

## **Collective Resources, Human and Social Capital:**

### **The Emergence of Agricultural Cooperatives in Early 20<sup>th</sup> Century Spain**

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#### **Abstract**

The emergence of Spanish agricultural cooperatives from the end of the 19<sup>th</sup> century was a narrative of uneven regional development. It has been claimed that the cooperative movement succeeded in those areas where a relatively significant group of small and middle-sized farms was present. This paper seeks to complement this explanation by analysing the role played by the pre-existing stock of human and social capital. The results show that the social networks built around the use and management of collective resources, such as common lands and irrigation communities, were a key element, together with relatively high levels of human capital, in facilitating the emergence of the cooperative movement in rural areas. It is also argued that the social capital formed around common lands was channelled either to promote agricultural associations or to migrate depending on the economic conditions faced by rural communities. Lastly, common lands may have also indirectly contributed to these processes by promoting higher levels of human capital.

#### **1. Introduction**

The agricultural cooperative movement emerged and spread throughout Europe in response to the increasingly competitive global environment that followed the agricultural crisis of the late 19<sup>th</sup> century. More integrated markets resulting from the combined effect of new technologies and expanding markets, led farmers to adapt to the new prevailing economic conditions. The significance of the cooperative movement and the benefits it brought to the rural sphere is beyond doubt, to the point that its

implications to the social fabric of the rural world have been compared to those brought about by railways (Augé-Laribé 1955; quoted in Baker 1999, 240)<sup>1</sup>. However, the diffusion of cooperatives was unequal both between countries and within them (Federico 2005, 168-172)<sup>2</sup>.

The Spanish experience fits particularly well into the international pattern since the emergence of the agricultural associations offering cooperative services from the end of the 19<sup>th</sup> century was a narrative of uneven regional development, where the general failure was punctuated by the successful story of some regions (Carasa Soto 1991; Garrido 1995, 2007)<sup>3</sup>. Although the first cooperatives were established in the late 19<sup>th</sup> century, the Spanish cooperative movement did not indeed took off until the beginning of the 20<sup>th</sup> century when the Agrarian Syndicate Law of 1906 triggered the formation of new cooperatives by providing tax exemptions. The cooperative movement also received the support of other external agents, especially from the Catholic Church (Castillo 1979; Majuelo and Pascual 1991; Carasa Soto 1991). However, filled with contradictions, the state was not able to support their operations and a great deal of cooperatives was doomed to disappear (Garrido 2007, 185-189). Without the leading role of the state, the farmers' lack of capital, the difficulties to obtain long-term credit, and the low involvement of wealthy landowners prevented a stronger cooperative

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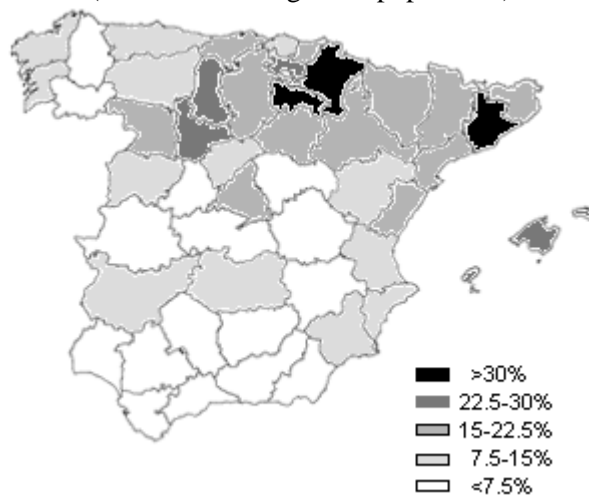
<sup>1</sup> The advantages of cooperation for small farmers are varied but basically consist on the combination of the benefits of family farming with the economies of scale of acting together (Federico 2005, 133). Cooperatives facilitated mutual assistance, the acquisition of cheaper inputs, machinery and credit, the diffusion of information about new technology and methods, the building of processing facilities, and the increase of farmers' marketing power. Cooperation also permitted to overcome the problems of asymmetric information and locked-in between agricultural processors and their suppliers (Henriksen 1999).

<sup>2</sup> See also O'Grada (1977), Van Zanden (1991, 22-23), Guinnane (1994), Galassi (1998), Baker (1999), Henriksen (1999), Simpson (2000), O'Rourke (2007) and Van der Hallen (2009).

<sup>3</sup> The main activities of the Spanish cooperatives were the purchase of agricultural inputs (mainly chemical fertilisers and machinery) and consumer products and the diffusion of information about technologies and methods (Garrido 1995, 119-129; 2007, 186-187). Processing, commercial and credit activities remained relatively scarce, although their importance grew over time, especially after the I World War. Agricultural associations also facilitated the articulation of farmers' interests and acted as a pressure group to obtain advantages from the state (Sanz Lafuente 2001, Planas 2003).

movement (Pan Montojo 1994, 361; Martínez Soto 2003, 141; Garrido 2007, Simpson 2000, 115)<sup>4</sup>. The percentage of members belonging to agricultural associations, around 11 per cent of the total agrarian population by 1924, was indeed low by international comparisons. However, a closer examination reveals a more complex picture since some areas, especially in northern and eastern Spain, definitely stand out in terms of members enrolled (Map 1).

MAP 1. AGRARIAN COOPERATIVES, 1923  
(members over agrarian population)



Sources: Carasa Soto (1991) and Population Census (1920).

The propensity to cooperate has been related to the prevalence of small and medium-size farms, high levels of human capital, relatively low distances to markets and the specialization in products that could be commercialized in national or international markets (Henriksen, 1999; Henriksen and O'Rourke 2005; O'Rourke

<sup>4</sup> Basically, the state was not able to provide long-term and cheap credit, just the opposite as it had been the case in France (Carmona and Simpson 2003, 246). The support of the Catholic Church and a minority of large landowners was more related to social and moral issues, aiming to prevent the advance of socialism and social conflict, than to economic ones. However, due to conflicting aims, it was not enough, or not sufficiently committed, to secure the success of cooperatives since it seems that it primarily depended on the economic capacity of the farmers involved (Garrido 1995). Other ideological forces also contributed to the emergence of cooperatives in the Spanish countryside (republicanism, socialism, and anarchism) to the point that peasants enrolled in catholic cooperatives were only less than one fourth of the total (Pomés 2000, 104).

2002, 2007)<sup>5</sup>. In the Spanish case, it has been argued that, despite the failure of the central government to promote this kind of agrarian organization, the cooperative movement succeeded in those areas where a relatively significant group of small and middle-sized farms was present (Garrido 1995, 2007)<sup>6</sup>. Some authors have also emphasized the importance of trust to promote participation among peasants. The Danish successful example was based on high levels of social cohesion arising from a homogeneous population and an existing peasant's value system that encouraged self-reliance and self-help within the group (Kindleberger 1951, 45; Henriksen 1999, 60; Svendsen and Svendsen 2004, 176). In Ireland, on the contrary, the influence of social and political conflict encouraged distrust and impeded the diffusion of cooperatives (O'Rourke 2007)<sup>7</sup>. According to O'Rourke, 'there are qualitative grounds to believe that trust was indeed a factor involved in the decision to set up a cooperative ... since, after all, it implied that one farmer's income depended on how well and honestly his neighbours did their work' (1360).

Following this approach, this paper seeks to complement traditional explanations by including the pre-existing stock of human and social capital as crucial variables to understand why some areas were able to generate a more vibrant cooperative movement than others. According to Gallego (2007, 161), relatively high levels of cooperative affiliation indicate the existence of information and cooperation networks among peasants. The main hypothesis here relies on the fact that the social networks and the

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<sup>5</sup> The support of the state, by allowing freedom of association and facilitating subsidies, has been also considered an important but not a sufficient condition (Henriksen 1999, 60). The existence of booming markets is not enough either as the English dairy industry, dominated by liquid milk trade, illustrates (Taylor 1976). See also Federico (2005, 134-136) for a survey on these issues.

<sup>6</sup> This interpretation is consistent with the experience of other countries. The success of Danish cooperatives, for instance, was favoured by the fact that small and medium-size farmers owned three fourths of the total land (Henriksen 1999, 59-60).

