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► **To cite this version:**

Pierre Pech. Environmental conservation and the production of new territories: the example of French départements. *GeoJournal*, 2009, 13p. 10.1007/s10708-009-9259-8 . hal-00442842

HAL Id: hal-00442842

<https://paris1.hal.science/hal-00442842>

Submitted on 22 Dec 2009

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Environmental conservation and the production of new territories: the example of French *départements*

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Abstract

Very important initiatives have been taken and policies have been adopted in the European Union to protect areas of great importance for threatened species and habitats. Protected areas differ broadly in terms of category, natural conditions and administrative organisation, from international initiative such as Biosphere Reserves, European ones with Natura 2000 network until the institution of national and regional protected areas. In France, the administrative subdivisions known as “*départements*” were created with the French Revolution in the end of the 18th century; in 1985 an original and autonomous procedure to establish special protected areas, called “Sensitive Natural Spaces” (SNS) was devolved to them. The scope of this paper is to present an overview of these devolved powers which enable French *départements* to create protected areas and to levy a departmental tax on sensitive natural spaces (DTSNS). We statistically studied some parameters by multivariate methods in order to explain the choices of this policy by the *départements*. The huge variations in the way these powers are implemented prove the development of new environmental territories.

Key words

Environment; territory; environmental policy; protected area; French *départements*

Introduction: what is at stake in the protection of the environment in France?

Tools for acquiring the necessary knowledge, data (particularly inventories) and protection instruments have been developed in the European Union to support the implementation of

natural area conservation, management and restoration policies (Jupille and Caporaso 1998; Delreux 2006; Fevrier 2006; Pinton et al. 2007). Integrating biological diversity into all public policies by means of planning instruments is also a key aspect of national environmental protection policy in European countries (Balmford et al. 2002; Pröbstl 2003; Prazan et al. 2005; Delreux 2006; Fevrier 2006). The scope of our paper is to examine how major environmental issues are today very much a part of the decision-making processes concerning land management, and local and urban planning. Through the example of an original French local system of environmental land management, our paper shows that new local environmental conservation policies may be considered as an instrument to support land management and territorial recomposition (Girault 2002; Lajarge 2002; Durousseau 2006). In France, as in many other European countries, urban development is very rapid and threatens rural and natural areas (Vanier 2002). According to the French Environmental institute (IFEN 2002), 65,000 hectares of land become artificial every year because of ex-urbanisation, and also periurbanisation. The development of tourism exacerbates this phenomenon since natural areas are very attractive and thus come under great pressure. In addition, fallow farmland (set-asides) is also expanding. Between 1992 and 2000, useful agricultural land decreased by 1.6% not only because of the CAP (Common Agriculture Policy) but also because of the abandoning of agricultural estates, reforestation and urbanisation. In the face of these changes, all local authorities are trying to find solutions to control and limit the erosion of natural resources and landscapes (Frois 1998; European Commission 2002; IFEN 2002; Merlin 2002; Irwin and Bockstael 2004) and many rules have been introduced to protect the environment, especially in the European Union. Governments and local agencies are working to determine special protected areas (Fevrier 2006; Pinton et al. 2007), while the E.U. is developing new initiatives and policies to conserve areas of great importance for threatened species and habitats. Natura 2000, whose aim is to try to halt biodiversity decline within the European Union, represents a major contribution to global nature conservation and a model for international co-operation on sustainable development. Protected areas differ broadly in terms of category, natural conditions and administrative organisation, and the management of protected areas is a task of very great complexity (Hardt and Walter 1993; Adger et al. 2003). First of all, areas are designated using various protection instruments according to the level of authority which designates the label. At international level, protection instruments include sites that come under the 1971 Ramsar Convention, and Man and Biosphere Reserves under the MAB Programme. At European level, Special Protection Areas (SPAs) are designated under European Community legislation (Directive 79/409/EEC on the conservation of wild birds, known as the Birds Directive, for example). EU legislation on nature protection was reinforced in 1992 with the adoption of Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. This instrument establishes a coherent European ecological network called Natura 2000, which is made up of both Special Areas of Conservation (SACs) to be designated by the Member States under the Directive, and Special Protection Areas (SPAs) designated under the Birds Directive. At country level, (France), there are national protection instruments which include national parks, nature reserves, voluntary nature reserves, national hunting and wild fauna reserves, biotope protection orders and State biological forest reserves managed by the National Forestry Office (ONF). In addition, regional authorities *lato sensu* create and manage regional nature parks. Many legal measures have been introduced to protect the environment and manage natural areas - through different agencies, associations, local communities etc. - and a wide range of environmental protection instruments are used, each with its own specific objectives, constraints and management methods. In France, it is well known that the State has a major role in the protection of the environment, the purpose of which is to conserve the diversity of

species, natural habitats and landscapes, as shown through international biodiversity programmes (Loreau 2000; Myers et al. 2000). In France, national statutory protection is the most important instrument and concerns 2 million hectares. Policies focusing on land acquisition for conservation purposes are implemented by the National Coastal Protection Agency. While the Regional Conservation Agencies for Natural Areas (CREN, in French) may also develop a land acquisition policy, the State still has nevertheless a major role in the scientific recognition of the areas: classification of spaces and species, delimitation of protected areas, etc.; actual management, however, can be at local level. In other words, we can say that environmental protection policy is principally devolved but rarely decentralised. In this context, the departmental policy of sensitive natural spaces (SNS - *Espaces Naturels Sensibles*) is an interesting exception, because the whole procedure is at departmental council level and there are 96 metropolitan *départements* in France (Fig.1). Even if the *département* (level 3 in European nomenclature) is a legacy of the French Revolution, it is a very young local community, which only really came into existence in 1982 with effective political powers when the decentralisation laws were passed; at the same time the “Region” (level 2) appeared.

The aim of this paper is to demonstrate that when the policy of sensitive natural spaces (SNS) was introduced in 1985 (Prieur 2001, 2006), with the decentralisation of sensitive areas management, all the *départements* were given the real means to administer their territory. However, although the means seem to be the same everywhere, in fact the SNS procedure seems to depend very much on the *département* considered and vary considerably, proof, surely, that the *départements* are active. The question, therefore, is to examine the political and social significance of this recent shift and the efficiency of such territorial regulation.

