

COMMUNAL LANDS IN DEVELOPPED COUNTRIES AND ITS INFLUENCE IN THE ACTIVITY PATRONS OF THE RURAL MUNICIPALITIES. THE CASE OF MONTES VECIÑAIS EN MAN COMÚN OF GALICIA (SPAIN)

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Abstract

The Montes Veciñais en Man Común (MVMC) constitute a singular type of communal land tenure unique in the Spanish context, located in Galicia (NW of Spain). In 2001 there were more than 2,800 forest communities with 660.000 ha, representing the 30% of the Galician forestlands. Taking into account the importance of the past (and in a lower way present) agro-forest use of those communal lands, and the arising of new social demands and land uses, this article aims to contribute to a better understanding of the nature of this type of forestlands, as a strategic development axe for rural areas. This work starts with a previous analysis of the historical evolution of MVMC by literature discussion to, in a next stage, make an approach to its influence in the municipal dynamics in Galicia through interviews, press and official publication analysis and official data. The information has been treated with statistic tools and introduced into Geographic Information Systems (GIS), with the aim of facilitating the analysis and defining its main current constraints and opportunities. The results expose the ambiguous effectiveness of the current policy measures orientated to agrarian or forest activities separately on communal lands and show the necessity of strategic programmes focused on integral development linked to the specific socioeconomic and geographical frame. With those measures, we can combine and manage all issues related to the social tradition, the current goals and the future prospects of communal managers and, therefore, improve the economic profitability and social replacement on management.

Keywords: Community forests, municipalities, GIS.

Resumen

Los montes vecinales en mano común (MVMC) constituyen un tipo singular de propiedad de la tierra única en el contexto español, estando localizados en Galicia (NO de España). En el año 2001 existían más de 2.800 comunidades de montes con 660.000 ha, representando el 30% de la superficie forestal de Galicia. Estas tierras han tenido gran importancia en el pasado ganando en el presente mayor interés social que económico. Este artículo tiene como objetivo mostrar las características de este tipo de tierras y como pueden contribuir al desarrollo rural en Galicia. El trabajo comienza con un análisis de la evolución histórica de los MVMC para posteriormente analizar como estos han influido en la dinámica poblacional y social de Galicia. La información ha sido tratada con herramientas estadísticas y sistemas de información geográfico. Los resultados muestran las circunstancias en las que se han desarrollado este tipo de propiedad y la necesidad de puesta en marcha de actuaciones políticas diferenciadas para mejorar la gestión de estas tierras.

Palabras clave: Comunidades forestales, municipios, SIG..

1. Introduction

Terms like social forestry, rural forestry and/or community forestry arise like key factor on rural areas (Konijnendijk, 2000). Consequently, communal forestlands or communal agro-forestry lands acquire an important weight in matter of rural sustainable revitalization, representative communities of the local management of common resources to meet the needs of all local population (Glück, 2000; Short, 2000). Communal lands have had an important role in rural economies, independently of their vocation and use, destined to increase the agrarian base of a familiar economy of subsistence. The insertion in an international trade and competitive economy in the middle of 19th century determined significant changes in the uses and management practices at the time. Communal forestlands began to lack the sense that long ago they had and not be a clear function in the new socioeconomic stage, triggering a passive forest management by local communities (Pinto-Correia, 2000). Technological and economic changes, government appropriation or conversion of these lands to individual agricultural production to meet the needs of increasing populations are some of the reasons of abandon or disappearance of communal lands in the time (McKean and Ostrom, 1995).

This worrying abandon has caused a clear public concern about of knowing and improving the future state of communal lands. Knowing and understanding the evolution, current state and possible perspectives of a rural area, measures that allow to stabilize in the time its population can be determined (if that is the land model we defend), either only optimizing the forest activity or together with agrarian and even other activities, maintaining the set of local services and infrastructures.