<sup>7</sup> Similarly, it has been argued that agrarian syndicates in France were built on a 'spirit of association', while the lack of mutual trust was the main cause behind the failure of credit cooperatives in Southern Italy and dairy cooperatives in Belgium (Baker 1999, 301; Galassi 1998; Van der Hallen 2009, 28).

personal links built around the use and management of collective resources, such as common lands and irrigation communities, were a key element, together with relatively high levels of human capital, in facilitating the emergence of the cooperative movement in rural areas. Therefore, through a comparative study of the historical data at the provincial level, this analysis intends to unveil whether, and under which conditions, human capital and the social networks formed around the use and management of common resources might have promoted the constitution of agricultural associations in early 20<sup>th</sup> century Spain. The rest of the paper is organised as follows. Next section discusses the theoretical background that supports the hypothesis that human and social capital may have contributed to the emergence of cooperatives. Section 3 describes the methodology and the results of the empirical analysis. The following section extends the analysis by arguing that the social networks formed around common lands could not have been employed to promote cooperatives, but rather to encourage migration, depending on the economic conditions faced by rural communities. It also explores the effect that common lands could have had on the accumulation of human capital, thereby indirectly affecting cooperative behaviour. Section 5 presents the conclusions.

## **2. Collective Resources and Social Capital**

Building on the seminal works by Putnam *et al* (1993) and Coleman (1987, 1988), a growing literature has employed the concept of social capital to account for successful collective action and diverse economic and political performance<sup>8</sup>. Social norms, values and networks facilitate mutual cooperation by fostering predictable behaviour, mutual obligation and trust among individuals and groups (Wolcock 1998; Rotberg 2001; Krishna and Uphoff 2002; Ostrom and Ahn 2003). In other words, social capital reduces

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<sup>8</sup> See La Porta *et al* (1997), Knack and Keefer (1997), Zak and Knack (2001), and Knack 2002), among others.

the transaction costs of collective action and limits free-riding by facilitating decision making, mobilization and management of resources, communication and coordination, monitoring and enforcement and conflict resolutions. The concept of social capital has nonetheless been open to criticism for its ambiguity and for the problems derived of its measurement (Sobel 2002)<sup>9</sup>. Different proxies, such as voluntary associations, voter turnout and surveys' responses, among others, have been used with uneven fortune to assess the level of 'civicness' within particular societies. These problems are especially acute when analyzing historical social capital from a quantitative approach.

This paper explores an alternative proxy for social capital in pre-industrial economies by focusing on the prior importance of institutions built around the use and management of collective resources. The selection of the proxy variable is inspired by the specific vehicle through which social capital is acquired, namely the existence of networks that allow for social interaction (Grootaert and Bastelaer 2002, 5)<sup>10</sup>. The distinction between 'structural' and 'cognitive' social capital can be helpfully applied here (Krishna and Uphoff 2002). Structural social capital refers to objective, tangible elements such as local institutions, organizations and social networks, which are usually set up for economic, social or political considerations. Alongside these more formal organizations, informal networks of friendship, neighbourliness and assistance operate, reinforcing thus the social interactions promoted by them (McIntosh 2001, 121; Clemens 2001,

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<sup>9</sup> See also Wolcock (1998, 155-159) for a concise summary of these issues.

<sup>10</sup> Note that social capital is a by-product of other activities that imply social relationships (Coleman 1988). Putnam (1993) regards craft guilds as incubators of social capital since they promoted horizontal reciprocal trust. Similarly, formal institutions, regardless of whether participation in them was voluntary or obligatory, formed the basis of rural social capital in later medieval and early modern English villages (McIntosh 2001). These institutions allowed "the creation of personal networks based upon respect, trust and shared experience that comprised people beyond their own families, immediate neighbours, and personal friends" (128). Likewise, Svendsen and Svendsen (2000, 74-75) trace back the stock of social capital using agricultural cooperatives from the mid-19<sup>th</sup> century in Denmark and Poland, while stressing the role of the commons as alternative potential indicators of the presence of social capital.

249)<sup>11</sup>. Cognitive social capital involves more abstract manifestations such as trust, norms and values. However, both types of social capital, structural and cognitive, reinforce each other, especially through a process of long-term co-evolution based on frequent personal interactions (Collier 2002, 19). Social capital would thus be generated in the course of continuing and successful cooperation (Clemens 2001, 248; Svendsen and Svendsen 2004). Therefore, the long-term history of society determines the stock of social capital available, thus conditioning future collective action and particularly the emergence of agrarian cooperatives.

The existing common lands and irrigation communities at the beginning of the 20<sup>th</sup> century in Spain, understood as ‘structural’ social capital, fit into the theoretical model described above since they provide dense networks of continuous social interactions and fertile soil for the development of values and social norms. The structured social interaction formed around the use and management of these collective resources was the outcome of a centuries-long development, resulting thus in longstanding traditions of local cooperation. Irrigation communities, predominantly located in the Mediterranean coast and some interior provinces, went at least back to medieval ages and the same holds true for the remaining common lands in most of the country although their origins remain unclear (Glick 1970; Pérez Picazo and Lemunier 1990; Pérez Sarrión 1990, 1994; Sanz Fernández 1985; GEHR 1994; Jiménez Blanco 1996). The social interactions built around these institutions induce mutual awareness and control, favouring cooperative behaviour by facilitating compliance and, in the long

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<sup>11</sup> These informal networks should not be ignored since the social interactions and the benefits they generated were especially important among less favoured groups and developing countries (McIntosh 2001, 152; Krishna and Uphoff 2002, 104). On the other hand, ‘the ability to transpose social capital cultivated at the individual level to larger projects of collective action is limited by the available organizations, as well as the location of those organizations within the cultural categories of public discourse’ (Clemens 2001, 250). Therefore, common lands and irrigation communities may play the role of those ‘available organizations’ that channel social energies.

run, impregnating social values and roles of behaviour that will be transmitted in each generation (Gallego 2007, 54-58, 169)<sup>12</sup>. The use and management of these resources implied consensus, together with monitoring and enforcement mechanisms that facilitated carrying out what had been agreed. Information flowed easily through the channels provided by these institutions and formal and reputation mechanisms facilitated honest behaviour.

Water, on the one hand, has always been a crucial production factor in agrarian societies since its availability not only increases agricultural productivity, but also the security of crops. Irrigation communities managed water resources by constructing, maintaining and expanding the physical system, allocating water to the users, and resolving potential conflicts (Garrido 2010, 4-6)<sup>13</sup>. These functions were achieved through regular meetings and a body of formal and informal norms and rules that regulated individuals' behaviour. A system of fines, together with a body of official guards and mutual informal self-monitoring, ensured compliance and prevented dishonest behaviour by individual users (wasting of water, irrigating out of turn, failing to clean the secondary canals, or flooding other neighbours' fields, among others). Irrigation communities faced the disequilibrium between increasing water demand and the limited water availability by expanding and improving the physical system and the efficiency of the distribution and allocation mechanisms. Furthermore, these institutions provided distributing methods to face water scarcity in times of drought or organize collective work to clean the main canals.

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<sup>12</sup> These social values and norms contribute to promote the sense of belonging to the community. Social interaction in the long run not only generates social values, but tends to materialise in organisations and networks that formalise the cooperation processes, usually increasing their effectiveness (Gallego 2007, 58-63).

<sup>13</sup> See also Pérez Picazo and Lemunier (1990), Calatayud (1993, 2008), Pérez Sarrión (1994), Peris (1997), Pérez Picazo (1997) and Garrido (2010, 2011).



The commons, on the other hand, also played a crucial role in the organisation of production in organic economies since they were a source of pastures, fuel and wood, together with temporary arable land, to members of the community (Iriarte 2002). The communal regime in Spain implied two main types of access to the land: a direct but regulated access for all the members of the community or a temporary cession of use rights to particular individuals in exchange for a monetary income. The regulation underwent by the local communities, represented by local councils or municipalities, constituted the central element on the use of the commons by regulating the access to these resources, the enforcement of rules and the resolution of any conflict that might arise (20). Informal norms, reputation mechanisms and peer-monitoring were also widespread (Moreno 1998, 90). Their social functionality, which allowed for the accumulation of the elites while securing the reproduction of the less favoured groups, legitimated the system (Jiménez Blanco 2002)<sup>14</sup>. In this sense, common lands contributed to prevent increasing differentiation and potential social disintegration, which favoured social cohesion. Significantly, the existence of the commons also facilitated the development of reciprocity or mutual aid mechanisms, based on the expectations about future interactions that their collective use implied (Iriarte 1998, 125).