Methods used for this study

Around 10 years ago, much legal research was done on SNS, especially by the French researchers of a Limoges laboratory, CRIDEAU (Lenclos 1997; Périnet-Marquet 1997; Prieur 1997), but also by M. Prats and P. Rimkine (1997) and the IDEAL network (1992). A recent survey produced by the Limoges laboratory in 2006 (Billet 2006; Bouin 2006; Delivre-Gilg 2006; Durousseau 2006; Drobenko 2006; Fevrier 2006; Prieur 2006) completes this work. Our contribution focuses on the great spatial heterogeneity between the different *départements*, thanks not only to this earlier work but also to information from two additional sources. The first, from the French environment institute (IFEN 2002) contains data concerning all the French departmental councils. The second comes from a survey we sent out to all 96 *départements*, 71 of which, i.e. 74%, answered (Table 1), which shows that the different *départements* are interested in this kind of analysis. This survey asked whether or not a Departmental Tax on Sensitive Natural Spaces (DTSNS) was levied; if so, at what rate; the rate, the kinds of environment considered as SNS (Table 1); and the kinds of policies implemented (Table 2) using the revenue raised by this tax. Our statistical analysis is supported by data concerning the 96 *départements*.

Classical and univariate statistical approaches (Table 3) were used, followed by a multivariate analysis to determine the impact of variables on choices made by the *départements*. We used Pearson Correlation Coefficients with p-values that indicate the error probability (Table 4). In this probabilistic approach we adopted a 5% significance rate, above which the relation between two variables is assumed to be inexistent. We also used Principal Component Analysis (PCA), a statistical analysis. PCA uses multi-variation patterns with the population of *départements* and quantitative variables (Locantore et al. 2004; Tran et al. 2004). With PCA, only quantitative values are used. We studied 12 variables for the 96 *départements*. The purpose of the statistical survey is to explain these two variables, SNS and DTSNS, according to 12 parameters:

- area in km²
- population in thousands of inhabitants
- density in number of inhabitants per km²
- “RRP”, the rate of rural population calculated for each *département* with the demographic proportion of communes having less than 2000 inhabitants in comparison with the whole population of the *département*
- “RUP”, the rate of urban population for each *département*, calculated using the *communautés d’agglomération*, created in 1999 and regrouping more than 50,000 inhabitants with communes structured around one urban unit bigger than 15,000 inhabitants (Vanier 2002).
- “U.R.”, the unemployment rate
- “CAha”, the area of cultivated areas in hectares: this notion is normalised in the statistical references for agriculture of the E.U. but we converted it into km²
- “PSNLog”, the shift in the number of housing units created between 1980 and 2004, as a percentage

We also integrated data concerning the influence of politics, using the results of the 2002 French presidential election, which we subdivided into percentages of votes for four categories:

- extreme right
- right
- left
- ecologists

Each parameter contains a quantity of information and is a more or less important factor. Using PCA transforms initial data into new dimensions that can be compared: data is converted into vectors which can be studied as a succession of plans whose statistical dispersion may be represented along the axes and whose structure is organized around one center. The information is represented on a succession of axes but the result is summarized on a table (Table 5). PCA may be efficiently applied because it produces comprehensive indicator parameters for important causal backgrounds.

In order to explain this original management policy, it is first necessary to understand the stakes of French policy concerning SNS and then to look at the rules and regulations that have

been adopted. Once this has been done it is necessary to identify and document the variations in the way this policy has actually been implemented. Finally, the statistical results of the study need to be examined.

Presentation of the Sensitive Natural Spaces and related tax rules

What are sensitive natural spaces (SNS)?

In 1985, the French *départements* were given the task of listing and managing what are known as “sensitive natural spaces”. This became one of the most important decentralised decision-making powers, because in such a centralised country as France, these territorial communities now have to manage an environmentalist policy from start to finish (Morand-Deville 1996; Durosseau 2006; Prieur 2001, 2006), from defining the geographical areas to creating the tools for the protection of these natural spaces. It is thus obvious that these SNS include a wide range of forms, structures and geographical characteristics, which have considerable impact on management of the natural environment, as already seen (Billet 2006). Nevertheless, there are a certain number of common principles, which make it possible to draw up a definition which would fit every situation. In the French “Urbanism Code”, the sensitive natural spaces are defined in article L142-1: “In order to preserve the quality of the sites, the landscape and the natural environments, [...] the *départements* have jurisdiction to draw up and to implement a policy of protection, to manage the sensitive natural spaces, be they woods or not, and to open them up to the public”. The report established by M. Prats and P. Rimkine in 1997 on the evolution of the sensitive natural spaces policy introduced by the *départements* shows the different types of areas concerned. Policy always concerns a kind of rural area which is neither built-up nor used for agriculture and is considered to be sensitive because of anthropic pressure, the so-called third space (Soja 1996; Vanier 2002; Vanier 2003). It may be a remarkable site characterised by the presence of rare species or an area marked by the history or the heritage of a region. The sensitive natural spaces are fragile environments (coastlines, pools, ponds, river banks, woods, forests, etc.), forestry areas, agricultural sites or even hiking trails. For agriculture, SNS are not concerned when crops or plants are grown, but the procedure is appropriate for breeding areas, especially extensive grasslands.

The SNS procedure

The procedure to define an SNS, which depends entirely on the departmental council, is twofold: firstly, pre-emption areas, i.e. where the local authority has first option, have to be defined (Perinet-Marquet 1997; Drobenko 2006) and, secondly, decisions have to be taken as to whether or not the *département* should levy a Departmental Tax on Sensitive Natural Spaces, the so-called DTSNS (Lenclos 1997; Delivre-Gilg 2006). The aim is therefore to define such areas, i.e. create territories, and also to make money in order to invest in the protection of natural environments (Irwin and Bockstael 2004; Delivre-Gilg 2006). In this way, the policy corresponds to what J. Ruegg calls the territorial management of the environment (1997) or to a kind of “physical planning”. With the decentralisation of SNS management (Morand-Deville 1996), the *départements* have been given tools for the protection of their natural areas (Durosseau 2006; Prieur 1997, 2006).