Like a possible incentive to wake up the interest for the management of communal lands in different regions, we try to contribute to scientific results regarding the strategic use and management of them. Assessing detailed information about organization and management by communal owners on communal areas in Galicia (Northwest Spain), the social participation will provide a wealth of information about social, economic and environmental issues associated with agro-forestry or forestry in rural settlements. The results could be used in planning, implementation and monitoring of public measures in order to successfully manage and improve communal lands for future local needs and perspectives.

Taking into account the demographic evolution and their relationship with the forest uses and the land tenure, it can be observed that the Galician population in general, and the rural areas in particular, has suffered along the 20th century a massive emigration toward the exterior as consequence of the agrarian sector crisis. This phenomena has been the main catalyst of the changes in the Galician territory along this period (Beiras and López, 1999) and it has influenced notably the fragmentation of the property and the gradual separation of the owners and their heirs of the land. Brandl (2002), Schraml and Hårdter (2002) and Wickham et al. (2000) corroborate the positive correlation between land uses fragmentation and population's density in other rural regions.

The rupture between the population and the agrarian system has caused definitively the evolution of the traditional uses of the forest towards the ones which exist nowadays. In this successive and reiterated process, in which a lot of people have abandoned the rural areas because of the scarce agrarian incomes (Macdonald et al., 2000), the resident population usually retire without the necessary capacity to develop new methodologies of economic revitalization.

The factors already mentioned, such as the age of the available manpower in the rural areas, the descent in the number of farms, the territorial base and the property fragmentation, are the signs of the structural problems and the delay and inadequacy of the modernizing, formative and investment processes of the forestry in Galicia, in spite of some cooperativist movements (Fandiño, et al., 2006), as authors like Warkotsch and Chas et al. (2002) or Elwood et al. (2003) have mentioned for other regions.

2. Evolution and background of Galician communal forestlands

Montes Veciñais en Man Común (MVMC) constitutes a legal classification of communal forestlands in Galicia, central element in its natural patrimony, cultural heritage and singular communal ownership in the Spanish framework. The average size of MVMC, 230 ha, is much more larger than the parcels of particular owners, with 1,5-2 ha/owner in 6-7 parcels (Marey, 2006), that causes a great contrast.

Independently of the different theories about their origin, Galician MVMC are shared by a group of people according to agreed rules, as other forest communities in the European context (Merlo, 1995). In Galician region, the MVMC belong to the neighbours surrounding to one or more villages, usually parishes, where the legal regime does not establish different quotas among co-owners. The place of residence or neighbourhood determines the access - egalitarian and free for the neighbours- and it is not possible to inherit or sell of its use right (Marey, 2003). The parish population engaged collective actions to sustainably manage their forestlands as complementary activities for the family economy without any external authority governing. All natural persons who live in a parish with MVMC are communal owners- named comuneros- and hence also enjoy right of use, in spite of there are not duty to participate in joint forest management. Currently, the criteria for community inhabitants to be considered comuneros change in each community, because the different degrees of neighbourhood and relationship with the forest that can be found in the different communities (week-end habitants, pensioners without direct activity in the communal areas, farmers, emigrants that have still properties in the community, every-day inhabitants working in other non-agro forestry sectors, etc.). If those criteria would be not well defined, it could be origin even of legal disputes for the communal forest use rights (Raposo, 1996). A significant aspect is the fact that 45 % of MVMC is under Forest Regional Administration management through different kind of figures, changing basically the percentage of benefits to Forest Administration and to the communities.

The complementary activities on MVMC have been linked with agrarian activities, being a significant support in the traditional agrarian system (Bouhier, 1979). Forest function, understood this one like the timber production, has not been the one of greater relevance in Galician forests (it is necessary to notice that meanwhile in other places forests are areas with forest origin and vocation, in Galicia can be uncultivated areas, independently of their origin, dedicated to agrarian and livestock activities).