The extraordinary resilience of communal practices in Spain is a clear evidence of enduring cooperation behaviour within those communities. Their long-lasting success rests on its capacity for solving the free-rider problem thanks to a set of formal and informal rules operated at the local level and congruent with the social and environmental context in which they operated (Ostrom 1990, 1994). This is not to suggest that these communities were free from conflict but instead that they developed

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<sup>14</sup> The communal regime in Spain implied two main types of access to the land: a direct but regulated access for all the member of the community or a temporary cession of use rights to particular individuals in exchange for a monetary income.

internal mechanisms to manage them (Moreno 1998; Garrido 2011)<sup>15</sup>. The degree of autonomy, internal democracy and equity enjoyed by the users should not be exaggerated either. Both systems, common lands and irrigation communities, reproduced the existing economic and social inequality that characterised the society in which they were immersed but, at the same time, nonetheless, these systems allowed for the reproduction of the less favoured groups and were flexible enough to adapt to changing circumstances (Herin 1990; Calatayud 2008; Iriarte 2002; Lana 2008). It has indeed been argued that these institutions were part of a wider ‘moral economy’ where, despite the dominance of the elite, the interests of the less favoured groups were preserved (Moreno 1998; Oliva 2003; Serrano 2005; Ferri 1997, 83-84; Calatayud 2008, 250). Potential conflicts were kept within certain limits because these systems would have been doomed to fail without the consensus and cooperation of the peasants (Laliena 1994, 32; Garrido 2011, 23; Moreno 1998, 91-95; Lana 2006). A culture of compliance to the norms emerged based on formal and informal rules, peer-monitoring, reputation mechanisms and successful cooperation<sup>16</sup>. Therefore, this kind of self-governing institutions tended to be efficient and sustainable ‘because of the social capital in the form of effective working rules those systems are more likely to develop and preserve, the networks that the participants have created, and the norms they have adopted’ (Ostrom and Ahn 2003, xxiii).

However, the transition to capitalism and the establishment of the liberal state brought about changes in the way these resources were used and managed. In this sense,

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<sup>15</sup> See Peris (1997), Mateu (1997), Pérez Picazo (1999) for internal differentiation and conflicts around water and Moreno (1998), Balboa (1999), Jiménez Blanco (2002) for the case of common lands. Conflictivity around the commons became especially high when they were subject to privatization attempts. The level of conflictivity and social cohesion was of course influenced by the existing inequality within the local community itself (Gallego 2007).

<sup>16</sup> The benefits of cooperation contribute to maintaining social cohesion in the long run (Gallego 2007, 44). It should also be stressed that the activities of these institutions trespassed its own boundaries and were enmeshed in the culture of the local communities, regulating everyday practices or in the form of popular traditions and festivities (Pérez Sarrión 1994, 15; Serrano 2005, 437-438).

either their privatization or their appropriation and regulation by central authorities tends to eliminate the social networks, values and norms built around communal property arrangements (Baland and Platteau 1996, 175-176). Irrigation communities, on the one hand, underwent a formal reorganization which favoured users' associations against other kind of institutions such as municipal councils and *Heredamientos* (Pérez Picazo and Lemeunier 1990, 176; Ferri 1997; Sánchez Picón 1997; 118; Pérez Picazo 1999, 651). The regulations include in the *ordenanzas* were nonetheless preserved and adapted to meet new constraints. It has been argued that these changes reinforced the position of the large landowners within these organizations but an unequal structure was already present in the traditional regime and the liberal state only confirmed those trends (Pérez Picazo and Lemeunier 1990; Inglada 1994)<sup>17</sup>. Furthermore, the number of users and the land irrigated by canals and *acequias* expanded during the 19<sup>th</sup> century and early 20<sup>th</sup> century in some areas, what reinforces the importance that these institutions had for local communities and agricultural development (Calatayud 1993, 61-63; Ramón i Muñoz 2008, 277-278).

Common lands, on the other hand, suffered an intense attack from the end of the 18<sup>th</sup> century onwards that led to a massive privatization, either of their property rights, or the way in which these resources had been traditionally used (Balboa 1999; Jiménez Blanco 2002; Iriarte 2002). The outcome of this process, however, presents a wide regional variety (GEHR 1994). The diverse persistence of common lands serves to stress the social consensus that these spaces generated in those areas that resisted the privatization pressures. The concept of social cohesion has indeed been used to explain why common lands survived in some areas (GEHR 1994, 127; Sabio 1997, 204; Iriarte

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<sup>17</sup> The degree of elitism present here reflected, as we have already noted, the structure of the local community itself.

1998; Moreno 1998, 104-106; Balboa 1999, 111; Serrano 2005, 438)<sup>18</sup>. According to Lana (2008), despite the great changes caused by the emergence of capitalism and liberalism, the notion of ‘community’, understood as a social network built around formal and informal norms, survived where common property and collective practices did not disappear<sup>19</sup>. Likewise, the movements of protest caused by the disappearance of common lands during the second half of the 19<sup>th</sup> century and early 20<sup>th</sup> century can be seen as a collective learning process that also contributed to the emergence of agricultural associations, especially in those areas where opposition was relatively successful (Gastón 2010, 38-46). The less favoured groups mobilized demanding the recovery of common property and peasants’ associations were formed with the aim of collectively purchasing common lands (Sabio 2002; Lana 2008, 181-183). In Navarra, for instance, some of these associations established around the resistance against the privatisation of common lands became agricultural cooperatives during the 1920s (Majuelo and Pascual 1991, 165)<sup>20</sup>. In fact, the defence of the common lands was one of the principles of the Cooperatives Federation in Navarra (169)<sup>21</sup>. Similarly, in León, the

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<sup>18</sup> Up to 1855, the municipalities themselves acted on their own initiative when deciding to sell the commons and, when the central state became involved in the process through the Disentailment Law, local communities were given the possibility of taking legal action to exclude from privatization those lands that were being enjoyed collectively (Jiménez Blanco 2002, 152-153). Furthermore, different formal and informal strategies to oppose privatization were also carried out by the local communities. Municipalities either concealed estates, provided wrong information or refused to respond to the requests of the central government (Moreno 1998, 104; Jiménez Blanco 2002). Legal channels were also employed to denounce illegal ploughings or appropriations or even to invalidate the sales (De la Torre y Lana 2000). Likewise, peasant groups collectively bid in the auctions or arranged the repurchasing of the commons as 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. Different strategies were also employed to preserve traditional uses against the intervention of the state (Serrano 2005, 448-454).

<sup>19</sup> According to Gastón (2010, 380), the communitarian identity was nurtured by the culture built around the commons.

<sup>20</sup> Similarly, the popular movements formed around the defense of traditional land tenure systems in Catalonia (*rabassa morta*) generated intense social interactions that may have played a significant role in the emergence of agricultural associations that ultimately became cooperatives (Planas and Valls-Junyent 2011).

<sup>21</sup> *Federación Católico-Social de Navarra*. Significantly, the struggle around the recovery of the commons that had been privatised during the 19<sup>th</sup> century constituted the main social issue during the first third of the 20<sup>th</sup> century (Majuelo and Pascual 1991, 132-133; Gastón 2010).

communal regime not only survived despite of the pressures imposed by the new market economy and the liberal state, but also gave support to new types of ‘collectivism’ in the form of dairy and creamery cooperatives (Serrano 2005, 455).