The departmental council can determine areas over which they can exercise their pre-emptive right (Drobenko 2006), after acceptance by the town council, for those councils that have a local town plan (*PLU* in French). Otherwise, the pre-emption area is created in agreement with the prefect. According to J. Morand-Deville (1996), the goal of the pre-emptive right is the “protection of the environment, and not town and country planning”. Nevertheless, A. Poli-Broc (2003) notes that the SNS policy “has to be compatible with the plans for territorial

coherence and with the general directives of regional and urban development”. In 1996, J. Morand-Deville considered that the procedure introduced in 1985 was decentralised, that is to say that the effects of this protection system have been extended in scope (Drobenko 2006). The pre-emptive right is used to control the use of land, and property owners are therefore required to inform the departmental council before selling their estates. Defining a pre-emptive area does not automatically end with the acquisition of the land by the departmental council; it gives the *département* a certain freedom of action over the land in question and, what is more, in many cases it makes negotiations easier when the *département* has decided to buy.

The Departmental Tax on Sensitive Natural Spaces (DTSNS)

The DTSNS was also created by article L142-2 of the “Urbanism Code” and is levied after a decision of the departmental council on new housing units and building improvements. It concerns buildings, renovations and extensions, different installations and civil engineering works on all buildings except farm buildings, public buildings and ancient monuments (Poli-Broc 2003; Delivre-Gilg 2006). The DTSNS varies from zero to 2% of the price of building work and some *départements* have decided not to introduce it (Fig.2). The DTSNS was set up by law n°85-729 of the 18th July 1985 but the *départements* are totally free to levy it or not and to link it to planning permission. In fact, the situation is very different from one *département* to another. According to M. Prieur (1997), SNS policy is both a tax tool and a territorial tool, the aim of which is to protect the environment, since Article L.142-2 states that it is used for “the establishment of a sensitive natural spaces policy so that they can be protected, managed and opened up to the public” (Lenclos 1997). The money raised by this tax can be used in three ways: for the acquisition of land, footpaths, riverside paths and banks; the planning and the upkeep of spaces, whether they are woods or not, of paths and of natural environments, whether they belong to the *département* or not; subsidies to other communities or associations for the acquisition of estates or the upkeep of natural environments. This shows the growing power of the *département* over its territory. If we look at the geographical distribution of the DTSNS (Fig. 2) and its uses (Table 2), we see how varied this is.

Results: a very contrasted geographical distribution of the SNS and of the DTSNS

Different definitions of SNS

As we have already seen, theoretically SNS are natural areas, i.e. forests, woods, river banks, wetlands, alpine grasslands, etc. or agricultural lands protected by the *département* (Poli-Broc 2003). The results of the survey carried out for this study show the importance of natural areas (Table 1): Forests (60.8%), rivers and riverbanks (52.7%), grasslands (46%) rocks (40.5%) are the most frequently classified as SNS. However, the legislation is flexible and each *département* is allowed to give its own definition of sensitive natural spaces, with respect to the local environment and stakes, as argued by Billet (2006) and Dourousseau (2006). Therefore, the way SNS are used is extremely varied (Bouin 2006; Dourousseau 2006). For instance, in the Yvelines *département*, one of the most urbanised *départements* around Paris, an agricultural area would be considered as a sensitive natural space in order to stop the uncontrolled spread of urbanisation over the whole territory, whereas a rural *département* would want to renew and develop farming activities. Some *départements* have decided to use the SNS procedure in order to open natural or “green” areas within the urban landscape (IFEN 2002). This is notably the case for the Paris region, and the Val-de-Marne *département*, for example, is developing a policy to protect the Marne river banks using the SNS procedure, even though they are fully integrated in the urban area. However, we ought to take in

consideration the role of the socio-political make-up of metropolitan areas, where the ecologist lobby plays an important role in political decision-making, including the management of so-called “third spaces” (Soja 1996; Vanier 2003). In other places, such as in the northern Pas-de-Calais *département* or in several southern *départements*, some urban fallowlands have been classified as SNS in order to redevelop them differently and thus enhance their value. Other *départements* are using this procedure in order to protect and to manage the expanding flood fields.

It is reasonable to assume that the definition of SNS is related to the essential aims of land management, which each local government is free to decide. In densely populated areas, be they urban and/or touristic, SNS are defined restrictively and the DTSNS is more often levied. In rural areas, wider definitions can occur.

Different uses of DTSNS

Through quantitative and classical statistical analysis of the data, it is possible to cross the DTSNS with demographic and socio-economic parameters. With a mean population of 621,200,00 inhabitants living in a 5666.25 km² area (Table 3), the mean rate and the mean value of DTSNS of the French *départements* are of 0.69% and 7,953,181.75€ respectively. Most of the *départements* are rural, with a mean agricultural area of 290,169.93 ha (around 2901.70 km²), reflected in the very high number of small communes in France. The mean percentage of unemployment is 9.45% (2007) and the increase in number of new housing units is 10.28%. If we compare the parameters (Table 3) we see an unequal distribution of the DTSNS in particular, because there are huge variations in standard deviation values. In order to explain this heterogeneity we studied the Pearson Correlation Coefficients (Table 4) but, given the purpose of our study, and also the heterogeneity of rates and values of the DTSNS, the correlation between variables is moderate and, in fact, essentially around 0.6. It is clear that good correlations occur between DTSNS rate and value, and the size of population (0.64), the urban population (0.26) and the increase in number of housing units built:

- 0.32 between rate and increase in number of housing units

- 0.38 between value of the TDSNS and increase in number of housing units

A more original observation is the correlation between TDSNS rates and values, on the one side, and votes for the left and the ecologists in the 2002 presidential elections and unemployment percentages, on the other. It seems quite clear that political factors are important. Introducing the DTSNS may be seen as a tool used by left-wing and ecologists local government in order to develop infrastructures and help for local employment and create jobs involving the environment.

Using the multivariate analysis, PCA, we obtained results concerning the axis for which variables have very high correlations, usually more than 0.5. Three axes alone contain 70% of the information (Table 5).

High rates and values of TDSNS can be related to the *départements* which have the biggest population and a high density. With the second axis, we observe a very high correlation with the increase in the number of new housing units. With the third axis, the politics influences are determinant.