With these socioeconomic patterns, the traditional uses on communal lands change and Galician rural system begin to unbalance. Conflicting interests between economic development- Administration- and traditional uses- neighbourhood- arise like answer to the alteration of the traditional modus vivendi and radical changes in rural landscapes (Bauer, 2005), conflicts observed in other regions too (Clinch et al., 2000; O'Leary et al., 2000).

Nowadays, with the Spanish administrative organization in Autonomous Regions, the Galician Government is the responsible for legislating and negotiating these properties in a subsidiary way, considering a specific Galician Law of MVMC- Law 13/89- where the MVMC are defined as those that '...with independence of their origin, of their productive possibilities, of their current use and of their agrarian vocation, belong to local groups in their quality of social groups and not like administrative entities, and they have been used commonly as a neighbours' regime', and assure their character of indivisible, inalienable, imprescriptible and free of tributes.

3. Description of study area

Galicia lies to the Northern of Spain (figure 1) with an area over 29,500 km² and a density population of about 92.8 inhabitants by km² (INE, 2005). The local administration system in Galicia consists of a three-level hierarchical structure with 4 provinces, 315 municipalities and about 3,793 parishes. The provincial and municipal boundaries of Galicia are also included in figure 1.

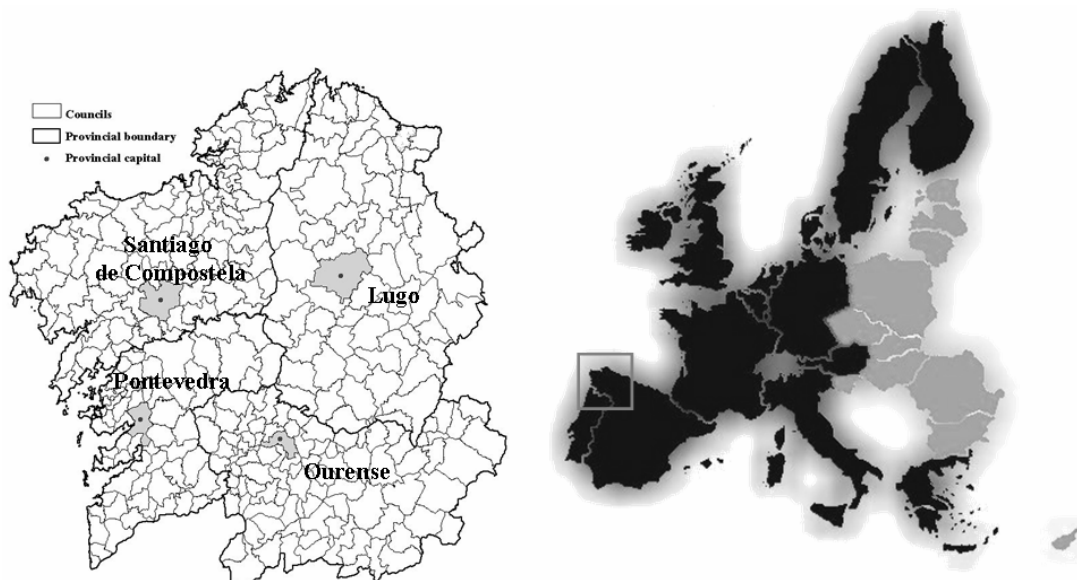


Figure 1. Location of Galicia in Europe and its administrative distribution

The 32.4% of the Galicia population lives in rural areas and draws its income especially from agriculture. In Galicia a 28.5% of the land area is used as arable land, meanwhile a 69% are forests and woodlands occupying 43.2% of the total land area (Xunta de Galicia, 2001). The remaining land is used for other land-uses as unproductive and wetland.