To sum up and according to Greene (2001, 153), ‘social capital would include an entire range of institutions, practices, devices, and learned behaviours that permit individuals and groups to render physical spaces productive and social and cultural spaces agreeable’. Common lands and irrigation communities fulfilled both conditions, thus nurturing social capital and potentially contributing to the emergence of cooperatives<sup>22</sup>. Joining a cooperative demanded the solidarity and unlimited liability of their members when relying on loans from banks or credit from input suppliers, which meant that a high amount of mutual trust was needed. It also required avoiding opportunistic behaviour when dealing with the cooperative. Therefore the existence of common lands and irrigation communities may have enhanced the likelihood of the emergence of cooperatives by providing a long-term experience on formal and informal monitoring and enforcement mechanisms, facilitating thus the required mutual knowledge and trust to participate in this kind of collective endeavours<sup>23</sup>. The diffusion of information about the potential benefits of cooperation was also easier since it can be shared in regular interactions or at more formal meetings. Likewise, past experiences of successful cooperation seems to be an important factor determining future collective

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<sup>22</sup> According to Gallego *et al* (2010, 98), the preserving of communal practices may have contributed to promote collective action. Although an explicit link is not proposed, Carmona and Simpson (2003, 234-235) agree that common lands and irrigation communities formed the basis of local cooperation among farmers in the period prior to the emergence of cooperatives.

<sup>23</sup> Reputation mechanisms would be embedded in the functioning of both common-property and cooperative institutions and information would flow in both ways, which increase the costs of defection to potential cheaters since social sanctions would extend from one institution to the other and to the local community in general. Being caught of being disloyal would therefore be highly destructive for one’s reputation (Van der Hallen 2009, 10). Although applied to cooperatives the following reasoning is also suitable to common lands and irrigation communities: ‘the information and the enforcement advantages of cooperatives are interconnected in the sense that they enabled the enforcement of behaviour upon members that lowered information costs’ (Henriksen 1999, 66).

endeavours since they provide organizational skills, trust and a psychological stimulus (Hirschman, 1983; Putnam 1993; Platteau 2000, 96)<sup>24</sup>. Henriksen (1999, 68) notes that ‘some prior experience with self-help organization and in self-governing institutions’ was especially valuable when starting a cooperative<sup>25</sup>. If past experiences on collective action are absent, cooperation undeniably becomes a highly demanding endeavour (Ostrom and Ahn 2003, xxiv). Common lands and irrigation communities may have therefore increased farmers’ cooperative knowledge and experience in a long-run process of ‘collective learning’ that is beneficial for collective action and economic development, and particularly to the emergence of cooperatives.

The potential of these social networks for promoting collective learning and the diffusion of information is, however, mediated by the level of education. Although human capital has been considered a crucial element for the emergence of cooperatives in other countries (Henriksen 1999; O’Rourke 2002), its influence has been overlooked in the Spanish case. The positive effects of education on economic development have been widely recognized (Bowman and Anderson, 1976; Sandberg 1982)<sup>26</sup>. Regarding its potential influence in the cooperative movement, effective collective action is only achieved when capable agents are also available (Krishna 2002). High levels of human capital facilitate the diffusion of information and the recruitment of local entrepreneurs for cooperative endeavours (Henriksen 1999, 60; Svendsen and Svendsen 2004, 82). Planas (2003, 111) indeed considers that the diffusion of agricultural knowledge was an important, but hidden and therefore dismissed, function of the Spanish cooperatives. It

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<sup>24</sup> Research on common-pool resources has shown that, apart from other factors, past experiences of cooperation constituted necessary features to achieve cooperation (Ostrom 1990).

<sup>25</sup> More recently, Svendsen and Svendsen (2004, 40), argue that the emergence of cooperatives builds on cooperatives values and practical cooperative structures inherited from the past. Similarly, agricultural syndicates in France built on former precedents of local cooperation (Baker 1999, 241). Planas (2003, 111) briefly mentions that the lack of cooperative experience could have been a factor explaining the failure of Spanish cooperative movement.

<sup>26</sup> See Núñez (1992, 2003) for an analysis of the Spanish experience.

is also important to acknowledge that a high literacy rate also makes possible the recruitment of officials and clerks that can keep the records and deal with the tasks required by the market and official issues (Laqueur 1974). It seems that Spanish agricultural associations employed personnel with hardly any experience in business and accountancy, what surely hindered its possibilities of success (Martínez Soto 2003, 146). From a more general perspective, education improves social or cultural skills and promotes the psychological and attitudinal changes congruent with a market economy where change and innovation are pervasive (Laqueur 1974; Schofield 1974, 451; Bowman 1980, 7-8; Schultz 1989).

But a modernizing agriculture requires not only an educated, but also a healthy population (Schultz 1964, 175). It can be actually argued that, in late 19<sup>th</sup> and early 20<sup>th</sup> century agriculture, health and strength were more important than literacy or numeracy (Horrel, Humphries and Voth 2001, 347). In fact, up to 20 per cent of the population in France during the 18<sup>th</sup> and early 19<sup>th</sup> century had too little energy to perform any arduous physical work. Therefore, given the relative backwardness of Spanish agriculture at the end of the 19<sup>th</sup> century and the diverse situation in different regions, the peasant's bio-physical welfare should be taken into account when assessing the levels of human capital (Fogel 1993, 10-11; Reher 1997, 255; Martínez Carrión 2002). Education and bio-physical welfare are closely intertwined since a more educated population is more aware of health status and its causes and, consequently, is going to pay more attention to appropriate diets and hygiene habits (Núñez 1992, 198). Both variables are indeed positively correlated in 19<sup>th</sup> century Spain (Martínez Carrión and Pérez Castejón 2002, 449-450). Therefore, human capital, both from a narrower or a broader definition, may have positively influenced the emergence of cooperatives.

### 3. Methodology and Results

In order to test the arguments outlined above about the emergence of cooperatives in Spain, a model is built containing the variables that traditionally have been employed to explain this process and the potential influence of social and human capital. Data, available for 44 provinces in inland Spain, has been collected from population censuses, statistical yearbooks, official reports and secondary sources<sup>27</sup>. Apart from throwing light into the ultimate factors that promoted the cooperative movement, this approach has the advantage of comparing areas which are operating within the same legal and institutional context and is thus able to qualify the widespread argument that blames the state for the failure of Spanish cooperatives. It also allows for isolating elements that are not visible in cross-country comparisons.

The importance of cooperatives in every province is measured by the proportion of members over the active agrarian population in 1923<sup>28</sup>. Although the first cooperatives were founded in the late 19<sup>th</sup> century, they did not really proliferate until the beginning of the 20<sup>th</sup> century. The general weakness of the cooperative movement, nonetheless, impeded the consolidation of many of these initiatives (Garrido 2007, 185-189). Until 1910, 1,559 agricultural syndicates had been established around the country but 63 per cent of them had vanished by 1916. The use of 1923 as the reference date is thus aimed to account for the consolidation of the cooperative movement<sup>29</sup>. Likewise, a time gap between the dependent and the independent variables is considered in order to identify the conditions that facilitate successful collective action and avoid reverse

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<sup>27</sup> Data on the Basque Country is not included due to the lack of information on common lands. The Canary and the Balearic Islands are the other provinces with missing data in some of the variables.

<sup>28</sup> Although the proportion of inputs purchased collectively or the agricultural production marketed through cooperatives may be a better indicator of their importance (Federico 2005, 169), there is hardly data on these issues at the provincial level. The data on cooperative membership should also be regarded with caution given the problems hidden by the official sources (Garrido 1995, 116-117).

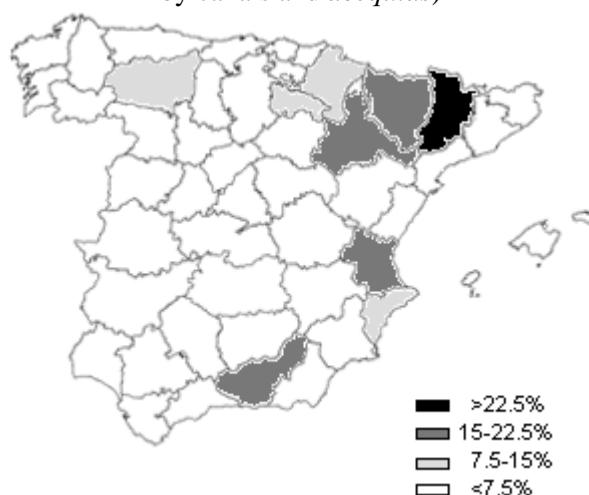
<sup>29</sup> Data availability also constraints the choice made, since the first comprehensive report on the importance of agricultural associations is made at that point.



causality problems. Most of the explanatory variables thus refer to 1900 as the reference date<sup>30</sup>.