In 1997 (IFEN 2002), only two *départements* out of three had decided to levy the DTSNS: in 2003 this percentage had risen to 72%. First of all, some coastal *départements* are noticeable because of the pressure exercised by property owners and tourists. But there is also a clear difference between the urban *départements*, where the levy can be high (except for Paris) and the rural ones, where the rate is lower. This is due to the socio-political make-up of the area. The role of both the rural-agricultural lobby and the urban ecologist one in political decision-

making is very important. The rural lobby is made up of farmers' and crafters' unions and chambers, and the "Hunters' and Fishermen's Party" which may well have a large following in some rural areas. This lobby is frequently involved in environmental conflicts and controversies and fights against ecological regulations and practices. This political clout needs to be considered when interpreting the contrast between department practices related to the SNS. The geographical distribution of DTSNS rates and totals is shown in figures 2 and 3. Some *départements* where the rate is low have nevertheless raised large sums (Loire-Atlantique), which proves that the building sector is very dynamic. Other *départements* (Meurthe-et-Moselle, Ardèche, Haute-Vienne), however, which are more rural or stagnating, have raised limited amounts despite a high DTSNS. Rural *départements*, where the building and public works sectors are weak, are characterised by low tax revenues. However, it is understandable that the *départements* which are not really under pressure are less keen to introduce a tax which will be paid by those who create activity. For example, the Creuse *département*, one of the most deserted departments in France, decided to abolish its DTSNS on January 1st 1996. This tax can therefore be considered as a bonus for rich *départements* which build a lot. The pressures caused by urbanisation require some measures to protect natural environments in the most urbanised *départements* or in those where natural heritage is threatened by tourist accommodation, campsites or other leisure infrastructures.

Conclusion: SNS and DTSNS as tools for a better spatial dynamics at the *département* level

SNS and DTSNS: tools for environmental management of the territory

As far as protection is concerned, the SNS are another form of classification (Romi 1998; Lajarge 2002) in the panel of other territorial labels. Even if they do not automatically lead to the DTSNS tax, many *départements* (about 72%) are using this procedure not only in order to protect natural environments, but also to mark out their territory. The *départements* can decide not to define any SNS (north-east of France or Paris), but they can also classify the whole of their territory, as did the eastern Doubs *département*, which would have liked just to remove the urbanised or urbanising areas (classified as U and NA-zones in local urban planning) from the SNS (Périnet-Marquet 1997). Even though it was not possible, it shows the desire of *départements* to use the procedure in order to control their territory.

Some *départements* have classified areas which were already protected by another inventory or procedure. They have also published guides to confirm the vocation of SNS in developing tourism. The southern Alpes-Maritimes *département* calls them "departmental natural parks" and in Bouches-du-Rhône they are called "departmental domains". These parks are laid out to attract the public, thanks to beautiful landscapes or restored buildings such as the Cistercian abbey of Gemnos, near Marseilles. Even if the law does not explicitly say that the tax revenues can be used to help finance nature-awareness centres and nature trails, some *départements*, such as Côtes-d'Armor in Brittany (Sureau, 2002), have decided to introduce this idea in order to educate people about the environment.

Thanks to the SNS, the President of the departmental council can control the use of the land. According to M. Prieur, it is a kind of local town planning (1997). In Haute-Vienne, Puy-de-Dôme, Pyrénées-Orientales, Meuse and Meurthe-et-Moselle, SNS classification is a tool to protect threatened natural environments. Some *départements* do not really use the potential this procedure offers, because protection policies can be introduced at regional level, in Alsace, for example, which acquires and manages natural areas through a "conservatory for Alsatian sites".

So the action and the degree of autonomy of the departmental councils depend on their geographical location, on the quality of their natural areas and, more importantly, on the

political will to protect and develop these sites. For some *départements*, what is at stake is the definition of their real place and role in the dynamics of the different local communities and territories. As shown by J. Fall (2004), the issue is to construct boundaries for protected areas, creating 'natural' spaces in line with public policy requirements. Scientists, however, have not only analysed the question in terms of nature, as defined in the public policies of most major urban regions, but also this "third space" (Soja 1996; Vanier 2003).

SNS and DTSNS: tools to create property and to restore the départements' territorial legitimacy

The general principle of the SNS policy cannot be reduced to simple measures to protect the ecosystem. On the contrary, it can be considered as an original form of territorial management, with the dual aims of ecological development and public enjoyment. Thanks to the DTSNS, the *départements* have real power to control property with respect to natural areas. As shown by the data in Table 2, extrapolated from interviews with local stakeholders, the tax provides the financial means necessary to implement their policy of protection and, above all, it enables them to acquire property whereas, up until 1985, only the State and the local councils were allowed to be landowners (Drobenko 2006).

So, SNS seem to be as efficient as they are original in the protection of the environment because the *départements* can raise high tax revenues, which are uniquely used to acquire, lay-out and manage natural and sensitive areas and open them to the public. This procedure is a form of sustainable protection and management of the land and can be considered as a good tool for land management (Fisch et al. 2003; Drobenko 2006; Durousseau 2006) and rural and local development. It could thus be a kind of territorial innovation model (Moulaert and Sekia 2003). It is also a means of economic development, especially for rural regions which are often in difficulty. For 60.8% of the *départements* (Table 2), much of the revenue from the DTSNS is used to subsidise municipalities, associations or public establishments for their initiatives in protecting the environment or encouraging local development. SNS policy can also contribute to a smooth redistribution of the population by making villages more attractive to tourists, and also by encouraging urban dwellers who wish to move to the country, so-called "neo-country people". The rehabilitation of natural environments, the introduction of a "nature-awareness centre" or even the employment of people for the upkeep of open spaces, footpaths or riverbanks are undeniably initiatives that can play in favour of local development and employment. This is also a kind of use of the value of ecosystem services (Cheshire and Sheppard 1995; Irwin and Bockstael 2004), which is known as territorial rent (Freeman 1993; Costanza et al. 1997; Geoghegan et al. 1997; Bastian et al. 2002). The evolution of SNS policy prefigures the shift of territorial management towards governance (Commission of the European Communities 2001; Hergenthan 2001; Adger et al. 2003; Delreux 2006) for two reasons: firstly because as shown and used in the Natura 2000 network, the rule in ecological management is now to introduce territorial development, in economic, social and political terms; and secondly because, as said by J.Hergenthan (2001), "the concept of *governance* goes beyond that of traditional *government*, in particular since it involves non-governmental players (such as "civil society") and Sub-State entities (local authorities, cities and municipalities, etc.)". This shift is well observed by D. P. Calleo (2001) who says that Europe is going to be "a genuinely new political form" and "should become an efficacious example of variable geometry on a global scale". What holds for Europe as a whole can be applied to local organisation where we may see the development of new relations between the citizens and their environment and as a consequence new relations between the citizens themselves. Changes in the use of DTSNS in France show that the SNS policy is at a transition stage between the period when the departmental council took all decisions before anything could be done and the period where the first step has to come from local initiatives. The *département*