In 2001 there were in Galicia 661,183 ha of MVMC (over 30% of Galician forestland) belonging to 2,878 communities, with an average area of 230 ha. Carrying out an analysis for provinces a very asymmetric distribution is observed, being the interior provinces, Lugo and Ourense, the ones where this type of land tenure is concentrated, meaning 69% of the forest communities and 74% of the MVMC area (Figure 2)

Province	Total area (ha)	Forest area			MVMC				
		ha	% province	% Galicia	N°	ha	Average area (ha)	% province	% Galicia
Coruña (A)	793,086	467,178	59	25	242	43,517	180	5	7
Lugo	980,295	621,508	63	33	917	210,676	230	21	32
Ourense	727,830	497,757	68	27	1,051	276,536	263	38	42
Pontevedra	446,456	291,815	65	16	668	130,455	195	29	20
Galicia	2,947,667	1,878,258	64	100	2,878	661,183	229.74	22.43	100

Figure 2. Distribution of the MVMC by Galician provinces

4. Material and methods

Determining the importance and repercussion that presents this type of ownership nowadays requires an analysis of different sources of information, than will allow us to have a bigger knowledge of the past situation and the future perspectives for this juridical form of property.

Firstly, the current situation of the councils with MVMC is analyzed. It is studied the different official agroforestry statistics that allow us an analysis of the forest environment as a part of the rural areas, using the data of the SIFGa (Marey, 2006), methodology that appears reflected in the figure 3.

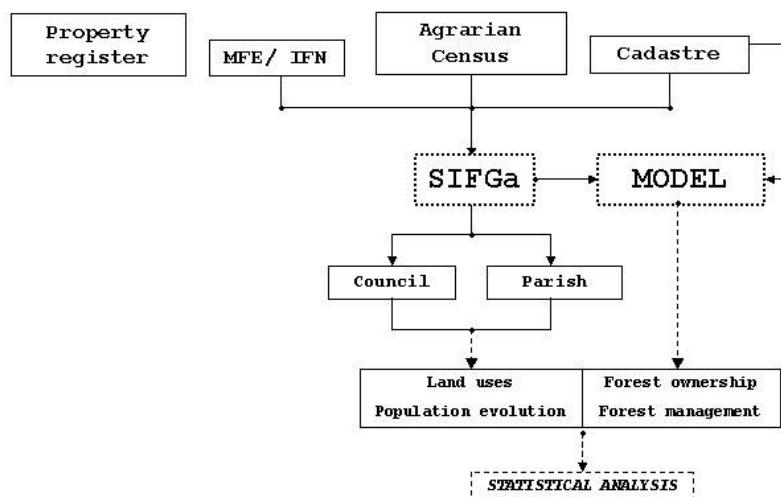


Figure 3. Methodological framework for the development of the Forest Geographical Information System of Galicia (SIFGa)

When the system of territorial information was built, a reclassification was carried out to obtain the data equalization. At this point the variable grupo_1 was obtained by grouping the percentage of MVMC on the total forestland of the municipality. This variable allows us to

know the percentual distribution of the different types of ownership for each Galician councils. The table 1 shows the percentage of private individual forest property in each municipality (obtained by difference with the collective private area: MVMC). Here it can be observed that a fourth part of the Galician municipalities don't present this type of property and in 38.5 % of them it can be considered as majority.

Grupo_1	Interval (%)	Nº	Percentage on the total of councils
0	0	81	25.8
1	0.01- 12.80	57	18.1
2	12.81- 40.30	55	17.5
3	40.31- 67.80	83	26.4
4	> 67.81	38	12.1
Total		314	100

Table 1. Distribution of the MVMC according to the variable grupo_1

By means of the elaboration of boxes diagrams and an analysis of Spearman's correlation, the current situation and important variables for the rural development as the land use, the population evolution or the existence of forest fires are analyzed.

5. Results and discussion

According to the characteristics of the territory where the MVMC are located, the first results point out as the percentage of agrarian use for the group of the Galician councils ranges among 6- 71 %, with an average value of 31.6 % and standard deviation of 13.7 %. The established relationship between the superficial importance of the agricultural use and the variable grupo_1 (figure 4) shows that in those municipalities with more collective private forest area, the farmland diminishes.

