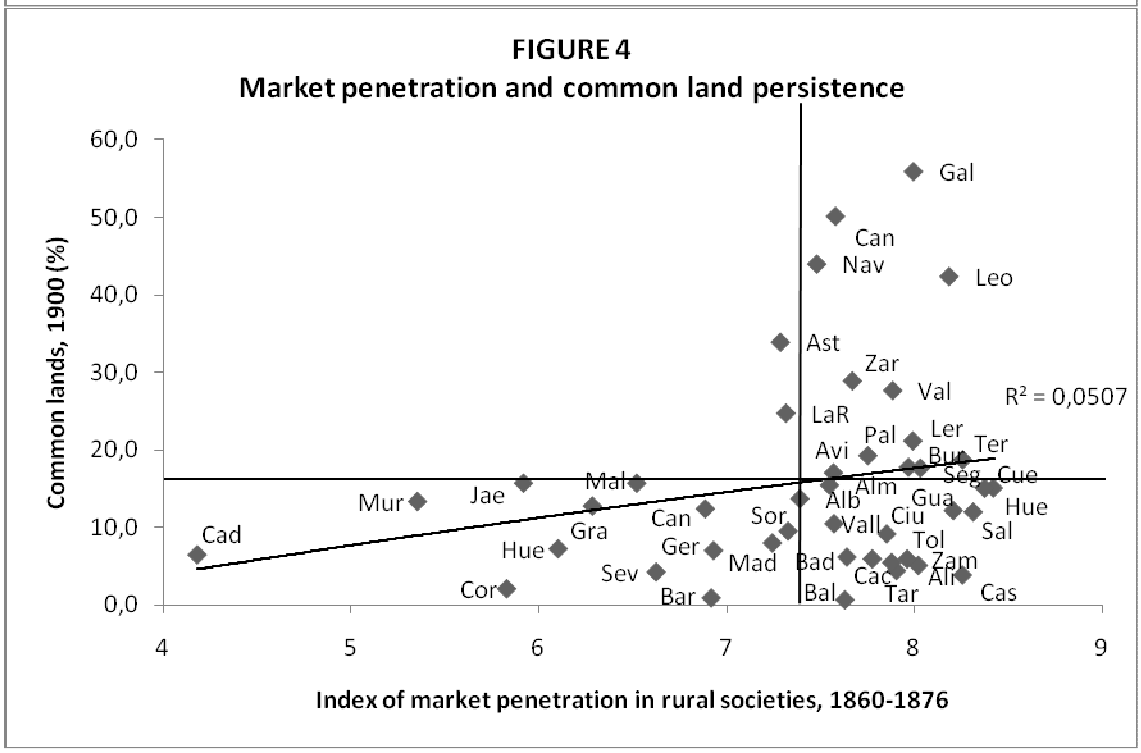
[14] The indicator developed by Domínguez reflects the level of market penetration over peasant families in the different Spanish provinces, assessing the extent to which the markets of land, labour and credit pervaded the rural communities of the second half of the 19th century. Lower values of this index reflect a greater market penetration.

[15] It is worth noticing nonetheless that the common lands that persisted in Valencia were mostly found in scarcely populated areas of the interior of the province, far from the more urbanized areas where farming was more intensive.

[16] In the southern half of the Peninsula and the Mediterranean periphery, for example, there coexisted high urbanization levels and a low persistence of common lands. According to Gallego (2001ª, 18), these markets promoted commercialized agricultural production and the resulting productive specialization. It is worth noting that these areas already had connections with each other, with neighbouring areas of the interior of the country, and with foreign markets. The absence of important urban centres, in Galicia, Cantabria, Asturias, León and Navarra, diminished market pressure on the collective lands. On the other hand, the intense privatization process that took place in those interior areas of the Peninsula with a weak urban development is explained by the existence of strong interests related to powerful livestock farmers and, on the other hand, by the accumulation and specialization process that emerged to supply the city of Madrid.

penetration to explain different degrees of privatization of the commons at the provincial level.



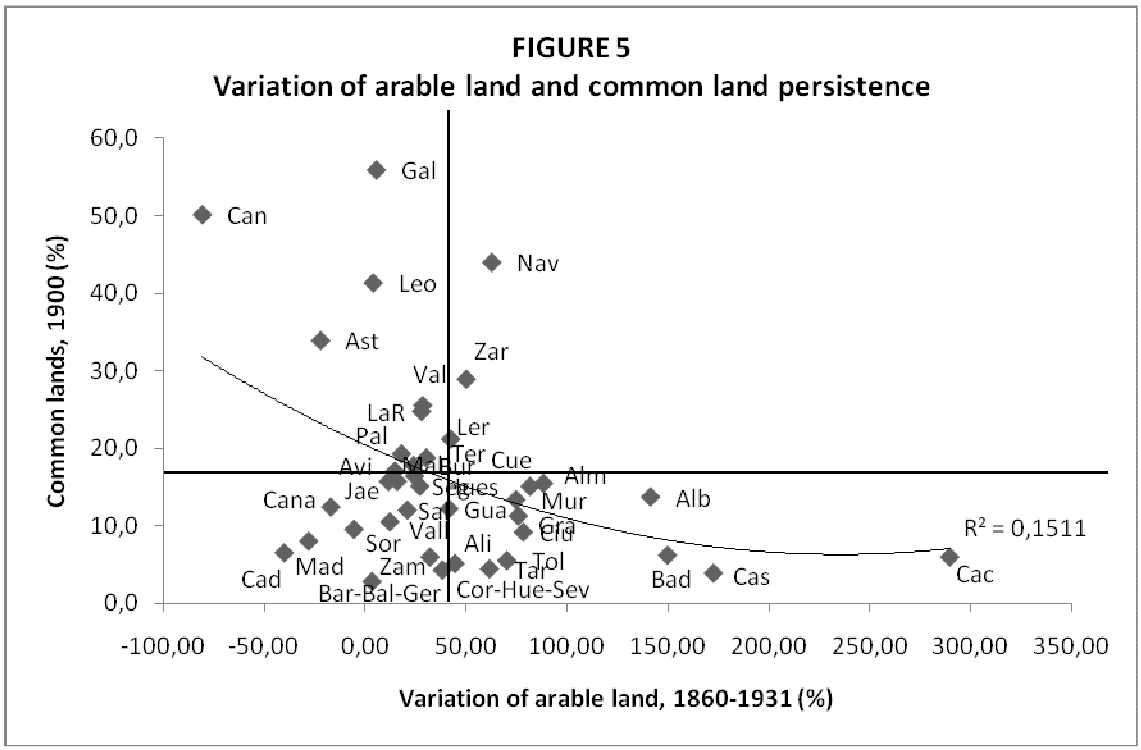


Source: GEHR (1994), Gallego (2007), Domínguez (1994) and Linares (2004).

The privatization process has not only been related to the urban and market development that promoted the emergence of a bourgeois class with the financial capacity to take part in the massive acquisition of lands that characterized 19th century Spain, but also to the existence of appropriate incentives to invest in land (Gallego 2001ª, 18). In this sense, although the GEHR (1994) underestimates the significance of the growth of arable land in explaining the process, other authors stress that the first use for the privatized land was to put it under the plough (González de Molina and Ortega 2000)[17]. The expansion of arable land was indeed unequal, which affected the diverse pressure that this variable exerted over the communal lands. Iriarte (1992), in an analysis of the Navarran case, states that sales were higher in those municipalities where, given their favourable characteristics for farming, ploughing the commons was easier. The data that the same author offers in another work, concerning the seven areas in which he disaggregates that province, shows a clear relationship between both variables (1998)[18]. Although the provincial data at the national level is not so consistent, the correlation exists, and its explanatory power should not be underestimated, given the multiple factors at play (figure 5). In this sense, the need to extend the arable land was strongly influenced, as we will analyze later, by the environmental restraints that each area enjoyed, forcing farmers to resort to an extensive exploitation of the land in order to increase production in those areas where edafoclimatic conditions limited agricultural yields, a strategy that in addition produced more profits in flat areas than in hilly areas.

[17] The arable land increased by more than five million hectares, 10.1 per cent of the Spanish total surface, from 1860 to 1926 (Sanz 1986).

[18] Similarly, in the southern half of the country, the flat lands of the Ebro valley and the Castilian plateau, and the Mediterranean strip running from Castellón to Murcia, the privatization process went hand-in-hand with the increase of land surface assigned to agricultural use (GEHR 1994).