can, however, organise management and partnerships between municipalities and other local authorities thanks to the broad vision it has of its whole territory (Durousseau 2006). Moreover, in the mostly rural *départements* the departmental council is the richest community, in terms of budget, so it plays an undeniable role in decision-making concerning development and planning. The definition of areas considered to be sensitive and in need of measures of protection, coupled with the possibility of acquiring part of the territory, gives the *départements* the basis of a new legitimacy. Here, an environmentalist policy is a source of a kind of territoriality. That is why geographers can say that SNS plays a role in the production of space. The projects which aim to abolish *départements* (Laurent 2002) are thus compromised by the environment. As in 1789-1790, during the French revolution when they were created (Ozouf-Marinier 1986), the *départements* are safe and protected thanks to the environment: “the competencies acquired by the *département* are limited, but also essential for society” (Piercy 1997). Given that today the social question is protection of the environment (Bockstael and Irwin 2000), there is a spatial metamorphosis of an old administrative subdivision into a new environmental territory, the plurality of which allows the recognition of diversities and differences (Lajarge 2002; Bussi and Badariotti 2004; Offner 2006).

Acknowledgements

We would like to thank Rosalind Greenstein, Senior lecturer in English, Université Paris 1 Panthéon-Sorbonne, for her contribution and Professor Marie Cottrel, Professor of Mathematics, University Paris 1 Panthéon-Sorbonne, for very useful assistance in statistical analysis.

References

- Adger, W.N., Brown, K., Fairbrass, J., Jordan, A., Paavola, J., Rosendo, S., Seyfang, G. (2003). Governance for sustainability: towards a “thick” analysis of environmental decision-making. *Environment and Planning A*, 35:1095-1110
- Balmford, A., Bruner, A., Cooper, P., Costanza, R., Farber, S., Green, R., Jenkins, M., Jefferiss, P., Jessamy, V., Madden, J., Munro, K., Myers, N., Naeem, S., Paavola, J., Rayment, M., Rosendo, S., Roughgarden, J., Trumper, K., Turner, R. (2002). Economic reasons for conserving wild nature. *Science*, 297(5583): 950-953
- Bastian, C.T., McLeod, D.M., Germino, M.J., Reiners, W.A., Blasco, B.J. (2002). Environmental Amenities and Agricultural Land Values: A Hedonic Model Using Geographic Information Systems Data. *Ecological Economics*, 40(3): 337-349.
- Billet, P. (2006). La place des espaces naturels sensibles dans le droit de la protection des espaces naturels. *Revue Juridique de l’Environnement*, 2: 153-162
- Bockstael, N.E., & Irwin, E.G. (2000). Economics and Land Use-Environment Link. In: T. Tietenberg & H. Folmer, eds. *International Yearbook of Environmental and Resource Economics 2000/2001*. (pp. 9-37) Cheltenham, UK: Edward Elgar
- Bouin, F. (2006). Les conditions d’ouverture au public dans les espaces naturels. *Revue Juridique de l’Environnement*, 2: 171-176
- Bussi, M., & Badariotti, D. (2004). Pour une nouvelle géographie du politique. *Territoire-Démocratie-Elections*. Paris: Anthropos, 301p.
- Calleo, D.P. (2001). *Rethinking Europe’s future*. Princeton: Princeton University Press, 283p.

- Cheshire, P., and Sheppard, S. (1995). On the Price of Land and the Value of Amenities. *Economica*, 6:247-67
- Commission of the European Communities (2001). European Governance. A white paper. 25.07.2001.COM (2001) 428 final, Brussels: Office for Official Publications of the European Communities, 35p.
- Costanza, R., D'Arge, R., De Groot, R., Farber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R., Paruelo, J., Raskin, R., Sutton, P., Van Den Belt, M. (1997). The value of the world's ecosystem services and natural capital. *Nature*, 387: 253-260
- Delivre-Gilg, C. (2006). La taxe départementale des espaces naturels sensibles. *Revue Juridique d'Environnement*, 2: 139-152
- Delreux, T. (2006). The European Union in international environmental negotiations: a legal perspective on the internal decision-making process. *International Environmental Agreements*, 6: 231-248, doi: 10.1007/s10784-006-9015-1
- Drobenko, B. (2006). Le droit de préemption des espaces naturels sensibles comme technique de maîtrise foncière environnementale. *Revue Juridique de l'Environnement*, 2: 125-138
- Durousseau, M. (2006). Quelle gouvernance pour les espaces naturels sensibles des départements ? *Revue Juridique de l'Environnement*, 2: 177-184
- EUROPEAN COMMISSION (2002). A European Union strategy for sustainable development – COM (2001) 264 final. Luxembourg: Office for Official Publications of the European Communities, 72p.
- Fall, J. (2004). Divide and rule: constructing human boundaries in 'boundless nature'. *GeoJournal*, 58: 243-251
- Fevrier, J.M. (2006). Les espaces naturels sensibles des départements et la gestion des sites Natura 2000, *Revue Juridique de l'Environnement*, 2: 171-176
- Fisch, R., Seymour, S., Watkins, C. (2003). Conserving English landscapes: land managers and agri-environmental policy. *Environment and Planning A*, vol.35:19-41
- Folmer H., & Tietenberg T., (Eds.) (2000). *The International Yearbook of Environmental And Resource Economics*, Cheltenham: Edward Elgar, 328p.
- Freeman, A.M. (1993). *The measurement of environmental and resource values*. Washington, D.C., Resources for the future.
- Frois, P. (1998). *Développement durable dans l'Union Européenne*. Paris : L'Harmattan, 185p.
- Geoghegan, J., Wainger, L.A., Bockstael, N.E. (1997). Spatial Landscape Indices in a Hedonic Framework: An Ecological Economics Analysis Using GIS. *Ecological Economics*, 23(3): 251-264
- Girault, F. (2002). L'exception territoriale française sous influence européenne ? *L'Information Géographique*, 2: 133-161
- Hardt, L., & Walter, R. (1993). *Das Europa der Regionen*. Werk und Zeit, Frankfurt/Main, 34-39
- Hergenhan, J. (2001). Governance in the European Union after Nice. *Eurocities*, 13: 4p.
- IFEN (2002). *L'environnement en France*. Paris : Institut Français de l'Environnement, La Découverte, 606p.
- Irwin, E.G., and Bockstael, N.E. (2004). Land Use Externalities, Open Space Preservation, and Urban Sprawl. *Regional Science and Urban Economics*, 34:705-25
- Jupille, J., & Caporaso, J. (1998). States, agency, and rules: The European Union in global environmental politics. In C. Rhodes (Ed.), *The European Union in the world community*. (pp.213-229) London: Lynne Rienner Publishers
- Laurent, L. (2002). *La fin des départements*. Rennes : Presses de l'Université de Rennes, 151p.