The initial stock of social capital is measured by the importance that common lands and irrigation communities had in the different Spanish provinces at the beginning of the 20<sup>th</sup> century<sup>31</sup>. On the one hand, the proportion of agricultural land irrigated by a system of canals and *acequias* is employed as a proxy for irrigation communities. On the other hand, common lands are measured as the proportion of common lands over the total provincial area. However, since common lands could be exploited either privately or collectively, this variable is also split up into two by taking into account the fraction of total uses that were being enjoyed privately or collectively<sup>32</sup>. Maps 2 and 3 show the relative importance of these institutions in each region. As already argued, they are expected to positively influence the emergence of cooperatives.

MAP 2. IRRIGATION COMMUNITIES IN SPAIN, 1916  
(fraction of agricultural land irrigated  
by canals and *acequias*)



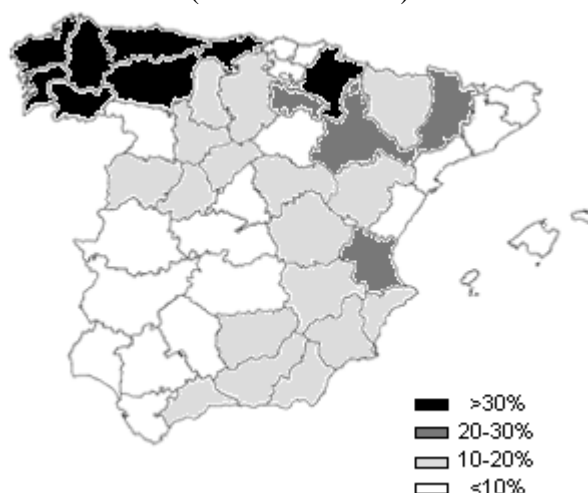
Sources: Ministerio de Fomento (1918), GEHR (1994).

<sup>30</sup> The sources and methods employed to construct the variables, together with a summary of the statistics, are presented in Appendix I and II.

<sup>31</sup> As already argued, the intensity of the long privatization process greatly varied between different regions. The existence of irrigation systems however reflected old traditions of cooperation in response to environmental conditions.

<sup>32</sup> The data however that distinguish them must be taken with caution since their values mixed market and non-market considerations (GEHR 2002, Jiménez Blanco 2002).

MAP 3. COMMON LANDS IN SPAIN, 1900  
(% over total land)



Sources: GEHR (1994), Artiaga and Balboa (1992), Gallego (2007).  
Without the Basque Country.

Since the stock of human capital here refers not only to education but also to physical welfare due to its influence on the capacity to work of the population, both in quantity and quality, the Physical Life Quality Index is employed as a proxy for expanded human capital (Morris 1979). This indicator combines literacy, infant mortality and life expectancy, and has been developed for Spain by Domínguez and Guijarro (2000). Given the homogeneity of the sources from which it is built, this index is highly accurate and extremely helpful to analyse health and educational outputs in developing economies (114-115)<sup>33</sup>.

The hypothesised role of human and social capital must be tested against other potential explanations. Established accounts on the emergence of cooperatives point to

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<sup>33</sup> Literacy, that is, the proportion of the population who could read and write, is an appropriate indicator of human capital in the first stages of development, especially when the general level of education is low, which makes it suitable for analysing the Spanish case during this period (Bowman and Anderson 1976; Sandberg 1982; Núñez 1992, 79, 82). Infant mortality has been used as a proxy for health since it reflects patterns on hygiene and the nutritional status of the population, which denotes the balance between the intake of nutrients and the claims against it in the form of physical activity and exposure to various diseases (Fogel 1993, 7; Martínez Carrión 2002, 63). Life expectancy assesses the extent to which appropriate conditions can be maintained. See Federico and Toniolo (1991) for an analysis of this index in different European countries. Zamagni (1989, 125) has indeed encouraged a more widespread use of this indicator among economic historians. The lack of Spanish regional data on heights also limits the available choices.

the existence of economic incentives and the degree of access to the land as crucial factors explaining cooperative behaviour. The existence of economic incentives, on the one hand, induced the collective effort necessary to promote cooperatives. Low commercialisation levels implied less demand of the services that cooperatives could offer, so the importance of the cooperative movement is expected to be greater in highly commercialised contexts (Sanz Lafuente 2001, 184; Carmona and Simpson 2003, 238; Martínez Soto 2003, 148). The fraction of people living in cities bigger than 5,000 inhabitants is employed to account for the existence of market incentives.

On the other hand, there are various reasons that link the level of access to the land with the propensity to cooperate. Firstly, economic, social and political inequality negatively influences a community's co-operative capacity (Boix and Posner 1998, 688). The less-favoured groups, dissatisfied with the existing distribution, will not agree with co-operative arrangements that contribute to perpetuating the status quo and the elites, eager to maintain their privileges, will try to prevent any collective action that may undermine it. Although it seems that a minority of large landowners did indeed support cooperatives as a way of preventing social conflict, rural elites generally opposed the cooperative movement in order to secure their control over labour, land and credit markets (Garrido 1995, 124-127; 2007, 191-192)<sup>34</sup>. The widespread poverty of farmers has also been regarded as one of the main factors behind the failure of cooperatives in Spain given their lack of capital and access to credit (Garrido 2007, 190). Furthermore, cooperatives offer no clear benefits to landless peasants (Baker

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<sup>34</sup> In this sense, although the economic benefits to small and medium landholders were clear, the same is not true for large landowners that are able to operate efficiently privately (Garrido 2007, 191; O'Rourke 2007, 1368). However, non-economic motives such as fear of social conflict or the seeking of votes and prestige may have counteracted that trend (see also Planas 2010, 69-69). Interclass cooperation indeed grew in importance after the I World War, what implied a push to the cooperative movement (Garrido 1995, 134). On the other hand, well-off middle-men were also an obstacle (Carmona and Simpson 2003, 239).

1999, 41), so high levels of inequality in the access to the land would not promote cooperatives. Access to land is measured as the fraction of landowners and tenants over the agricultural population<sup>35</sup>. A proxy assessing the average size of the plots is also calculated by dividing agricultural land between landholders, and included as an interaction term. Since the existence of a broad layer of small and medium size farmers has been considered the main factor behind the Spanish cooperatives, these variables are expected to be positive<sup>36</sup>.

Lastly, a bunch of controls are also incorporated to account for other potential relationships that may affect the propensity to cooperate. These variables include the importance of the agricultural sector, settlement pattern, population density, land productivity and altitude. Land productivity, in particular, tries to control for the expected benefits of cooperation, since not every area, nor every crop, offered the same opportunities to the development of cooperatives (Galassi 2001; Carmona and Simpson 2003, 237). It also controls for the potential increase in productivity that either human capital, common land or irrigation communities may have promoted.

Table 1 reports the results of a series of OLS cross-section regressions testing the hypothesis outline above. Columns (1) and (2) report the baseline specification, relating the importance of cooperatives with the variables that account for human and social capital, as well as to those regarding market opportunities and access to the land. Column (3) and (4) extend the set of variables including the different controls explained above. The variables assessing human and social capital seem to have a significant

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<sup>35</sup> Given the lack of data for this variable in 1900, data from 1860 must be used. Another option is to use data from 1920 but the source only gives information about landowners and the rest of agrarian population, so it is not possible to distinguish between tenants and wage earners.

<sup>36</sup> It is also true that this variable may also affect social capital, since the incentives that promote cooperation are more effective among social groups who shared interests and values. Polarization leads to rent-seeking behaviour and reduces consensus and farmer cooperation (Banerjee *et al* 2001, O'Rourke 2007, 1360). Inequality increases transaction and enforcement costs of cooperative arrangements because 'the degree of confidence or trust that individuals have in the likelihood that others will play their part in a cooperative arrangement ... may be low' (Bardhan 2001, 252).

influence on the emergence of cooperatives in early 20<sup>th</sup> century Spain. The Physical Quality of Life Index is strongly correlated to cooperativism. Similarly, the existence of irrigation communities highly increases the propensity to cooperate. The relationship between common lands and agricultural associations is more complex since there is either a negative or a positive link depending on the importance of collective practices on the commons. In those areas where the local community was more involved in the use of the commons, the importance of cooperatives was higher. However, when commons were enjoyed privately, their influence is negative, indicating the presence of powerful elites that monopolised these resources, not only preventing the building of social networks around them, but also increasing inequality. The role played by the commons on the emergence of cooperatives should, nonetheless, be qualified, as we will analyse in Section 3, by their influence on human capital and migration processes.