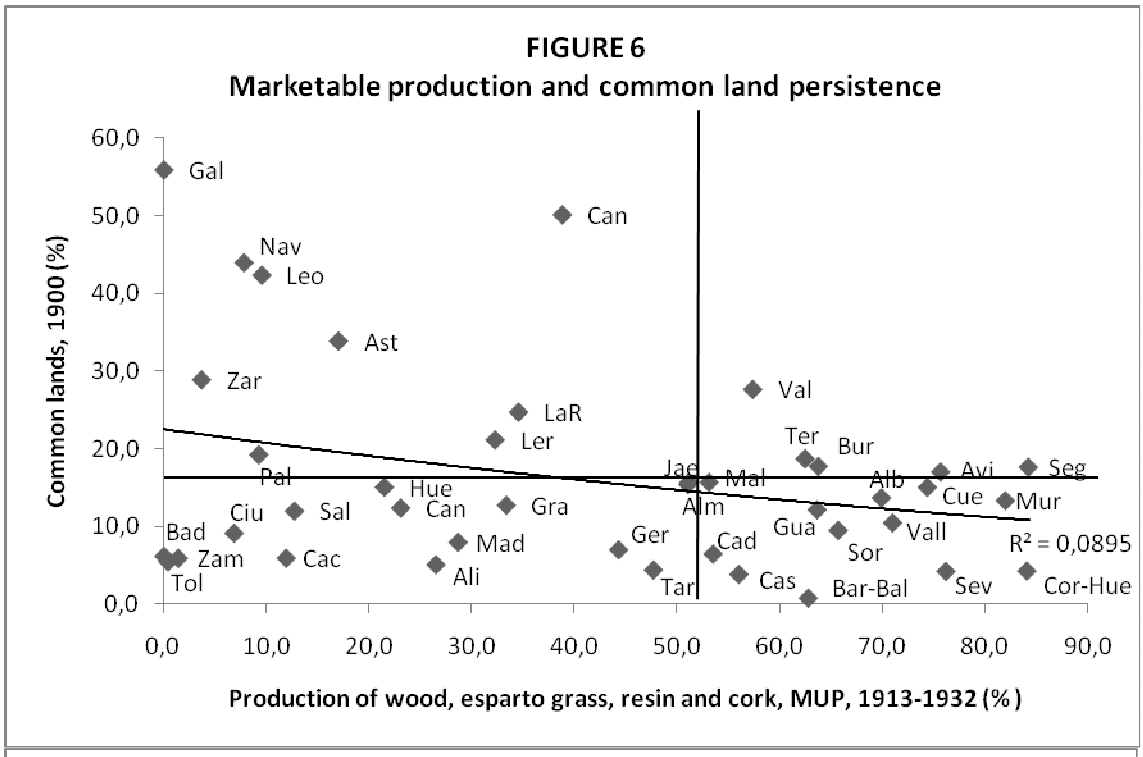
Source: GEHR (1994) and Gallego (2007).

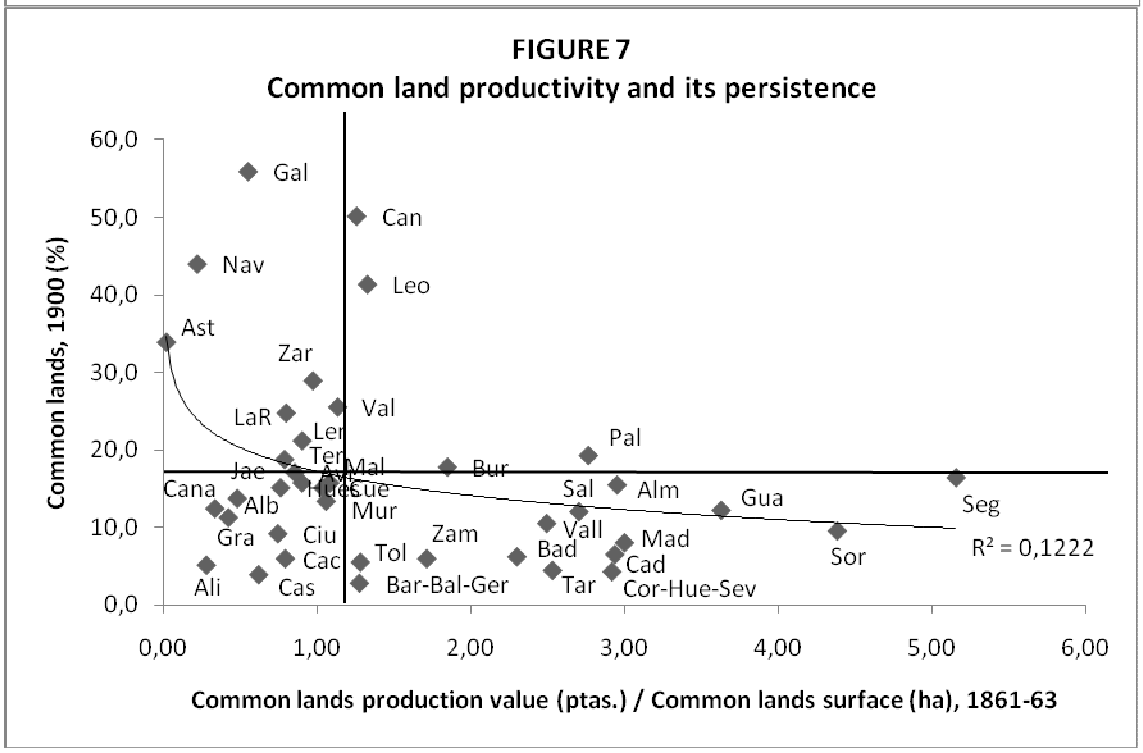
Similarly, these collective resources also allowed for a profitable expansion of livestock farming and forestry. Given that the incipient process of economic growth had increased the demand for certain products, those territories better endowed to meet the new commercial requirements would have a greater chance of ending up privatized[19]. However, not every forestry market experienced the same expansive evolution. The most valuable products were timber, resin, cork and esparto grass, while wood for fuel and pasture-land were the least appreciated (GEHR 2000). The evolution of production on public lands during the first third of the 20th century offers some clues as to which lands had the greater possibility of ending up in private hands. In fact, a significant portion of the lands that remained public were under-appreciated for their forestry value, as they produced low yields of timber and provided only small quantities of

[19] Jiménez Blanco affirms that, due to its rigidity, the supply of forestry raw materials was unable to adapt to increasing demand, fostered by the population growth and the industrialisation process, a situation that led to inexorable price increases in the long run (2002, 170).

resin, even less of esparto grass, and no cork at all; and, instead, providing mainly pastures and firewood (GEHR 1999, 137)[20]. Using the data provided by the GEHR (1991) on the productive specialization of the public lands in the different provinces, we can obtain a proxy for their market attractive in each area, calculating the percentage that the forestry products subject to an increasing demand meant in relation to total production (figure 6). The yield per hectare that collective lands obtained around the middle of the 19th century serves as a similar indicator (figure 7). Both indices show a weak correlation with the quantity of common lands at the end of the period, with the second variable having greater explanatory power. However, it is again useful to stress how those areas whose common lands enjoyed higher yields had a lower persistence of these kinds of resource.

[20] The privatization of the uses of the lands that remained public, on the other hand, also ended up being quite unequal, depending on the area, and it should be connected to the predominance and marketing of certain forestry products.





Source: GEHR (1991, 1994) and Gallego (2007).

We should not though overlook the importance that pastures had for the interests of livestock farmers. Comparing figures 6 and 7, it can be seen that certain areas with low percentages of high-value products, i.e. those common lands

predominantly devoted to pastures, offered higher yields than the country average. In this sense, provinces in Extremadura, Castilla La Mancha, Salamanca, Zamora, and Madrid, experienced intense privatization processes, led by powerful livestock farmers (Gallego 2001ª). In these areas, the slow increase of arable land in relation to the level of common land persistence (analysed earlier) could be explained by the different uses to which privatized lands were put.

In short, although the productive potential of common lands, and the level of market penetration enjoyed by each area, moderately helps to explain the dissimilar intensity of the privatization phenomenon, the relationship between market incentives and common land persistence is by no means consistent, which requires an exploration of other forces that could have contributed to the process.

3. THE SOCIAL CONTEXT OF THE LOCAL COMMUNITIES

Considering the diversity of the privatization outcome, it is clear that not every region responded equally to the market incentives or to the guidelines drew by the central government. Rural societies had a significant response capability to direct the process, which led to either reinforcement or dilution of the liberal aims, depending on the context in which they were implemented (GEHR 1994; Gómez Urdáñez 2002)[21]. If the social and institutional features of the local communities would have biased the process, what were the conditions that led some villages to get rid of their commons, while other managed to defend them, and to what extent did these conditions matter?

[21] Generally speaking, historiography analyzes this issue as the clash between two institutions. The liberal state, on the one hand, would try to speed up the transition to capitalism through the privatization of the commons. The local communities, on the other hand, would try to adapt to the new situation, either by defending their collective assets or taking an active part in their dismantling. These rural institutions would be embodied by different social groups and by the municipalities that represented them politically.

The rural communities themselves did not constitute a homogenous body, but had their own contradictions, generally derived from the conflict between a landowner elite, frequently allied with the liberal state, and the peasant population, the latter with very limited political power, but with some degree of room to manoeuvre[22]. On the other hand, although the distribution of the production offered by common lands benefited the upper classes to a greater extent, the entire community profited from them. In fact, the commons fulfilled an important social function, since the less-favoured groups obtained complementary rents that secured their reproduction. In this sense, the protests against the selling of collective property had a fundamental prominence throughout the whole period (González de Molina and Ortega 2000). Since this opposition was widespread in the country, and those individuals with lesser resources had less possibility of benefiting from the privatization process, the problem lies in explaining why landowner elites in certain areas shared this interest and did not take advantage of the potential sales[23]. In general, the greater or lesser interest in taking part in the privatization of the commons was influenced by the local environment that, in turn, determined the predominant ways of organising agrarian production, and also by the social relationships established within the rural communities (Iriarte 1998). The influence of the environmental context in the privatization dynamic will be analysed in the next chapter, so we will now focus on how the social framework could restrain the purchasing interests of these groups.

[22] Analysing the Spanish rural societies, Gallego (2007) opposes the existence of two social classes that asymmetrically interacted within the heart of the local communities: the agrarian elites and the peasant families.

[23] It is worth noting that the peasant population could have also been in favour of privatization if this meant the distribution of the land (Cabral 1995).