- Lajarge, R. (2002). Territoires au pluriel : projets et acteurs en recomposition. *L'Information Géographique*, 2: 113-132.
- Lenclos, J.L. (1997). La taxe départementale des espaces naturels sensibles. *Revue Juridique de l'Environnement* 2: 189-198.
- Locantore, N.W., Tran, L.T., O'Neill, R.V., McKinnis, P.W., Smith, E.R. & O'Connell, R.V. (2004). An overview of data integration methods for regional assessment. *Environmental Monitoring Assessment*, 94: 249-261.
- Loreau, M. (2000). Biodiversity and ecosystem functioning: recent theoretical advances. *Oikos*, 91: 3-17.
- Merlin, P. (2002). *L'aménagement du territoire*. Paris : Presses Universitaires de France, 448p.
- Morand-Deville, J. (1996). *Droit de l'environnement*. Paris: ESTEM, 194p.
- Moulaert, F., & Sekia, F. (2003). Territorial Innovation Models: A Critical Survey. *Regional Studies*, 37(3): 289-302.
- Myers, N., Mittermeier, R.A., Mittermeier, C.G., Da Fonseca, G.A.B., Kent, J. (2000). Biodiversity hotspots for conservation priorities. *Nature*, 403: 853-858
- Offner, J.-M. (2006). Les territoires de l'action publique locale. *Revue Française de Sciences Politiques*, 56(1): 27-48
- Périnet-Marquet, H. (1997). Le droit de préemption dans les espaces naturels sensibles. *Revue Juridique de l'Environnement*, 2: 173-182
- Piercy, P. (1997). *La France, le fait régional*. Paris : Hachette, 287p.
- Pinton, F., Alphandery, P., Billaud, J.-P., Deverre, C., Fortier, A. (2007). *La construction du réseau Natura 2000 en France*. Paris : La Documentation Française IFB, 254p.
- Poli-Broc, A. (2003). *Guide pratique du droit de l'environnement*. Paris : Berger-Levrault, 328p.
- Pratts, M., & Rimkine, P. (1997). *Évaluation des politiques des espaces naturels sensibles menés par les départements*. Paris: unpublished report, 80p.
- Prazan, J., Ratering, T., Krupalova, V. (2005). The evolution of nature conservation policy in the Czech Republic—challenges of Europeanization in the White Carpathians Protected Landscape Area. *Land Use Policy*, 22(3): 235-243.
- Prieur, M. (1997). Les mesures complémentaires de protection des espaces naturels sensibles. *Revue Juridique de l'Environnement*, 2: 183-187.
- Prieur, M. (2001). *Droit de l'environnement*. Paris: Dalloz, 775p.
- Prieur M., (2006). Quel avenir pour les espaces naturels sensibles ? *Revue Juridique de l'Environnement*, 2: 185-192.
- Pröbstl, U. (2003). NATURA 2000 – The influence of the European directives on the development of nature-based sport and outdoor recreation in mountain areas. *Journal for Nature Conservation*, 11(4): 340-345
- Romi, R. (1998). *Les collectivités locales et l'environnement*. Paris : LGDJ, 149p.
- Ruegg, J., (1997). Dans quelle mesure le management territorial peut-il contribuer à la gestion de l'environnement ? *Revue de Géographie Alpine*, 2: 145-156
- Soja, E. (1996). *Thirdspace: Journeys to Los Angeles and other Real-and-imagined Places*. Malden: Blackwell Publishers, 334p.
- Sureau, C. (2002). *Espaces naturels sensibles des Côtes-d'Armor, bilan et enjeux d'une politique départementale*. Paris: Master thesis, Université Paris 8-IFU, unpublished, 174p.
- Tran, L.T., Knight, C.G., O'Neill, R.V., Smith, E.R. (2004). Integrated environmental assessment of the mid-Atlantic region with analytical network process. *Environmental Monitoring Assessment*, 94: 263-277
- Vanier, M. (2002). *Recomposition territoriale*. *L'Information Géographique*, 2: 99-112

Vanier, M. (2003). Le périurbain à l'heure du crapaud buffle : tiers espace de la nature, nature du tiers espace. *Revue de Géographie Alpine*, 4 : 79-89

Figures caption:

Figure 1: Map of the French *départements*

Figure 2: Geographical distribution of the rates of DTSNS

Figure 3: Geographical distribution of revenues raised by the DTSNS

Tables caption:

Table 1: Types of environments concerned by the SNS procedure, extrapolated from interviews sent to stakeholders (71 respondents out of 96 *départements* of France)

Table 2: Types of investments made using DTSNS (71 *départements*)

Table 3: Univariate statistics data.