The incentives to cooperate seem to be enhanced by the presence of a wealthy market, as shown by the positive correlation between urbanisation and the dependent variable, although its effect is not significant when different controls are included. This may be explained by the deficiencies of urbanisation to account for long-distance trade. The low cooperative success of North-western Spain, specialised in perishable dairy products, may therefore be due to the long distance to the main markets and the high transportation costs (Carmona and Simpson 2003, 256). Resorting to foreign markets of dairy products and meat was also limited by protectionism since, by increasing the relative cost of cattle fodder, it impeded that this region could compete efficiently, closing thus the path that Denmark, for example, had followed<sup>37</sup>.

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<sup>37</sup> See Van Zanden (1991, 232-233).

TABLE 1. THE EMERGENCE OF COOPERATIVES IN EARLY 20<sup>TH</sup> CENTURY SPAIN

|  | (1)                 | (2)                  | (3)                  | (4)                   |
|--|---------------------|----------------------|----------------------|-----------------------|
| Dependent variable: Membership in agrarian cooperatives 1923<br>(% of male active agrarian population) |                     |                      |                      |                       |
| Irrigation<br>Communities  | 0.452***<br>(0.152) | 0.600***<br>(0.160)  | 0.297**<br>(0.135)   | 0.374**<br>(0.142)    |
| Common<br>Lands  | -0.076<br>(0.623)   |                      |                      |                       |
| Common land*<br>Private Uses   |                     | -0.336*<br>(0.179)   | -0.570***<br>(0.197) | -0.610***<br>(0.176)  |
| Common land*<br>Collective Uses  |                     | 0.030<br>(0.069)     | 0.335**<br>(0.143)   | 0.397***<br>(0.130)   |
| Physical Qual.<br>Life Index   | 0.766***<br>(0.136) | 0.757***<br>(0.142)  | 0.514***<br>(0.122)  | 0.494***<br>(0.123)   |
| Urbanisation   | 0.190**<br>(0.078)  | 0.247***<br>(0.083)  | 0.080<br>(0.098)     | 0.008<br>(0.116)      |
| Access to land   | 0.228*<br>(0.134)   | 0.280**<br>(0.126)   | 0.243*<br>(0.133)    | 0.199<br>(0.128)      |
| Access to land*<br>Aver. Plot Size   |                     | 0.007<br>(0.005)     |                      | 0.010*<br>(0.006)     |
| Agric. Pop.  |                     |                      | -0.297***<br>(0.078) | -0.249***<br>(0.077)  |
| Settlement<br>Pattern  |                     |                      | -0.353**<br>(0.147)  | -0.435***<br>(0.135)  |
| Pop. density   |                     |                      | -0.028<br>(0.081)    | 0.045<br>(0.090)      |
| Land<br>Productivity   |                     |                      | 0.079***<br>(0.026)  | 0.087***<br>(0.026)   |
| Altitude   |                     |                      | 0.011<br>(0.066)     | -0.004<br>(0.063)     |
| Constant   | -39.672***<br>9.930 | -46.237***<br>10.412 | -18.854**<br>(8.426) | -24.103***<br>(8.585) |
| R-squared  | 0.518               | 0.562                | 0.684                | 0.725                 |
| Observations   | 44                  | 44                   | 44                   | 44                    |

Robust standard errors between brackets.

\*, \*\*, or \*\*\* denotes significance at 10, 5 or 1 per cent level.

The variables that represent access to the land, either the fraction of landholders or its interaction with the average size of the plot, appear to have a significant impact on cooperation rates. This result does support previous interpretations that stress the importance of a wide layer of small and medium-size farmers as a condition to cooperate (Garrido 2007). In this sense, the extreme land fragmentation of northern Spain could have been a barrier due to the farmers' lack of capital. In addition, the estimated effects of inequality may be downward biased due to two main reasons. Firstly, in those regions where access to the land was more concentrated, cooperatives may be over represented since the extreme poverty of their members led to low levels of activity and a high degree of failures despite their initial proliferation that perhaps are not reflected on the data (Garrido 1995, 134). Secondly, there is a wide consensus that, although the geography of land inequality did not vary due to the privatization of common lands from 1860 onwards, the gap between regions increased (Rueda 1997, 66). Therefore, employing data on 1860 instead of 1900 may also produce a downward bias in the estimated coefficients.

Lastly, the control variables employed also tell a coherent story. The expected benefits of cooperation, measured by land productivity, are strongly and positively correlated with agricultural associations (Galassi 2001). Since common lands and irrigation communities may have increased land productivity, this result allows for isolating their effect through social capital. On the other hand, a more dispersed settlement pattern reduced the propensity to cooperate by making social interaction more difficult. The negative effect of the fraction of population employed in agriculture may be related with economically backward rural societies where the benefits of cooperation were also lower.

### **Common lands and its influence in human and social capital: A hidden effect?**

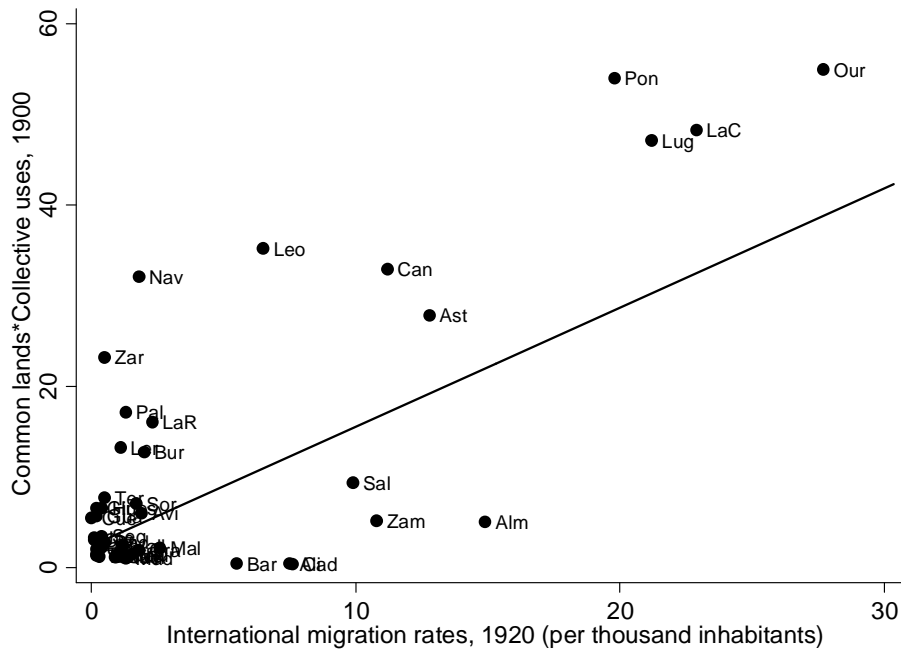
The previous results show the positive influence on social capital of those common lands where collective practices had persisted. However, two elements should be additionally considered in order to evaluate their contribution. Firstly, although they may have promoted social capital, it is possible that, in some regions, less favourable natural environments and/or the lack of economic incentives coming from expanding markets or industrialization processes led farmers not to establish cooperatives but to use those social networks in other directions, mainly migrating (Gallego 2007, 175-180). In Galicia during the first third of the 20<sup>th</sup> century, for instance, both agricultural associations and migration processes were supported by the logic of the traditional moral local economy (Fernández Prieto and Soto 2010, 262). Accumulated social capital, by facilitating collective action or the process of migrating, can be understood as articulating peasants' responses as either 'voice' or 'exit' depending on the existing economic context (Hirschman 1970). The geography of intense migration movements interestingly coincides with that of common land persistence and relatively low levels of agricultural associations. However, previous explanations of Spanish migration have not paid attention to this link. Sánchez Alonso (2000), for instance, attributes regional variation in emigration rates to differences in wealth, income, literacy, urbanisation, and migratory traditions. However, as argued here, these migratory traditions, the so-called 'family-and-friends' effect, may have been based on communitarian links built around the commons<sup>38</sup>. Figure 1 plots collectively used common lands in 1900 against emigration rates in 1920,

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<sup>38</sup> Sánchez Alonso (2000, 750-751) indeed wonders about where these migratory chains come from and suggests that more research is needed in that direction given its strong significance when explaining overseas emigration in Spain. A high positive effect of chain migration is also found when analysing internal out-migration (Silvestre 2005, 246).



around the same date employed when accounting for the importance of cooperatives. It indeed shows a strong positive relationship (the correlation coefficient is 0.78)<sup>39</sup>.