The existence of relatively cohesive societies is the main candidate to play the role of promoting the persistence of the collective lands, since it would facilitate the participation of all members of the rural society in the management and use of collective resources, including their defence against privatization[24]. This mutual identification between members of local communities would be stronger in those areas with dispersed settlements (Moreno 1998). A lesser social inequality would also reinforce that social link, thus contributing to a greater identification with the fate of the commons (Iriarte 1998). The social functionality behind this kind of resources was superior in dispersed and less unbalanced societies, which consequently increased the incentives to preserve an asset valued by the whole community. The consensus on preserving the commons from privatization arose from the utility that they provided to every member of the community. According to Balboa (1999), those rural societies where small landholdings and a lesser inequality prevailed were more successful in limiting privatization than those characterized by a strong presence of large landowners and more widespread social inequalities. These circumstances gave rise to the formation of a broad consensus against privatization, since it simultaneously allowed for maintaining the accumulation systems of the elites, and for securing the reproduction of the peasant exploitations. On the contrary, the existence of denser and more unbalanced populations made control over the commons through a political negotiation (in a broad sense) difficult for the landowner elites, who promoted privatization in order to secure their privileged access to these resources (Jiménez

[24] According to Lana, "the notion of community […] entails a social network linking its members through principles of territorial proximity, sense of belonging, mutual recognition, moral obligation, ruled cooperation, the ritualized renovation of symbols and strict exclusion limits" (2008, 164). The social cohesion, following Moreno (1998), would be reflected in a set of formal and informal rules derived from a daily negotiation within the community.

Blanco 2002; Lana 2008)[25]. In this sense, it is also important to take into account the function that the common lands themselves fulfilled in supporting agrarian activity in an organic economy (Wrigley 1990)[26]. A dispersed population settlement, and relatively balanced access to the land, allowed rural communities to make better use of the territory and to take advantage of the potential that the agricultural and silvopastoral integration meant to traditional economies still strongly conditioned by their organic base.

In order to test these arguments, data on the settlement patterns of population in each province is used and an inequality index of access to the land is built based on data about landowners, tenants, and peasants without land[27]. The comparison of both variables with the fate suffered by common lands bears the expected correlation (figures 8 and 9). The explanatory power of population dispersion is far greater, and is also considerably higher than the correlations obtained by the market factors analysed in the previous section. However, it must be stressed that the low correlation coefficient obtained by the inequality index is, on the one hand, due to the existence of areas that combined a relatively open access to land and a strong privatization process[28]. The economic base of these rural societies was undermined for several reasons. The scarcity of opportunities, and subsequent migration, significantly decreased their political power, not only at the national level, but also in relation to the urban areas within the

[25] In fact, where market mechanisms were widespread and where accumulation was more linked to "modern" ways of surplus extraction, as the surplus obtained from the labour force, the privatization of the collective lands was really convenient to the well-off classes since it turned rural population into proletarians (Jiménez Blanco 2002, 152).

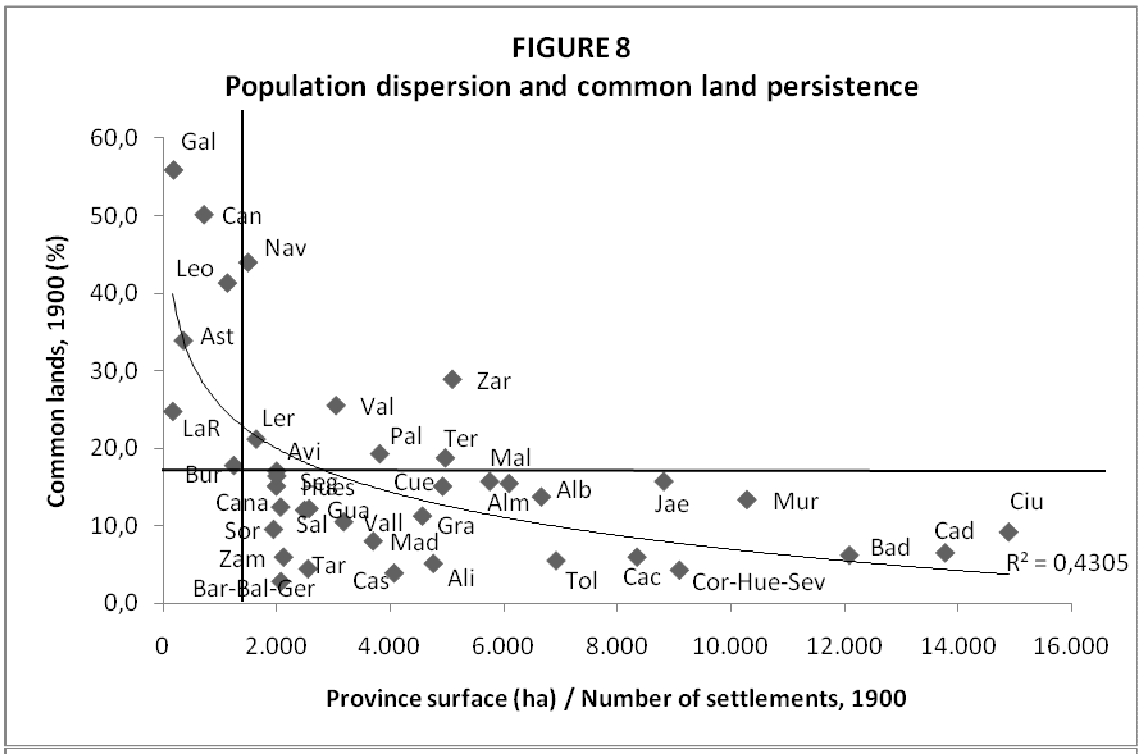
[26] See Balboa (1999) and González de Molina (2001) for a detailed analysis of the importance of the common lands in this integrated agrarian system in 19th century Spain.

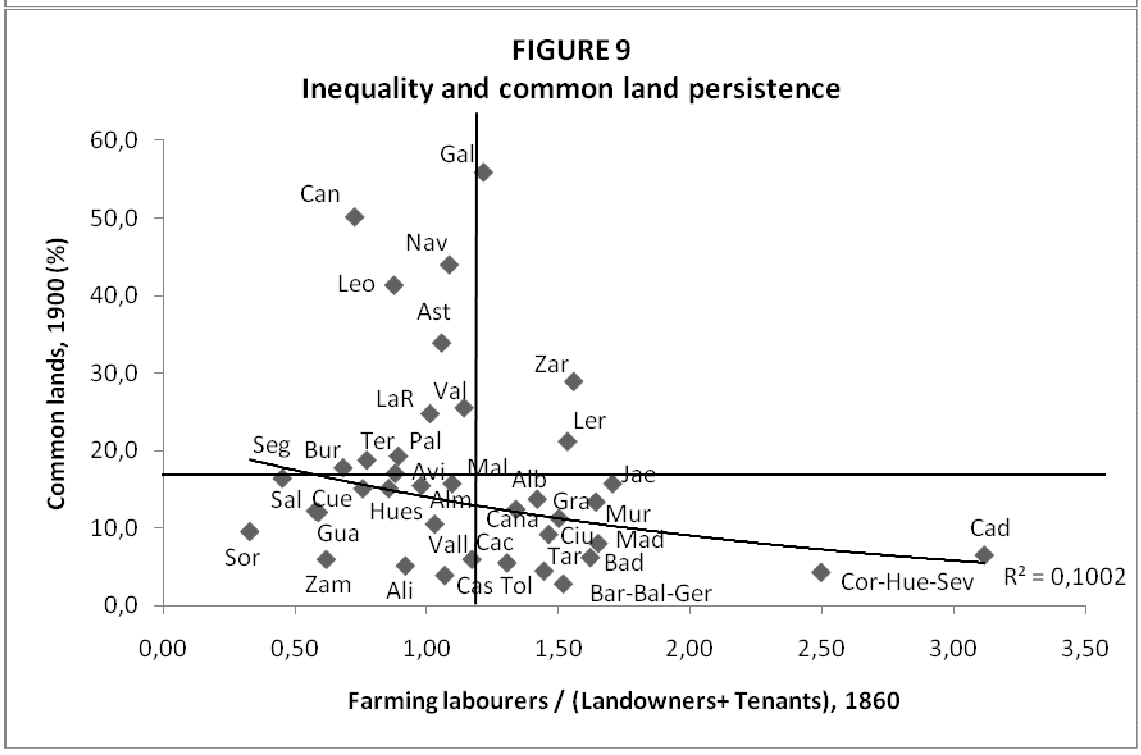
[27] The inequality index is calculated by dividing the number of peasants without land between the addition of landowners and tenants.

[28] Cuenca, Salamanca, Segovia, Zamora, Guadalajara, Burgos, Soria, Teruel and Huesca.

province, leaving them helpless against the pressures of privatization groups coming from outside these communities (GEHR, 1994). Furthermore, as will be examined later on, given the environmental restraints in these rural areas, their limited agricultural productivity forced them to resort to the extension of arable acreage - at the expense of the collective land - if production was to be increased. By contrast, the province of Zaragoza presents a remarkable persistence of common lands, despite having superior levels of inequality and of population concentration. Its situation is deceptive since, although this region only began the privatization of the commons after a significant delay, the process was quite intense from the last third of the 19th century on[29]. Leaving aside this singular case, it is significant that none of the provinces with higher levels of inequality enjoyed common land persistence above the country average.

[29] Common land in Zaragoza declined from being 60.9% of the provincial surface in 1859 to 28.9% in 1900.





Source: GEHR (1994), Gallego (2007), Linares (2004) and Domínguez (1994).