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Table 5: Table with component loadings (A²: Area in km²; Pop: Population in thousand; Dkm²: Density in number of inhab./km²; PRP: Percentage of Rural Population; PUP: Percentage of Urban Population; UR: Unemployment Rate; CA²: Cultivated Area in km²; Log-S: Lodgements shift; ER: Extreme Right; R: Right; EC: Ecologists; L: Left)

Table 1: Types of environments concerned by the SNS procedure, studied from the respondents of questions done by interviews sent to stakeholders (71 respondents on 96 *départements* of France)

Types of environments concerned by SNS procedure	Percentage/71 possibilities
Industrial or urban fallowlands, urban gardens	06.75%
Marshes, wetlands, peat bogs	62.00%
Forests	60.80%
Rivers, river banks	52.70%
Coastal areas	29.70%
Grasslands, alpine grasslands, heaths	46.00%
Rocks, quarries, geological site	40.50%
Caves	04.00%

Table 2: Types of investments made using with DTSNS (71 *départements*)

Types of investments	Percentages on 71 <i>départements</i>
Agricultural land, arboretums	06.75%
Acquisition of lands	58.10%
Rehabilitation of hiking trails	54.00%
Buildings, nature-awareness centres	15.50%
Protection of a natural environment	67.60%
Subsidies for municipalities, associations, etc.	60.80%
Maintenance	29.70%
Viewpoints, nature trails	06.75%
Rehabilitation of old buildings	28.30%
Surveys	08.10%

Table 3: Univaried statistics data.

Variables	Minimum	Maximum	Mean Values	Standard Deviation
Rate	0.00	2	0.69	0.58
Value in €	0.00	39,533,972.26	7,953,181.75	10,056,010.53
Area km ²	105.00	10000.00	5666.25	1913.74
Population in 1000	74.23	2561.80	621.2	472.08
Density number of inhab./km ²	14.37	20450.00	527.85	2338.43
Percentage of Rural Population	0.00	72.34	35.17	16.70
Percentage of Urban Population	0.00	100.00	16.21	16.64
Unemployment Rate	5.80	14.70	9.45	1.87
Agricultural Area km ²	0.00	5590.62	2901.7	1458.16
Logarithmic Growth	-0.20	23.02	10.38	4.86
Extreme Right	0.10	0.30	0.19	0.05
Right	0.27	0.51	0.38	0.05
Ecologist	0.06	0.14	0.10	0.02
Left	0.25	0.42	0.32	0.04

Table 4: Pearson Correlation Coefficients with p-values. (Rate: Rate of DTSNS; Vin€: Value in €; A²: Aea in km²; Pop: Population in thousand; Dkm²: Density in number of inhab./km²; PRP: Percentage of Rural Population; PUP: Percentage of Urban Population; UR: Unemployment Rate; CA²: Cultivated Area in km²; Log-S: Lodgements shift; ER: Extreme Right; R: Right; EC: Ecologists; L: Left)

Pearson Correlation Coefficients N = 96 Prob > r under H0: Rh0 = 0														
	Rate	Vin€	A ²	Pop	Dkm ²	PRP	PUP	UR	CA ²	Log-S	ER	R	EC	L
Rate Student	1.000	0.65886 <0001	-0.23326 0.0222	0.27364 0.0070	0.03801 0.7131	-0.49372 <0001	0.11481 0.2653	0.21238 0.0373	-21963 0.0315	0.31643 0.0017	-0.05879 0.5694	-0.11740 0.2546	-0.32544 0.0012	0.35910 0.0003
Vin€ Student	0.65886 <0001	1.000	-0.08669 0.4010	0.63780 <0001	0.00048 0.9963	-0.64851 <0001	0.26493 0.0091	0.27647 0.0064	-0.22517 0.0274	0.37740 0.0002	0.09675 0.3484	-0.11980 0.2450	-0.28346 0.0051	0.13779 0.1806

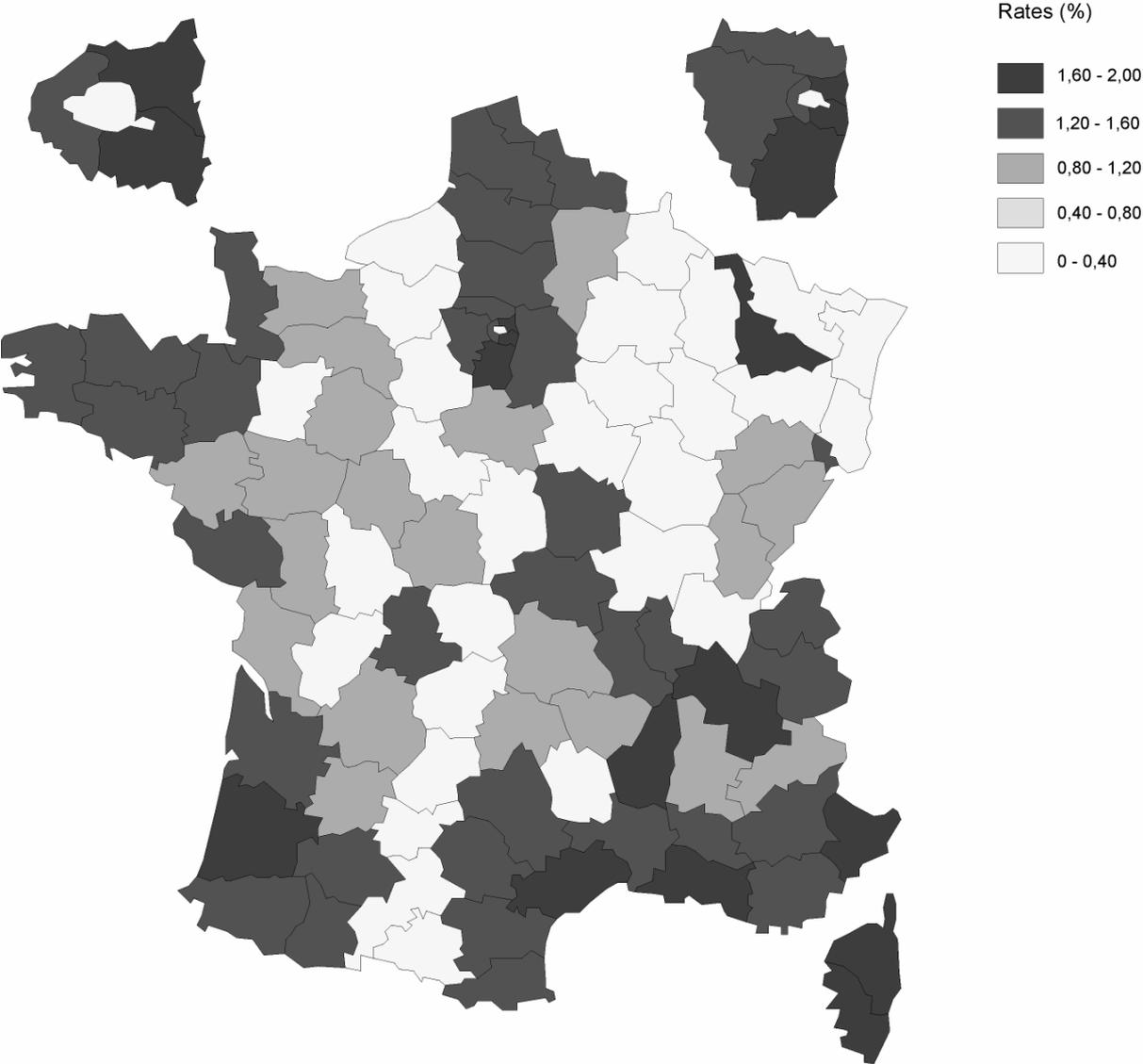
Table5: Table with component loadings (A²: Area in km²; Pop: Population in thousand; Dkm²: Density in number of inhab./km²; PRP: Percentage of Rural Population; PUP: Percentage of Urban Population; UR: Unemployment Rate; CA²: Cultivated Area in km²; Log-S: Lodgements shift; ER: Extreme Right; R: Right; EC: Ecologists; L: Left)