Sources: GEHR (1991, 1994), Sánchez Alonso (1995).

The northern half of the country, especially in the Western part, combined the existence of large reserves of common lands and high levels of social cohesion with the lack of economic opportunities, which resulted in high migration rates. The migration process may have been promoted by those social networks that provided not only information, but also contacts and support in the receiving areas, especially when travelling overseas. The migration phenomenon should thus not be understood as acting against community links, but as an extension and reinforcement of them, providing that migrants maintained contacts at home and sent remittances and information that

<sup>39</sup> This correlation would be stronger if we took into account that migration from the east and south-east, the cases of Almería, Alicante or Cádiz, was mainly seasonal to Algeria (Sánchez Alonso 2000, 740). Similar results are obtained if temporary out-migration rates in 1920, including both internal and international migration (Silvestre 2007), are used (correlation coefficient = 0.49). Interestingly, when the stock of permanent internal out-migration in 1920 is employed, the correlation is also positive providing that the provinces that show higher levels of migration abroad, those from north-western Spain, are excluded. This result would support the hypothesis that internal and external migration were competing alternatives (Silvestre 2005, 245-246). I am grateful to Javier Silvestre for facilitating me his data.

contributed to local development (Gallego *et al* 2010, 110). Furthermore, by providing a complementary source of income, the survival of common lands and collective uses may have also facilitated the accumulation of enough material resources to fund migration among the less favoured groups, thus releasing the poverty constrained, so important in the Spanish case (Sánchez Alonso 2000). Likewise, high levels of human capital, both educational and physical, also facilitate migration and, as argued below, common lands may have contributed to promote both.

Secondly, the diverse persistence of common lands may have not only had a direct effect of the level of social capital, but also implied other important consequences for the welfare of the local communities, especially regarding the accumulation of human capital. Therefore, common lands may have indirectly contributed to the emergence of cooperatives and the migration process. On the one hand, the standard of living of the rural population, especially among the less favoured groups, was greatly influenced by the extension and the way common lands were managed, since these spaces constituted an insurance against misery that secured the reproduction of the system (Jiménez Blanco 2002, 147)<sup>40</sup>. By providing a complementary source of income for peasant households, common lands may thus have contributed to securing a minimum nutritional intake and a more diversified diet (Martínez Carrión 2002, 43-44). Furthermore, the privatization of common lands has been linked to the reduction of livestock and this may have reduced the availability of animal proteins (meat and milk) that so positively influence human welfare (Cusso and Nicolau 2000, 545). Evidence from the second half of the 19<sup>th</sup> century indeed shows that nutritional consumption per capita decreased (Martínez Carrión 2002, 37). The Physical Quality of Life Index used

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<sup>40</sup> The commons constituted a source, among other different goods and services, of pasture, wood, fertilizer and fuel, together with the possibility of temporary cropping, thus playing a fundamental role in the working of the rural communities (Balboa 1999; Jiménez Blanco 2002).

here shows a significant increase in the coefficient of variation between 1860 and 1900 (Domínguez and Guijarro 2000, 121), which evidences how the regional levels of standard of living (and, consequently, the capacity to work) were diverging while common lands were being privately appropriated<sup>41</sup>.

On the other hand, the financing of schooling partly relied on the income that common lands generated at least until the beginning of the 20<sup>th</sup> century, thus influencing educational attainments. The monetary income derived from the cession of use rights on the commons constituted a fundamental component of the municipal budget (Bernal 1978; García and Comín, 1995; Iriarte, 2003)<sup>42</sup>. In 1858, common lands covered 13.9% of the total municipal budget and a 32.4% of the ordinary one (García and Comín 1995, 95)<sup>43</sup>. These figures, nonetheless, reflect the national average and hide the importance of the commons in those municipalities that had preserved them, especially in the rural areas. In the province of Seville, for instance, despite being one of the areas that most suffered privatization prior to the Disentailment Law of 1855, the income generated by the commons still provided the 100 per cent of the ordinary revenue in 66 per cent of the municipalities in 1849 (Bernal 1978, 307). Furthermore, commons were not only a source of revenues to municipalities but could be used as a guarantee when applying for credit to finance the provision of public goods (Bernal 1978, 307; Iriarte 2003, 245). The financial difficulties of municipalities during the 19<sup>th</sup> century are well known by the historiography (Del Moral Ruiz, 1986; García and Comín 1995). Moreover, the privatization of common lands meant a loss of assets that would negatively influence their economic viability and their possibility to meet the increase in expenditures

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<sup>41</sup> The coefficient of variation of the IFQV at the provincial level goes from 0.29 in 1860 to 0.47 in 1900 and then hardly decreasing to 0.46 in 1910 and 0.39 in 1930 (Domínguez and Guijarro 2000, 121).

<sup>42</sup> Common lands were indeed the source of the economic and political independence of municipalities against an increasingly active central government (García and Comín 1995; Jiménez Blanco 2002, 142).

<sup>43</sup> Furthermore, the income coming from the renting of common lands did frequently not appear in the municipal budgets, so these figures would be a minimum approximation (Del Moral 1986, 746).

required by the functions on education, health and charity, which they were suppose to carry out (Jiménez Blanco 2002, 169; Iriarte 2003)<sup>44</sup>. In Seville, for instance, the revenues generated by common lands were reduced by 70 per cent between 1821 and 1849, a situation that aggravated later by the Disentailment Law of 1855 (Bernal 1978, 302).

During the 19<sup>th</sup> century, municipalities were responsible for the provision of elementary education and their financial capacity was crucial when it came to fund the expenditures on schooling, what given their fiscal problems, contributed to the backwardness of Spanish literacy (Núñez 1991, 121, 134; 1992, 212; García and Comín 1995, 91)<sup>45</sup>. Municipalities contributed to 63.4 per cent of the cost of rural schooling in the middle of the 19<sup>th</sup> century, absorbing around 15-20 per cent of the municipal expenditures between 1858 and 1863 (Sarasúa 2002, 579; García and Comín 1995, 93). Consequently, the evolution of education in Spain followed a clear regional pattern during the 19<sup>th</sup> century because the central government left its funding to the local municipalities (Núñez 1991, 140). Although literacy improved in the whole country between 1860 and 1900, the gap between Northern and Southern Spain increased (Núñez 1992, 98, 251). The provision of schooling, measured as the number of schools and teacher per population and the public expenditures in education per capita was indeed higher in the northern half of the Peninsula, which also coincided with the geography of common land persistence. The diverse survival of the commons may

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<sup>44</sup> The income generated by the commons and the funds obtained with their guarantee financed municipal salaries and the creation and maintenance of public goods (Iriarte 2003, 250). The financial problems of municipalities negatively influenced the provision of local public goods, greatly influencing the provision of education and health (García and Comín 1995, 84-85, 91). The delays in paying the wages of the local teachers and doctors were widespread. Moreover, most of the municipal budget on education was devoted to the payment of local teachers, which did not prevent their wages from being extremely low. A high proportion of these teachers had no official certificates and a great deal of villages did not have a proper building to become the school.

<sup>45</sup> Although there were former initiatives, the state involvement in the universal provision of primary education only began in 1902 when the state took care of the primary education budgets.

therefore partly contribute to explain the dissimilar funding capacity of municipalities that led to a considerable regional variation in the provision of schooling (Núñez 1992, 287; Sarasúa 2002, 581; Collantes 2004, 36)<sup>46</sup>. In the province of Cádiz, for instance, the salaries of male and female teachers came from the commons' revenues in a 91.4 and 74.6 per cent respectively in 1840 (Bernal 1978, 303). Furthermore, municipalities frequently financed schooling directly through the commons by allocating a plot of land to the maintenance of the teacher or by providing the building where lessons were given (Sarasúa 2002, 580-581). Moreover, the absence of common lands not only influenced the municipal financial capacity, but also the direct individual costs of education since privatization negatively affected the less favoured groups<sup>47</sup>.