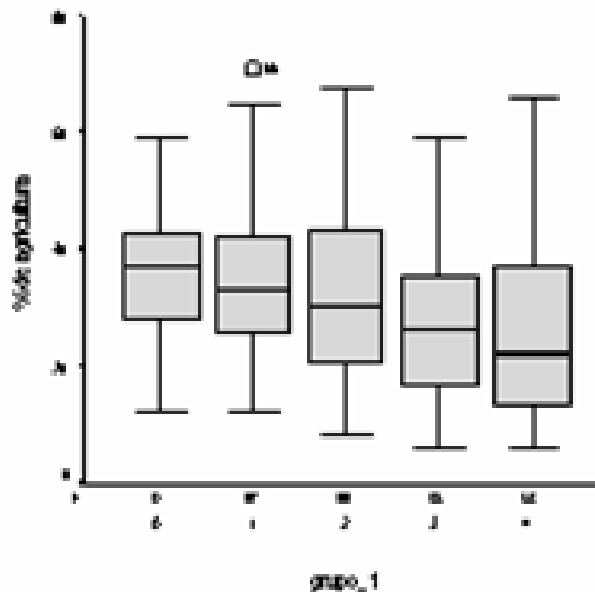


Figure 4. Boxes diagram of the distribution of the variable agrarian uses and variable grupo_1 (Rho= -

0.352)

Albeit, it can not be proved a direct dependence between the farmland and the land tenure, especially of the forest, although a significant negative correlation of 1 % exists, showed by the correlation Spearman's coefficient ($Rho = -0.352$). The study of the variable no- wooded land in front of the variable grupo_1 locates the first among 0- 66 % with an average value of 15.2 % and standard deviation of 14.6 %. The statistical analysis shows that municipalities with more percentage of communal forest have bigger areas dedicated to no- wooded land, contrarily of those with predominance of individual private property (figure 5). For this section, we can differentiate two groups of municipalities with different behavior; firstly, those with MVMC area inferior to 40 % and where the percentage of no- wooded land is about 10 % and, secondly, councils where the proportion of MVMC is superior to 40 % and the no- wooded land is about 20 %.

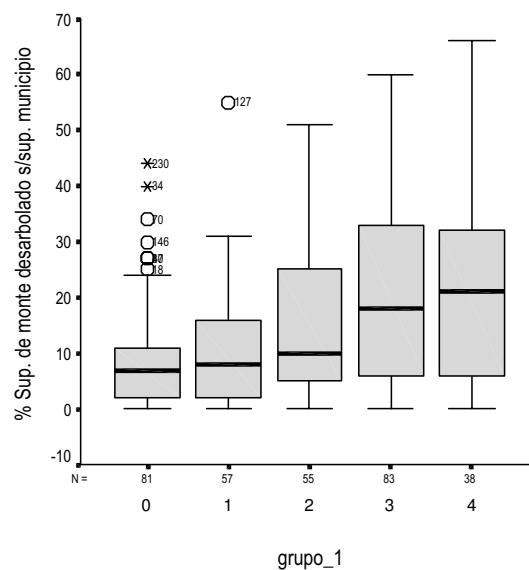


Figure 5. Boxes diagram with the distribution of the variable area of no- wooded land and variable grupo_1 ($Rho = -0.367$)

It is shown that the loss of generational replacement in the local administration of the MVMC has caused that in the last 30 years, the rural depopulation will originate a decline of the investment in the MVMC due to the impossibility of enjoying the forest incomes obtained. This ends in the increase of no- wooded land in those municipalities where the superficial representation of MVMC is bigger, as a result of the neglect of agrarian and livestock activities characteristic of these forestlands. This physical- temporary sequence of the forest use is verified in other regions of the world, where the existent correlation is also appreciated between agrarian lands and the neglect and fragmentation of the wooded forests.