The combination of these two variables reflects the kind of rural organisation that was being developed in each area. A wider access, direct or indirect, to the land through small family landholdings carrying out intensive cultivation was predominant

in the north of Spain and along the Mediterranean coast. A pattern of dispersed settlement prevailed especially in the North of Spain, where the existence of dense webs, made up of a multitude of small villages, consolidated the continuity of peasant family landholdings whose rights over the land were respected. On the contrary, the leading feature in the southern half of the Iberian Peninsula was the large extensive exploitation that resorted to wage-earning labour force and generated a more concentrated and polarized society (Gallego 2001[a])[30]. Multiple intermediate situations, reflecting the diverse conditions of each area, fitted, of course, between these two models. A dispersed population settlement, and relatively balanced access to the land, enhanced the functionality of the commons which, together with the social cohesion that these social features promoted, generated sufficient consensus to defend an asset that, to a great extent, was highly valued by the different groups within the community.

External shocks, however, could destabilise the kind of society and the way of exploitation that was traditionally being practiced. Lana (2008) explains, for the Navarran case, how demographic growth, rising prices, and gradual market penetration increased inequality to the point of undermining the broad consensus on the preservation of common land[31]. This author maintains that, in spite of the tensions that the new context implied, the sense of *community* could survive under certain conditions, partly due to the fact that the common land itself did not disappear and continued to have significance in the territory as a whole. Another reason behind the preservation of these communal links is that certain collective rights could persist in

[30] As will be seen in the next section, the kind of exploitation that was being developed also responds to a greater extent to the environmental conditions of each territory.

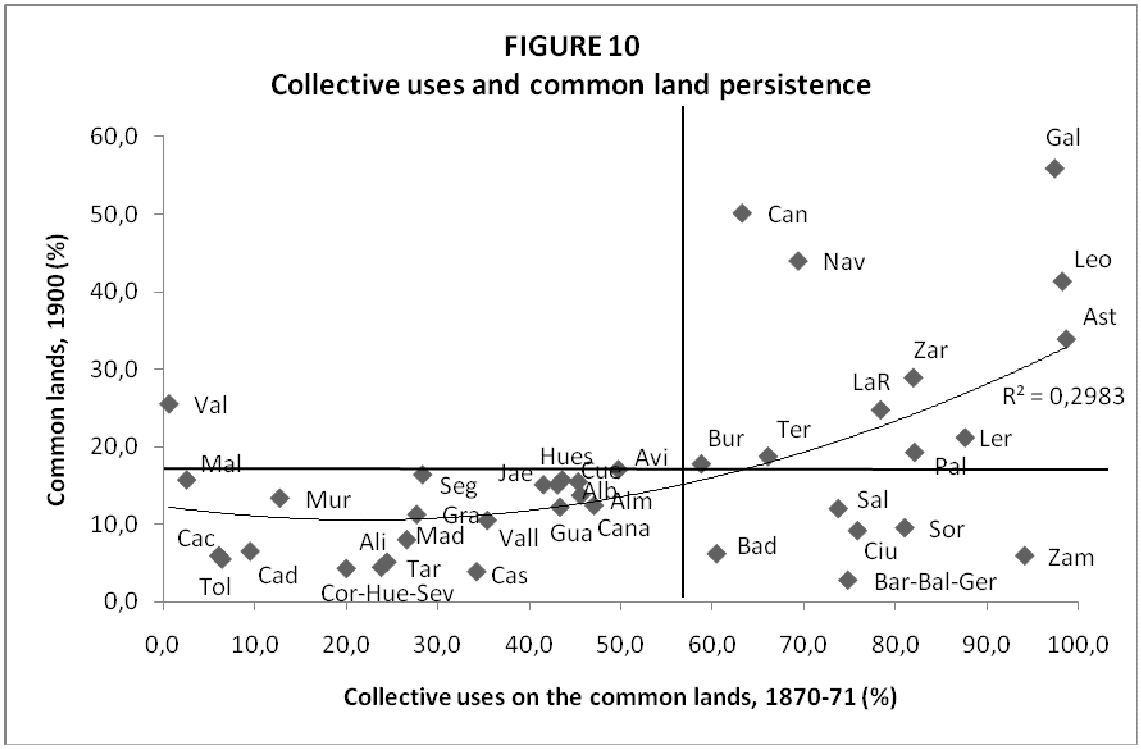
[31] While less favoured groups, who suffered intensely in the new context, increased the pressure to distribute collective lands, landowner elites, not necessarily still being in favour of privatization, could prefer that solution in order to prevent the loss of their privileged access to those resources.

some of the lands that were privatized[32]. These limitations to the "perfect property" favoured the "community" as a whole, preventing the upsetting of the local balance and thus reinforcing social cohesion. Although no data exists on the significance of this phenomenon at the national level, there are figures that show a gradual privatization of the use of those lands that remained public (GEHR 1999). The consequent appropriation by local oligarchies - and some private companies and middlemen - of a large part of the common land production would negatively affect the existing consensus within communities (Iriarte 1998). Preserving communal use limited inequality and thus positively influenced the level of social cohesion and the coincidence of interest in the protection of collective lands. Moreover, the common lands not only constituted a greatly valued asset, but also a way to promote local cooperation (Gallego 2007). The collective management of this resource, the way its use was monitored, and the ways agreements were enforced encouraged the building of cooperation networks within the community and, therefore, favoured social cohesion. To contrast these arguments, the percentage of collective use related to the total use in the different provinces (GEHR 1999) serves as an indicator of the strength of the existing communal links (figure 10). The results support those obtained by the dispersed population settlement and the index of inequality, not only because its explanatory power is relatively high, and in line with their results, but also because, in those areas where the predominance of collective use on common lands was low, the privatization of property was, in general, greater[33]. The way of access to the commons

[32] Iriarte and Lana (2007) specifically refer to the concurrence and hierarchization of appropriation rights over common resources.

[33] Interestingly, communal persistence in Cádiz, one of the few provinces from which data is available, was relatively high at the end of the Ancient Regime (42.13% of the total provincial land) but collective uses had already been dismantled which may help to explain the disappearance of the commons through

established who benefited from this resource and, therefore, in those regions where the community influenced the use and management of collective lands, the distribution of their products was more equitable, thus promoting a broader concern about their preservation (Jiménez Blanco 2002)[34].



Source: GEHR (1991, 1994) and Gallego (2007).

---

distributions during the first half of the 19th century and through the disentailment Law of 1855 (Cabral 1995). The level of access that local peasants enjoyed could have also been greatly different within each province, even in earlier periods. Lana (2008) shows how, in North-western Navarra in 1726, one of the local areas where privatization of property was less intense, 91.3 per cent of the neighbours enjoyed access to the collective resource, compared to an average percentage of 56.6 in the remainder of the province.

[34] This relationship is clearly observed in the Navarran case. According to De la Torre and Lana (2000, 85), in those areas where local power was not influenced by the larger taxpayers, municipalities could play an important role in preserving collective rights. In contrast, in the southern half of Spain, social, economic and political imbalances were much greater and the use of collective resources concealed a privileged use by rural oligarchies. Although these elites were in favour of preserving the status quo, peasants and farm labourers definitely preferred the distribution of the land (Jiménez Blanco 2002, 151). A situation like this led to growing social conflicts and therefore large landowners opted for privatization as the best choice to maintain their privileges.

The existence of rural societies not excessively unbalanced and with a deep communal sense reinforced their social cohesion and facilitated the possibility of reaching a general consent about the defence of their common interests[35]. The degree to which the landowner elite's interests coincided with those of most peasant families was thus determined by the strength of the communal bonds, since they, to a certain extent, limited the ability of privileged groups to direct the process in their own interest, thus including the wider interests of the local community in their decision matrix[36]. Broadly speaking, the geographical results of the process could be grouped in two kinds of regions that shared a specific institutional design. On the one hand, the massive privatizations carried out in the south of the country (Andalucía, Extremadura and Castilla-La Mancha) were related to the concentrated pattern of population settlements, the unequal distribution of the land, and the resulting low social cohesion that characterised these areas. In this sense, the lesser persistence of collective uses in the remaining common lands also acted against the maintenance of community links that could have helped to preserve the resource. On the other hand, the high degree of common land persistence in some regions of the north of Spain was connected to the

[35] The strategies that local communities developed in order to preserve the commons varied greatly. Up to 1855, municipalities maintained legal authority over their patrimony. After the Madoz Law, villages had the possibility of taking legal action to exclude those lands that were being enjoyed collectively from the general disentailment. At times, municipalities either concealed estates, provided wrong information or refused to respond to the requests of the central government (Jiménez Blanco 2002). On the other hand, legal channels were also employed to denounce illegal ploughings or appropriations or even to invalidate the sales (De la Torre y Lana 2000). Likewise, in several cases, peasant groups collectively bid in the auctions or arranged the repurchasing of the commons, an adaptive strategy seeking to maintain the status quo (Balboa 1999). The neighbours themselves also acted to hinder the exercise of property rights that had been purchased by outsiders, which also served to discourage future purchases.

[36] Lana (2006) affirms that the social and political control could not be exercised by the landowner elite without a minimal sanction by the community, especially in those areas where the communal bonds were more intense.

predominance of dispersed population settlements, where peasant families enjoyed a relatively high level of access to the land, including the commons. The general consent achieved by the different groups involved, favoured by a greater social cohesion, allowed local elites to preserve a privileged access to the commons and to the rents supported by them, while, at the same time, allowing less-favoured groups to obtain essential resources for their reproduction. The rest of the country occupied, in different degrees, an intermediate position between these two cases. The institutional analysis, based on the social features that characterised the different rural societies, is thus a key factor in explaining this process. This interpretation attributes a fundamental importance to path-dependency, since concrete institutional designs were the result of the social interaction in the long run, and the consensus around the commons depended on the function that they fulfilled in the society of which they were a part. This consensus, nevertheless, was also deeply influenced by the environmental context within which these rural communities existed.