Apart from influencing the capacity to finance schooling, common lands could also have an effect on the educational level through the social capital they generated. The arguments proposed by Goldin and Katz (1999, 298) may suggest a complementary link between common lands and schooling since, when educational decisions are made at the local level, 'the production of human capital depends largely on social capital lodged in small communities'. Schooling, as a secondary socialisation mechanism, can indeed positively affect social capital through the shaping of a civic community and the building of ties to other people different from the family, which facilitates organizing collective endeavours in adulthood (Ueda 2001; Plateau 2000, 305). The indirect effect of common lands on social capital may still be larger since, according to Knack (2002,

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<sup>46</sup> In a comparative study of two European regions, Maynes (1979) shows that the absence of common lands made the expansion of schooling difficult in Vaucluse (France) because it had to be funded with regressive local taxes, while in Baden (Germany), the persistence of traditional ways of financing local schools based on payments in kind (housing, arable land...) allowed for a higher diffusion of elementary schools.

<sup>47</sup> It should be taken into account that both types of human capital are highly related. High educational levels, especially among women, positively influence human capital because it contributes to reducing infant mortality and improving health standards thanks to the adoption of hygienic and healthy habits (Núñez 1992, 198). The increase in life expectancy, in turn, makes education more valuable, contributing to its expansion.

784), ‘improving education and making income more egalitarian ... have the beneficial side effect of increasing social capital’. In this sense, the privatization of common lands greatly increased inequality and led to process of social polarization and proletarianisation, especially in Southern Spain (Linares 2001; Ortega Santos 2002).

## **Conclusion**

The existence of common lands and irrigation communities contributed to the emergence of cooperatives in early 20<sup>th</sup> century Spain by providing the social networks that facilitated the diffusion of information and the building of mutual knowledge and trust. The result that trust is essential to the development of cooperatives is consistent with the experience of other countries, such as the successful example of Denmark and the less triumphant cases of Ireland, Belgium or Italy (Henriksen 1999; O’Rourke 2007; Van der Hallen 2009). In this sense, the case of the commons is particularly illuminating since its positive effect on collective action is only visible when the access to them had not been privately appropriated. Human capital, both educational and physical, is also a crucial element when explaining the diverse regional pattern of agricultural associations. In this respect, the role played by common lands during the 19<sup>th</sup> century in increasing human capital may also have been critical to the success of the cooperative movement. Furthermore, although common lands may have fostered social capital, less favourable natural environments and/or the lack of economic incentives led peasants not to establish cooperatives but to use those social networks to migrate. In addition, common lands may have also indirectly facilitated migration by increasing human capital and providing a source of complementary income. Not only a minimum level of human capital and income is required to migrate, especially when

travelling long distances, but also the expected returns are higher, thus increasing the propensity to migrate.

The longstanding traditions of local cooperation around collective resources were weakened during the transition to capitalism, both for the expansion of markets and the intervention of the state. In the case of common lands, the privatization process that from the 18<sup>th</sup> century affected not only their property rights, but also the collective practices over the surviving commons, may have had unintended consequences for economic development by negatively affecting the possibility of resorting to cooperation modes different from the market. It undermined the social networks built around them and, since they were the basis of the rural economic system and the municipal budget, it implied a great shock to the standard of living of the local communities. Consequently, both human and social capital were affected and this, in turn, negatively influenced the capacity to establish cooperatives, partly contributing to explaining the failure of the cooperative movement in early 20<sup>th</sup> century Spain. Although there is no uniform recipe to promote collective action at the local or regional level, this paper has tried to stress the importance of local social networks and human capital. However, the macro links explored here must be complemented by analyzing the mechanisms that account for these relationships at the micro level.

## Appendix I

### Summary Statistics

| Variable                          | Obs | Mean | Std. Dev. | Min | Max  |
|-----------------------------------|-----|------|-----------|-----|------|
| Membership in cooperatives (1923) | 44  | 13   | 9.2       | 1.5 | 36.2 |
| Irrigation communities (1916)     | 44  | 4.8  | 6.8       | 0   | 28.6 |
| Common lands (1900)               | 44  | 18.7 | 16.1      | 0.9 | 55.9 |
| Collective uses (1870-1903)       | 44  | 48.4 | 29.3      | 5.4 | 98.4 |

|                                       |    |       |      |      |       |
|---------------------------------------|----|-------|------|------|-------|
| Physical Quality of Life Index (1900) | 44 | 47.7  | 8.2  | 31.2 | 66    |
| Urbanization (1900)                   | 44 | 24    | 19.2 | 2.3  | 71.2  |
| Land access (1860)                    | 44 | 47.4  | 11   | 23.8 | 75.1  |
| Plot size (1860)                      | 44 | 9.8   | 6.7  | 0.7  | 28.8  |
| Agricultural population (1900)        | 44 | 39.5  | 12.8 | 15.2 | 80.7  |
| Settlement pattern (1900)             | 44 | 9.2   | 17.4 | 0.67 | 89.3  |
| Population density (1900)             | 44 | 41.6  | 26.9 | 14.6 | 136.5 |
| Land productivity (1900)              | 44 | 107.1 | 56.3 | 34.6 | 272.7 |
| Altitude                              | 44 | 18.7  | 19.8 | 0    | 70.8  |

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## Appendix II

**Cooperatives:** Members of agricultural cooperatives in 1923 (as a percentage of male agricultural population). Own calculations from Carasa Soto (1991) and the Population Census of 1920.

**Irrigation communities:** Percentage of agricultural land irrigated by canals and *acequias* in 1916. Own calculations from Ministerio de Fomento (1918) and GEHR (1991).

**Common lands:** Percentage of common land over the total land in 1900. Own calculations from GEHR (1994), Artiaga and Balboa (1992) and Gallego (2007). Since common lands could be exploited privately or collectively, this variable is split into two by taken into account the average fraction of total uses that were being enjoyed privately or collectively. The average proportion of collective uses over the commons between 1870 and 1903 is used to avoid unexplained short-run variations in the data (GEHR 1991). Therefore, collectively used commons are the result of multiplying common lands by collective uses (scaled from 0 to 1), while privately used commons are obtained in the same way employing the average of non-collective uses. Own calculations.

**Human capital:** Physical Quality of Life Index, combining literacy, infant mortality and life expectancy. Taken from Domínguez and Guijarro (2000).

**Urbanization:** Percentage of the population living in municipalities of 5,000 inhabitants or more. Taken from Carreras and Tafunell (2005).

**Access to the land:** Percentage of landowners and tenants in the agricultural labour force. Own calculations using the Statistical Yearbook of 1860. There are no similar data in 1900. Likewise, the data on 1860 distinguish between landowners, tenants and labourers while the Population Census of 1920 only provides two groups: landowners and the rest of agricultural population.

**Average land plot size:** agricultural land divided by landholders. Own calculations from GEHR (1994) and the Population Census of 1860.



Agricultural sector: Percentage of the active male agricultural population. Own calculations from the Population Census of 1900.

Population density: Inhabitants divided by total hectares of geographical surface. Own calculations using the Population Census of 1900 and INE (2001).

Settlement pattern: Number of settlements by 100 square kilometers. Own calculations from the Dirección General de Instituto Geográfico y Estadístico (1904) and INE (2001).

Land productivity: Agrarian output divided by productive land. Own calculations from Gallego (1993).

Altitude: Percentage of each province higher than 1,000 thousands meter. Taken from INE (2001).

International migration: Gross rate of overseas emigration per thousand population, 1919-1920. Taken from Sánchez Alonso (1995).

Temporary out-migration: Internal and international temporary out-migration rate (per thousand population). Taken from Silvestre (2007).

Internal out-migration: Internal out-migrant stock per thousand population in 1920 (stock of out-migrants born in province  $i$  that reside in the rest of the provinces  $n-i$ ). Taken from Silvestre (2005).

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