Inversely, if the behavior of the variable wooded forest percentage/ total municipal forestland (with extreme values 21- 100 %) is compared with the variable grupo_1, the existent correlation can be verified again, showing how the increment of the communal land involves a smaller wooded land percentage on the total municipal forestland ($Rho = -0.343$).

We have pointed out at the beginning of this work that Galicia has experienced a strong growth in its productive forestlands. Therefore it is necessary to study in which areas this

type of forestlands are located. So, it has been studied the behavior of the variable percentage of fast-growing wooded land confronted with the grupo_1, grouping in the first variable the areas dedicated to *Pinus pinaster* Ait., *Pinus radiata* (D.) Don., *Eucalyptus globulus* Labill. and *Populus* sp. The values of this variable are located among the 0- 76 % of the municipal area, with an average value for Galicia superior to 35 %. Considering the obtained results (figure 6) we can point that in the councils with smaller proportion of MVMC, the area of the productive wooded land is bigger. As is commented in diverse scientific studies, the individual forest owners tends to be linked directly with productive forestlands, perceiving the forest like an economic source for adverse market situations or when the economic necessities prevail. However, the small- scale forestry is considered as an activity with a scarce or null value in the economic frame of the family farm, like it can be realized by the lack of forest criteria in the individual forest management.

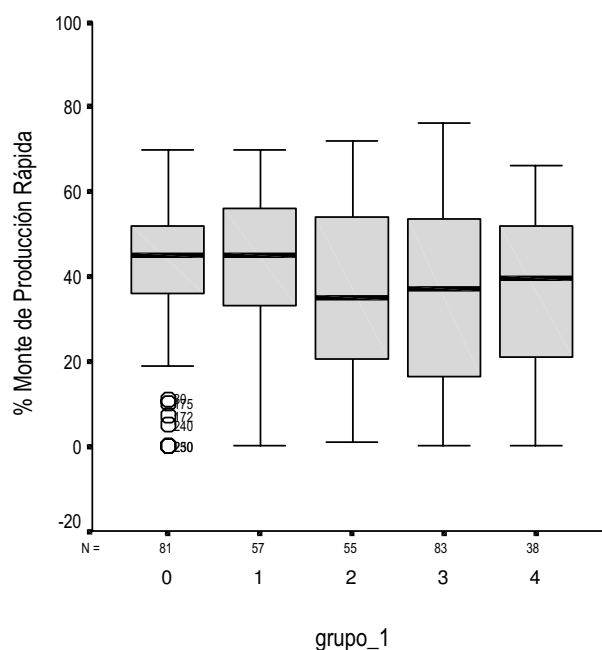


Figure 6. Boxes diagram of the distribution of the variable fast growing wooded land and variable grupo_1 (Rho= -0.156)

Referring to the demographic evolution and their relationship with the forest uses and the land tenure, it is observed that the Galician population in general, and the rural areas in particular, has experienced along the XX century a massive emigration toward the exterior as consequence of the agrarian sector crisis. This phenomena has been the main catalyst of the changes in the Galician territory along this period and it has influenced notably in the fragmentation of the property and in the gradual estrangement of the owners and its heirs of the land. Koch and corroborate the positive correlation between land uses fragmentation and population's density in other rural regions.

The rupture between population and agrarian system caused definitively the evolution of the traditional uses of the forest toward the existent nowadays. In this successive and reiterated process, in which a lot of people abandon the rural areas for the scarce agrarian incomes (MaCdonald et al., 2000), the resident population are usually retired without the necessary capacity to develop new methodologies of economic revitalization.