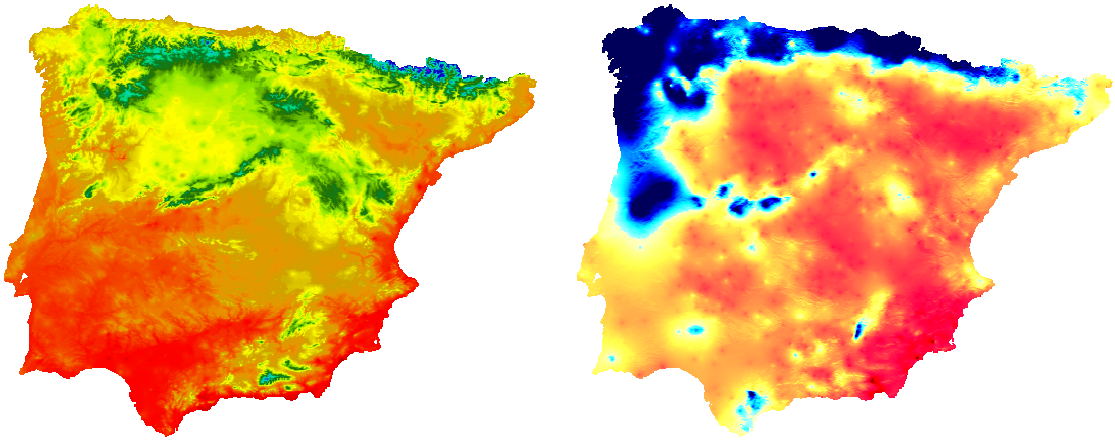
4. GEOGRAPHICAL AND ENVIRONMENTAL CONDITIONS

The Spanish regions differed from each other, not only in their social and institutional framework, but also in their geographical and environmental context. The kind of suitable use in each area indeed determined the productive potential of the commons and partly influenced, as has already been analysed, the behaviour of economic agents through market incentives. The environment also conditioned the kind of rural organisation that was being developed in each area. Therefore, it is interesting to consider how environmental conditions could directly affect the privatization process. In this sense, if maps 2 and 3 are compared with the one that reflects the percentage of common land remaining in 1900 (map 1), it can be seen that most of the

provinces that retained significant amounts of this resource have certain environmental features in common, such as the edafological regime and the orography.

MAPS 2 AND 3

Orography, annual average temperature and annual rainfall of the Iberian Peninsula



Source: Ninyerola, Pons and Roure (2005).

González de Molina (2001), reviewing the "backwardness" concept that prevailed in 19th century Spanish agrarian historiography, reminds us of the inconvenience of comparing diverse economic systems as if they were culturally and environmentally indifferent. It is especially in rural societies where the productive responses were less conditioned by market incentives, and social and environmental influence was more significant, since these areas were at the margins of the profound changes in organization and in productive potential that occurred in the other economic sectors (Gallego 2001[b], 148). Without leaving aside other elements, such as economic or institutional factors, we now include the environmental restraints to the potentialities of the economic system in our analysis. From this perspective, environmental features would influence the institutional design of each area and the function that the commons played in it, which would confer greater or lesser strength to the interests in favour of, or against, their persistence.

The importance of the commons in traditional organic economies has been already stressed. The transition to a modern economy would make collective lands gradually lose their function, due to the appearance of alternative energy sources, such as fossil fuels and chemical fertilisers, imported from outside the system. Given the lesser value that this kind of resource would have to the local economy, the incentives for its dismantling would be greater. However, the backwardness of Spanish agriculture in carrying out that transition would influence this process and collective lands continued to play a key role in rural communities throughout the 19th century. Furthermore, the most important environmental limit of the Iberian Peninsula (along with the structural scarcity of fertilise) was water, since water (or the lack of it) constituted the primary restraint on Spanish agricultural yields, especially in the dry areas, i.e. most of the country (González de Molina 2001). The availability of nutrients is determined by the humidity regime and thus the edafoclimatic characteristics of the territory put a limit on agrarian productivity. Given growing demand, if production needed to be increased, the only available choice was to expand arable land[37]. However, the lack of rainfall not only reduced agricultural yields but also biomass production in general. The lower production of natural pastures limited the territorial capacity to support livestock that could provide fertiliser and workforce, which in turn influenced the level of crop yields. The need to expand arable land was lower in humid Spain, since without this restraint production could be increased through a more intensive use of the territory. The value of the commons in humid regions would thus

[37] The limits of the irrigation technology available in this period did not allow its widespread use. Although various methods of increasing agricultural production were tried anyway, the results could not be so different, given the environmental conditions. See González de Molina (2001) for a description of the strategies that were carried out and their limits. In his opinion, the expansion of arable land devoted to cereal farming was perhaps the only alternative to meet the growing demand.

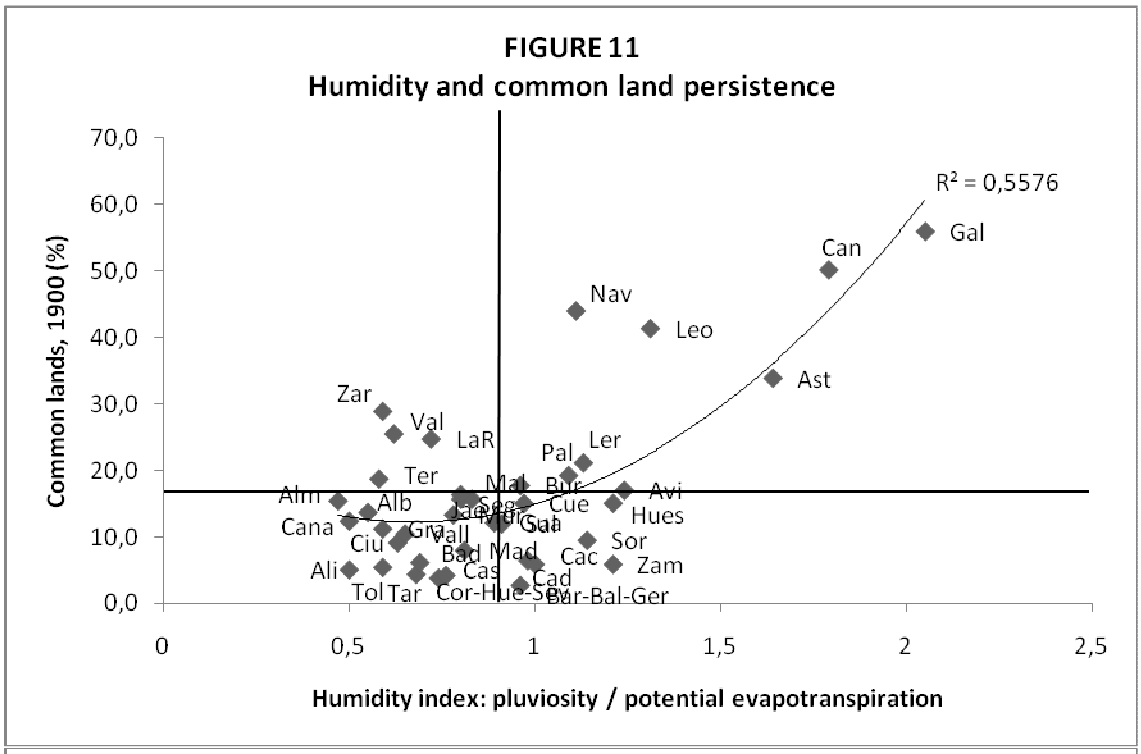
be superior, due to the larger volume of biomass that could be obtained from them, so generating a virtuous circle between agricultural productivity and the availability of common lands. The possibility of improving agricultural yields through this positive link reinforced the already superior agricultural productivity of humid Spain and limited even more the need to increase production through the expansion of arable land. The greater yields achieved by the commons in these regions would serve to enhance the interest in their preservation since, given their function as provider of pasture and fertiliser, reducing their availability would decrease agricultural yields[38]. Therefore, the persistence of collective lands in humid Spain would be caused by the greater capacity of its agriculture to increase production, without resorting to the expansion of arable land, and by the function that the commons themselves fulfilled to support these high agricultural yields. The diverse levels of success of the privatization process would have part of their roots in the differing needs of arable lands to increase production for the market, needs that would be determined by the environmental conditions of each area.