Components	Axis 1	Axis 2	Axis 3
A ²	-1.15	0.85	0.28
Pop	1.59	0.25	0.36
Dkm ²	1.18	-0.78	0.18
PRP	-1.89	-0.15	-0.11
PUP	1.33	-0.03	0.48
UR	0.91	0.16	0.27
CA ²	-1.09	0.57	0.07
Log-S	0.65	0.67	-0.64
ER	-0.03	0.00	-0.12
R	-0.01	0.00	-0.30
L	0.03	0.00	0.45
EC	0.01	0.00	0.29

Figure 1: Map of the French *départements*

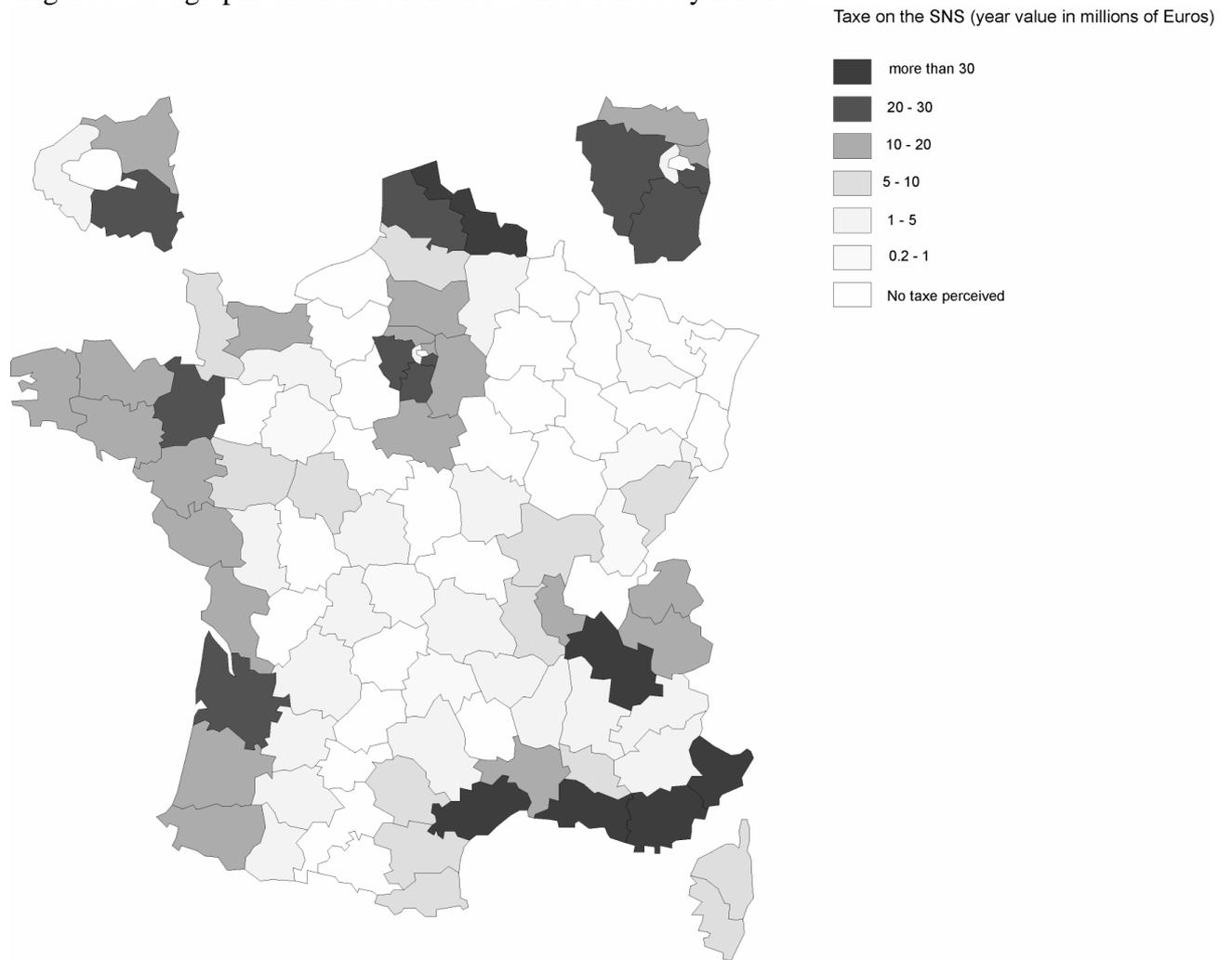


Figure 2: Geographical distribution of the rates of DTSNS



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Figure 3: Geographical distribution of revenues raised by DTSNS



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