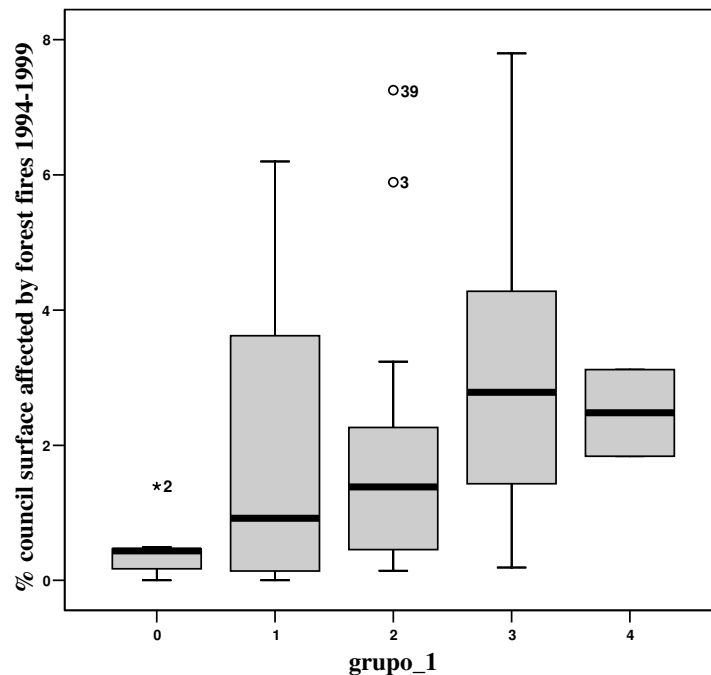


Figure 7. Boxes diagram of the distribution of the distribution of the variable % of the municipality surface affected by fire in 1994-1999 and variable grupo_1 (Rho= -0.431)

The forest fires are one of the most important problems in the rural areas of Galicia, with an especial relevancy in the Spanish context each year. Like in other countries, we can see a tendency of fires in the communal areas, without sustainable management or without any management (sustainable or not).

The mentioned factors, age of the available manpower in the rural areas, the descent in the number of farms, the territorial base and the property fragmentation, are the signs of the structural problems and the delay and inadequacy of the modernizing, formative and investors processes of the forestry in Galicia, as authors like Warkotsch (2000) and Elwood et al. (2003) mention for other regions.

The first results of the analysis of the SIFGa variables show how the variable evolution of population's density between 1960- 2001 and the variable grupo_1 behave. The previous index has descended in the period studied in an average value of 19.01 inhabitants/ km², although the non- existence of correlation between this parameter and the land tenure could be verified (Rho = -0.076).

6. Conclusions

MVMC in Galicia have a long history and tradition, but in the last 40 years great changes in the land uses have taken place, because the crash of the traditional Galician agrarian system and the arising of new land uses. Nowadays, in these areas, the land is underutilized, given the neglect of common farm and livestock activities, and sometimes because the lack of the communities management capability although the great average size of the MVMC with respect to the individual parcels. Some of the most active communities present forest incomes of timber sale, as a consequence of the afforestation realized by the Administration

in 40ths to 60ths with the consortia and in the last 30 years with the convenia. In spite of that, new income sources are starting to be taken in account (quarries, wind power plants, intensive hunting, mushrooms collection, etc.). It is due to the problem of proposing long-term land uses in the MVMC management plans, such as timber use, because of the depopulation of the communities, that makes there will not be any heir for the possible timber incomes (given the fact that in general it is necessary to be neighbour to have land use rights).

Given the fact that the loss of the vicinity involves the end of the use rights, MVMC is considered as an important factor for the rural population fixation, but until now this potential was not profited. In the communities there is a high potential for establishing strategies of participative spatial planning, because the existence of traditional institutions (the Assembly of Comuneros) and a certain culture of communal decision taking (nowadays almost lost).

Those communal forestlands could become important areas to get a territorial balance, because their structural and social characteristics and land use versatility with respect to other land tenure systems. A greater effort to studying MVMC, through more detailed data (at a level of communities, with cartographical and socio-economical studies), and employing different sources (even those less used like the presence in media) seems basic to find the way of increasing the importance of those areas in the development of the Galician rural habitats, and to face the constraints that threat them.

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