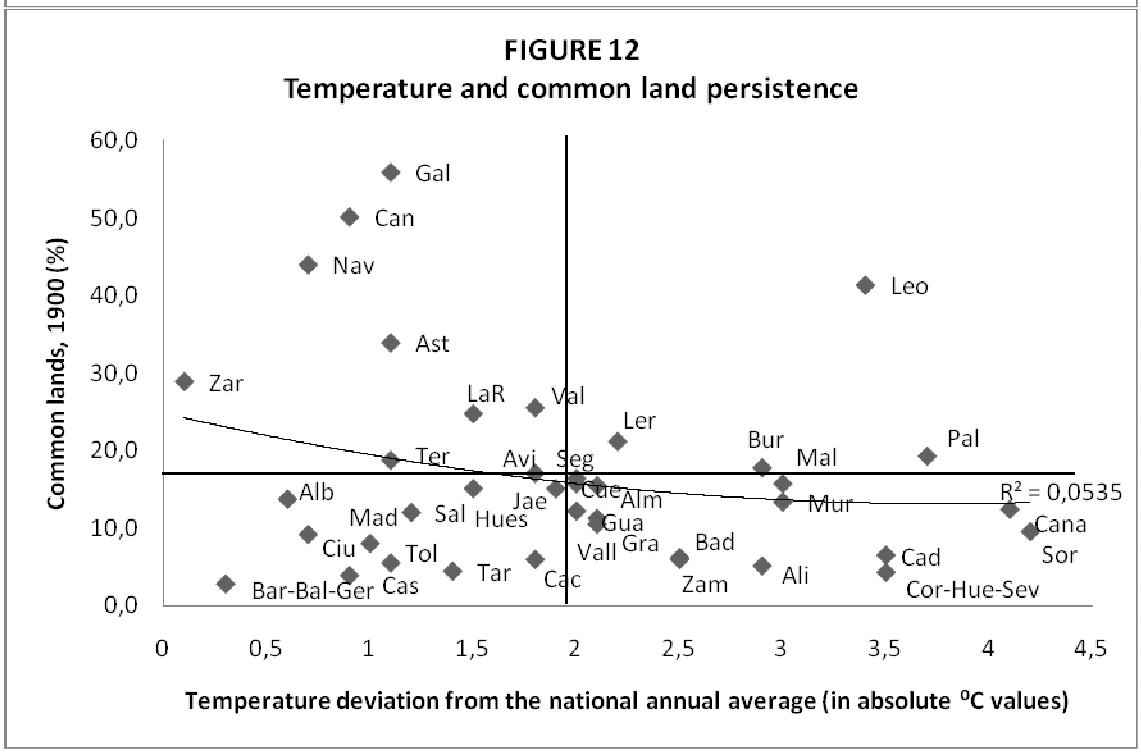
The available evidence for all of the Spanish provinces shows a clear relationship between the humidity index and the privatization process, especially in the North-western provinces of the Peninsula (figure 11). It must be stressed that the coefficient of determination achieved with this variable is the highest of all the indices analysed here. Nonetheless, humidity is not the only environmental factor that affects the productive potential of the agrarian sector. Weather severity also plays an important role (Gallego 2001ª). Although the general relationship is not significant, it is

[38] A relationship that the inhabitants themselves knew, given the multiple warnings that, during the 19th century, were given over the damage that an excessive reduction of the commons surface would cause to agrarian productivity, such as lower agricultural yields and the impossibility of properly maintaining livestock (Artiaga and Balboa 1992, 103).

interesting to observe how those provinces with more extreme temperatures suffered more intense privatizations (figure 12). Except in León, those provinces with colder weather suffered a lower level of common land persistence, and conversely in those areas with higher temperatures[39]. Therefore, mild temperatures but especially high levels of humidity meant favourable climatic conditions for the persistence of common lands, conditions that were mostly in place in North-western Spain.

[39] The persistence of common lands in the province of León is related to its high social cohesion and mountainous character. Conversely, it is also worth noticing how some features of the provinces that are gathered in the lower-left square of the figure 12 help to explain the low level of common land in spite of mild climate. In this sense, while Madrid and Barcelona were by far the most urbanized provinces, in Ciudad Real, Albacete, Toledo and Salamanca, the annual average temperature conceals the extreme temperature variation that these interior provinces suffer from winter to summer. Likewise, the presence of powerful livestock farmers in these areas led to intense privatization.

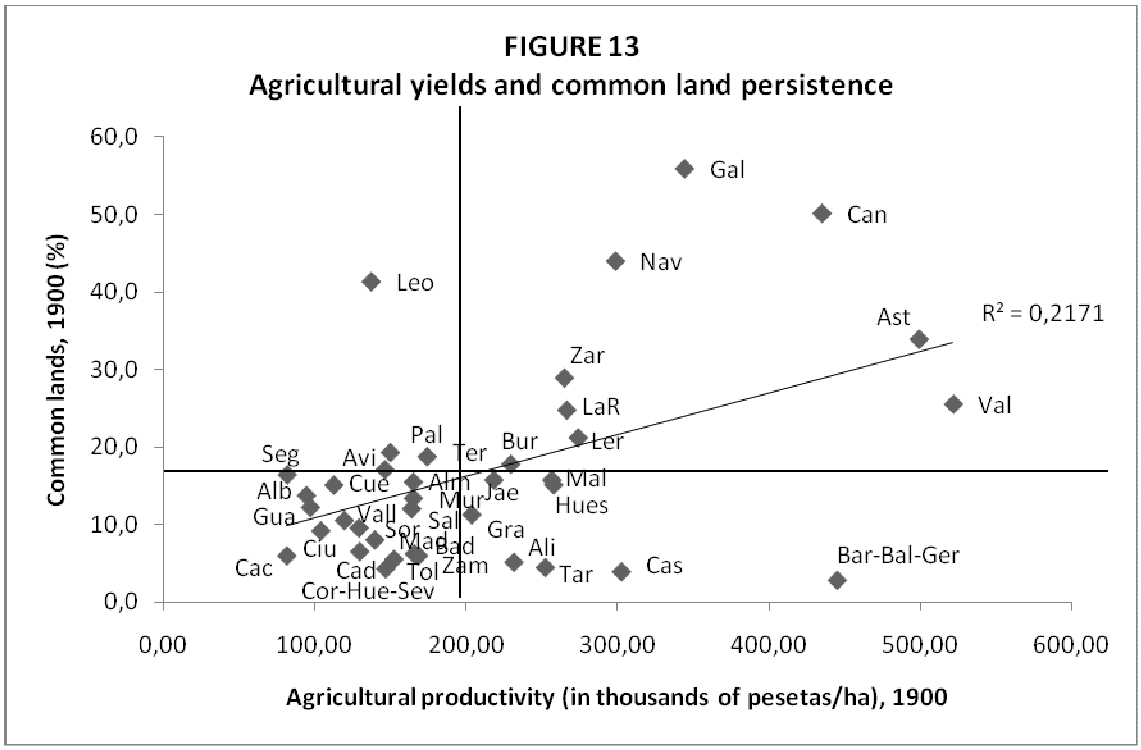




Source: GEHR (1994), Linares (2004) and Gallego (2007).

Another way of looking at this argument is derived by asking whether those provinces with a greater persistence of common lands enjoyed superior agricultural productivity (figure 13). As is shown, the correlation is positive and relatively

consistent, although it suffers from the inclusion of the Mediterranean provinces - whose behaviour, with yields higher than the average but with a high level of privatization, has other causes, explained below - and the opposite case of León, which shows lower levels of agricultural productivity due to its character as a mountainous economy with a harsh weather[40], but whose social features (wide access to land, dispersed population and high proportion of collective uses on the commons) greatly favoured the survival of common lands.



Source: GEHR (1993, 1994), Artiaga and Balboa (1992) and Gallego (2007), without Canarias.

The environmental context thus influenced the productive orientation of each region by imposing extensive cereal farming in the southern half of the Peninsula, the mountainous area of the Sistema Ibérico, and most of Castilla y León[41], while the

[40] The influence of orography in common land persistence in analyzed later in this same section.

[41] The productive orientation of dry Spain was not exclusively based on cereal crops, but also on stockbreeding, vineyards and olive groves. However, the important issue is that all of these crops were produced on un-irrigated land cultivated through extensive systems (Gallego 2001ª, 46). In fact, the cattle

humid regions with mild temperatures practised a more diversified agriculture (Gallego 2001[a]). These last areas carried out a more intensive use of collective lands through a growing integration between agriculture, stockbreeding and forestry that allowed them to support an increase in agricultural productivity without resorting to the dismantling of the commons. On the contrary, for the drier provinces, increasing production meant the occupation of a great amount of new arable land, stolen from the commons and, in particular, from the pastures (Gallego 2001[b])[42]. Thus, environmental conditions, since they determined the productive orientation and the productivity of agriculture, and of the common lands themselves, influenced the need to resort to the commons, either to expand arable land or to practise intensive cultivation, and became a key factor in explaining the privatization process. The diversity of shades and gradations found for the whole of Spain also partially responds to this interpretation. In this sense, the greater agricultural yields of the Mediterranean provinces despite their low level of common land persistence, discussed earlier, are principally caused by two elements. On the one hand, these areas carried out a productive diversification that combined dry-farmed crops (vineyards, olive groves, carob and almond trees) and irrigated crops (rice, fruit trees and vegetables), together with stockbreeding. On the other hand, the intensification practised in these areas was related to the greater use of chemical fertilizers and the expansion of irrigation, which to a certain extent moved them away from the traditional organic agriculture still practised in the rest of Spain (Gallego

breeding interests from the interior of the Peninsula also took part in the privatization of the commons, which led to the formation of large extensive exploitations.

[42] In this sense, when the privatization rhythm was most intense, during the decades of 1850 and 1860, it coincides with the reduction of livestock, since the lower availability of common lands made their support difficult (González de Molina 2001).

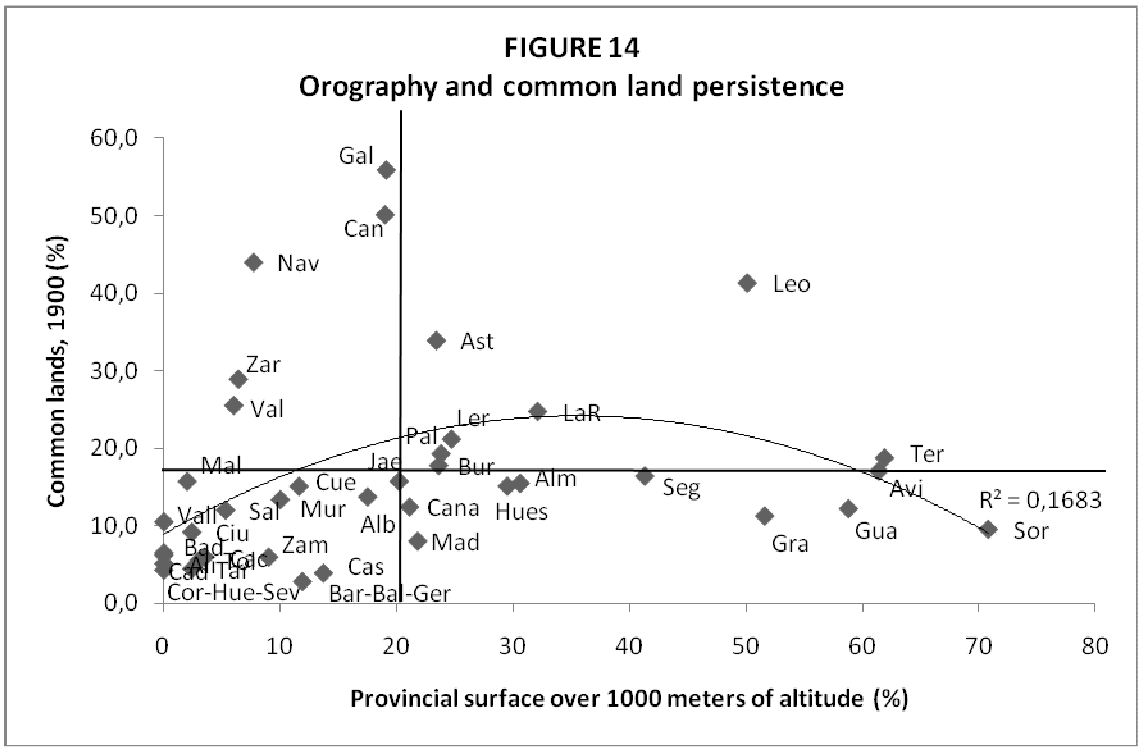
2001[a])[43]. The productive orientation of the Ebro valley, with its environmental peculiarities, combined elements of both the Peninsular interior and the Mediterranean area.

Another environmental condition to consider is the orography, since it influenced both the potential of the land and the expected profits from privatization. In hilly and mountainous areas, multiple factors were present that could raise doubts about the benefits of redefining property rights (Iriarte 1998). A rougher and steeper orography, on the one hand, slows down market exchanges, due to difficult and expensive communications (only those territories with railway, river or sea access avoided this problem) and, on the other hand, makes expanding arable land more difficult. A harsh weather also reduces the yields obtained from these areas[44]. All these factors presented difficulties for the extraction of market profitability from the commons[45].

[43] The transformation of the organic agriculture from the last years of the 19th century especially affected the irrigated lands of the Mediterranean periphery and the Ebro valley, and the dry-farmed cereal crops of this last region and the north of Castilla, together with the presence of big threshing machines in the large exploitations of Cadiz and Sevilla. For the rest of Spain, the agrarian sector went on as in the 19th century, increasing their productions and transforming their methods basically leaning on the typical methods of an organic agriculture (Gallego 2001[a], 43).

[44] Although this argument can, as we have shown, favour privatization in certain conditions, due to the need to expand arable land to meet increasing demand.

[45] Two other mechanisms pointed out by Iriarte (1998, 131) also help to explain why these areas offered fewer incentives to privatize. On the one hand, the redefinition of property rights over the land in areas where livestock and forestry predominate over cultivation is not considered to be essential. On the other hand, the privatization of forests and pastures would have involved enormous exclusion costs arising from the great technical difficulty of enclosing them, and the problems derived from the monitoring of activities on them.



Source: GEHR (1994), Linares (2004) and Gallego (2007).

However, the results obtained from contrasting the level of common land persistence and orography are ambiguous, and do not allow us to draw strong conclusions (figure 14)[46]. The positive relationship is broken and reversed when high percentages of uplands are considered because, despite their higher altitude, these areas experienced an important privatization process. The growing part of the curve reflects the inconveniences that orography imposed in terms of obtaining market profitability from the commons. The low survival of common lands in the more mountainous provinces could be explained by weather severity (referred to earlier). The poor yields extracted from the land, and the resulting cereal orientation, promoted an

[46] Linares (2004) also warns that altitude can conceal a political variable, since one of the criteria to exempt some common lands from privatization was their condition as upland.

extensification at the expense of the collective resources[47]. Nonetheless, we should be aware that sometimes, and this is certainly one of them, this kind of regional analysis can present certain problems, arising from the fact that regional averages may conceal internal geographic differences that, in turn, produce diverse degrees of privatization. Iriarte (1998) shows, for the Navarran case, that the valley in the south experienced a much greater dismantling of their commons than did the upland areas of the north. In the Ebro valley, the mountainous areas retained a great part of their common lands, while sales in the flood plain were intense (Moreno 1998). The same is apparent in the case of Castilla y León, where most remaining common lands were in the hilly areas surrounding the plateau (GEHR 1994).

5. CONCLUSIONS

The explanation of such a complex phenomenon as the one analysed here cannot be reduced to a single factor, nor can it rely on a number of individual elements isolated from each other. Nonetheless, rather than ascribing purely market incentives to this process, this paper attributes a greater explanatory power to the interaction between the social and environmental conditions that shaped local communities, in order to configure the privatization process. What happened in Navarra, for example, shows a close relationship between the environmental features, the modes of agrarian organisation, and the kind of society that prevailed in each area (Iriarte 1998)[48]. The

[47] Likewise, as we have already mentioned, in the mountain economies of the Sistema Ibérico, the economic and political weakness of the local communities facilitated the success of the privatization interests of the liberal state and other external groups (GEHR 1994).

[48] The work of Iriarte (1998) explains how some zones of Navarra, with certain social and environmental characteristics (dispersed population settlements, difficulties of ploughing, high social cohesion) could retain control over their commons and adapt to the new market circumstances. Lana (2008) reaches the same conclusion when analysing the privatization process that developed in Navarra, where the different

recognition of this complex interaction should serve as a reminder not to fall into the trap of a simplistic social or environmental determinism.

To sum up, the variety of common land persistence throughout the 19th century was determined by a multiplicity of social and environmental conditions, within which a range of economic and political pressures were operating. In general, the collectively-managed lands only persisted under certain specific social and environmental conditions, presented especially in north-western Spain, and capable of partially offsetting the pressures coming from the market and the State. In the context of an integrated organic agriculture, a dispersed population and a relatively balanced access to the land, including the commons themselves, allowed rural communities to make better use of the territory. The function that the commons played, together with the social cohesion that these social features promoted, generated sufficient general consent to defend an asset greatly valued by the different groups within the community. Moreover, in those areas that enjoyed a humid climate, the functionality of common lands was also superior, since it allowed for increased production through intensification strategies, rather than resorting to an expansion of arable land. Lastly, a steeper orography also facilitated the preservation of common lands, due to the inherent difficulties that the ploughing of new lands entailed, unless the extreme weather at higher altitudes in some areas made such an expansion necessary if production was to

---

outcome was due to the different environmental conditions and communal institutions in each area. The complex relationship between geography and institutions is also reinforced, since the level of inequality in the flat and populated areas was greater than in the upland areas. Both the works of Moreno (1998) on the mountains of La Rioja, and of Serrano Álvarez (2005) on the province of León, point in the same direction. According to López Estudillo, a disperse population settlement that, as has been argued, favoured social cohesion and a multiple use of the land, coincided with the fragmentation of the territory due to its orographic conditions (2002, 646).

be increased. In other regions, more adverse conditions led to higher privatization levels, depending on the relative circumstances of each area.

Reinforced by constant interaction throughout the centuries, the prior conditions, both social and environmental, of the rural societies that were being shaped in the Spanish regions promoted the development of the kind of institutions that made common land persistence more, or less, difficult[49]. The economic context, together with the availability of natural resources and the social models that were being established, were shaping a kind of rural society that was coherent both with the way in which territory was used, and with its own limits and potentialities (Gallego 2001[a]). Therefore, the productive orientation and the prevailing kind of exploitation were influenced by the social and environmental conditions of each area. The notion of path-dependency, evident in the trajectories followed for each rural society, is of major importance in understanding the consensus over the commons. However, although it seems that there were no external forces that could deeply modify the inertia of these communities, they were not unchanged (2001[b], 212). The social dynamic depended not only on the pre-existing equilibria, but also on the capacity to modify them through repeated collective action (2007, 204). In this sense, the social framework and a range of environmental restraints determined the value that collective resources had for local communities when the time came to reach agreements or to adopt strategies for, or against, the persistence of the common lands.

[49] According to González de Molina and Ortega (2000, 97), the environmental restraints and the ways of organising nature were influenced by the social constructions in a co-evolutive dynamic.

APENDIX

Common land is generally defined as a resource that is collectively owned by the constituents of a particular local authority or council. However, this concept, and the reality that it describes, suffered a deep transformation during the period analysed in this article. The substitution of the council by the municipality as the basis of local power from the end of the 18th century, together with the attack of the liberal state against the legal authority of neighbours to be able to collectively own a resource outside the municipal administration, led to a process in which the ownership of common lands was assimilated by municipalities. The commons thus became public lands belonging to the villages through their municipalities and, from 1855, the State itself tried to acquire an important part of these resources. See GEHR (1994) and Balboa (1999) for a review of this evolution, and Artiaga and Balboa (1992) and Lana (2008) for a view of what, respectively, happened in Galicia and Navarra. Thus, the concept of public land would serve to designate all those spaces that were not privately owned, whether owned by the municipalities, the State, or other public institutions (Iriarte 2002). In 1859, most of the public lands (93 per cent) belonged to municipalities, and so it can be assumed that public lands were in fact managed by the villages themselves. Referring to the clarifications that, in this same sense, Iriarte (1998) has made for Navarra, Balboa (1999, 107) states that the economic and social functionality of the lands owned by the State made them similar in many respects to the lands owned by municipalities and, for these reasons, they are here considered as equivalents. There also existed another kind of property entitlement, from which Galicia constituted the most significant case, which complicates the situation even further, since most of their commons went on being considered private but collectively owned. This paper, however, does not distinguish between collectively-owned and

public lands, since it makes the assumption that, in spite of increasing state intervention, both were mostly managed by the local communities themselves, in and for their own interests. Thus, rather than using the data offered by the GEHR (1994) for the availability of common lands in Galicia, this article employs the data provided by Gallego (2007) - based on the estimates made by Artiaga and Balboa (1992) - that takes into account not only public lands, but also those collectively-owned. In spite of the potential confusion regarding the real owners of the resources, it is considered that the main aim of this paper is to study the capacity of the local communities to preserve these resources for their own interests. We thus refer to those lands that, being owned either by the State, the municipalities or the neighbours themselves, affected the welfare of the local communities and were managed, to a greater or lesser extent, by them. In this sense, we use the original term of *common lands* to refer to these different realities.

REFERENCES

Allen, Robert, 1992. *Enclosures and the yeomen.* Oxford: Oxford University Press.

Allen, Robert, 2004. *Revolución en los campos. La reinterpretación de la revolución agrícola inglesa.* Zaragoza: Prensas Universitarias de Zaragoza.

Artiaga, A. and X.L. Balboa, 1992. 'La individualización de la propiedad colectiva: aproximación e interpretación del proceso en los montes vecinales de Galicia'. *Agricultura y Sociedad*, 65: 101-120.

Balboa, X.L., 1999. 'La historia de los montes públicos españoles (1812-1936): Un balance y algunas propuestas'. *Historia Agraria*, 18: 95-128.

Cabral, A., 1995. *Propiedad comunal y reparto de tierras en Cádiz: siglos XV-XIX*. Cádiz: Universidad de Cádiz.

De la Torre, J. and J.M. Lana, 2000. 'El asalto a los bienes comunales. Cambio económico y conflictos sociales en Navarra, 1808-1936'. *Historia Social*, 37: 75-95.

De Moor, M., L. Shaw-Taylor and P. Warde, eds., 2002. *The Management of Common Land in North West Europe, ca. 1500-1850.* Turnhout: Brepols.

Domínguez, R., 1994. 'La mercantilización de factores en la agricultura española, 1860-1880: Un intento de estimación de los contrastes regionales'. *Revista de Historia Económica*, 12 (1): 85-109.

Gallego, D., 1993. 'Pautas regionales de cambio técnico en el sector agrario español (1900-1930)'. *Cuadernos Aragoneses de Economía*, 2: 241-276.

Gallego, D., 2001[a]. 'Sociedad, naturaleza y mercado: Análisis regional de los condicionantes de la producción agraria española (1800-1936)'. *Historia Agraria*, 24: 11-57.

Gallego, D., 2001[b]. 'Historia de un desarrollo pausado: integración mercantil y transformaciones productivas de la agricultura española (1800-1936)'. In *El pozo de todos los males. Sobre el atraso en la agricultura española contemporánea*, eds. J. Pujol, M. González de Molina, L. Fernández Prieto, D. Gallego and R. Garrabou, 147-214. Barcelona: Crítica.

Gallego, D., 2007. *Más allá de la economía de mercado: los condicionantes históricos del desarrollo económico.* Madrid: Marcial Pons.

GEHR, 1991. *Estadísticas históricas de la producción agraria española, 1859-1935.* Madrid: MAPA.

GEHR, 1994. 'Más allá de la "propiedad perfecta". El proceso de privatización de los montes públicos españoles (1859-1926)'. *Noticiario de Historia Agraria*, 8: 99-152.

GEHR, 1999. ‘Diversidad dentro de un orden. Privatización, producción forestal y represión en los montes públicos españoles, 1859-1926’. *Historia Agraria*, 18: 129-178.

GEHR, 2002. ‘Política forestal y producción de los montes públicos españoles. Una visión de conjunto, 1861-1933’. *Revista de Historia Económica*, 3: 509-541.

González de Molina, M., 2001. ‘Condicionantes ambientales del crecimiento agrario español (siglos XIX y XX)’. In *El pozo de todos los males. Sobre el atraso en la agricultura española contemporánea*, eds. J. Pujol, M. González de Molina, L. Fernández Prieto, D. Gallego and R. Garrabou, 43-94. Barcelona: Crítica.

González de Molina, M. and A. Ortega Santos, 2000. ‘Bienes comunes y conflictos por los recursos en las sociedades rurales, siglos XIX y XX’. *Historia Social*, 38: 95-116.

Gómez, G., 2002. ‘Doctrinas y realidades. Los Frenos a la liberalización de la propiedad en España, 1835-1855’. *Historia Agraria*, 27: 133-163.

Iriarte, I., 1992. ‘Una aproximación histórica a las formas de privatización de los montes públicos en Navarra’, *Agricultura y Sociedad*, 65: 175-216.

Iriarte, I., 1998. ‘La pervivencia de bienes comunales y la teoría de los derechos de propiedad. Algunas reflexiones desde el caso navarro, 1855-1935’. *Historia Agraria*, 15: 113-142.

Iriarte, I., 2002. ‘Common Lands in Spain, 1800-1995: Persistence, Change and Adaptation’. *Rural History*, 13 (1): 19-37.

Iriarte, I. and J.M. Lana, 2006. ‘La cuestión comunal: entre prescripción y perpetuación. Algunos hitos en el caso navarro’. In *Historia de la propiedad. Costumbre y prescripción*, eds. S. Dios, J. Infante, E. Torijano and R. Robledo, 689-714. Madrid: Colegio de Registradores.

Iriarte, I. and J.M. Lana, 2007. ‘Concurrencia y jerarquización de derechos de apropiación sobre los recursos: bienes comunales en Navarra, siglos XVIII-XX’. In *Campos cerrados, debates abiertos. Análisis histórico y propiedad de la tierra en Europa (siglos XVI-XIX)*, eds. R. Congost and J.M. Lana, 201-231. Pamplona: UPNA.

Jiménez Blanco, J.I., 1991. ‘Los montes de propiedad pública, 1833-1936’. In *Historia de la Empresa Pública en España*, eds. F. Comín and P. Martín Aceña, 241-281. Madrid: Espasa-Calpe.

Jiménez Blanco, J.I., 2002. ‘El monte: una atalaya de la Historia’. *Historia Agraria*, 26: 141-190.

Lana, J.M., 2006. ‘Commons for sale. Economic and institutional change in nineteenth century northern Spain’. DT-AEHE-0604. Madrid: *AEHE*.

Lana, J.M., 2008. ‘From equilibrium to equity. The survival of the commons in the Ebro Basin: Navarra from the 15th to the 20th centuries’. *International Journal of the Commons*, 2 (2): 162-191.

Linares, A.M., 2004. ‘The privatization of communal lands in Spain (1750-1925): An econometric revision of the neo-malthusian theory’. DT-AEHE-0403. Madrid: *AEHE*.

López Estudillo, A., 1992. ‘Los montes públicos y las diversas vías de su privatización en el siglo XIX’. *Agricultura y Sociedad*, 65: 65-99.

López Estudillo, A. 2002. ‘Prácticas comunales y patrimonio público en la historia’. In *Historia de la propiedad. Costumbre y prescripción*, eds. S. Dios, J. Infante, E. Torijano and R. Robledo, 633-652. Madrid: Colegio de Registradores.

Moreno, J.R., 1998. ‘El régimen comunal y la reproducción de la comunidad campesina en las sierras de La Rioja (siglos XVIII-XIX)’. *Historia Agraria*, 15: 75-111.

Moreno, J.R., 2004. ‘La articulación y desarticulación de regiones económicas en la España de la Revolución liberal’. In *El legado económico del Antiguo Régimen en España*, ed. E. Llopis, 229-256. Barcelona: Crítica.

Ninyerola, M., X. Pons and J.M. Roure, 2005. *Atlas Climático Digital de la Península Ibérica. Metodología y aplicaciones en bioclimatología y geobotánica*. Bellaterra: Universidad Autónoma de Barcelona.

Ortega Santos, A., 2002. *La tragedia de los cerramientos.* Valencia: Fundación Instituto de Historia Social.

Sanz Fernández, J., 1985. ‘La Historia Contemporánea de los Montes Públicos Españoles, 1812-1930. Notas y Reflexiones (I)’. In *Historia Agraria de la España Contemporánea, vol 2. Expansión y Crisis (1850-1900)*, eds. R. Garrabou and J. Sanz, 193-228. Barcelona: Crítica.

Serrano Álvarez, J.A., 2005. ‘La defensa del comunal y de los usos colectivos, León (1800-1936): ¿una “economía moral”?’. *Historia Agraria*, 37: 431-463.

Vivier, Nadine, 1998. *Proprieté collective et identité communale. Les Biens Communaux en France, 1750-1914.* Paris: Publications de la Sorbonne.

Wrigley, E.A., 1990. *Continuity, Chance and Change. The Character of the Industrial Revolution in England.* Cambridge: Cambridge University Press.