

## Cadastre in Europe. Actions to improve the situation of the Cadastre among the accession countries

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The decision to join a supra-national organisation with the peculiarities of the European Union, whose organisation and operation are based on Treaties and on rulings that have the force of law in its member States, implies a profound revision and reform of the country's own legal order, of the regulation of different sectors of its economy, and of its institutions. In short, the *acquis communautaire* must be assumed as a whole, and national legislation reformed to the extent necessary to adapt to this commonwealth in areas considered «harmonised» in the Eurorepan Union.

The examples of national regulations arising directly from community rulings are numerous, and encompass the majority of social and economic activity. Free circulation of people, goods and capitals, together with the requirements of an advanced and competitive market economy demand, for example, common regulations in matters of customs and immigration, harmonised regulation of capital markets, communications or energy, respect for shared commitments in matters of environmental protection, and harmonised penal and fiscal legislation (implementation of VAT). Extreme cases of harmonisation are the sectors that have achieved a truly common policy: agrarian policy, in place almost from the beginning of the European Community with its regime of subsidies, and more recently, monetary policy, with the introduction of the Euro.

As we will see later, the Cadastre as such is not included as a matter for harmonisation in the European Union, although it may be included indirectly to the extent that the policies which are based on cadastral information are harmonised. In most of Europe there is a direct relationship between the Cadastre and the Land Register, and since property regimes and their systems of guarantees are the exclusive competency of national jurisdictions, a process for the harmonisation of Registers, and consequently of the Cadastre, has not occurred. There is no European model of Register nor a regulation to govern it in a unified way, although obviously the Register as an institution is in all cases dedicated to guarantee real estate property rights, one of the basic pillars in a market society. With regard to the Cadastre, there is no model to which candidate countries must adapt, although they must have a system of territorial information that as a minimum allows the spatial location of property, or entities to receive certain community aids.

### Candidate countries. How the need for cadastre arises

Twelve countries are presently considered as candidates accession to the EU and are negotiating there incorporation as of 2004 (although negotiations with Bulgaria and

Romania are in earlier phases). These countries are classified as follows:

- **Countries whose economy is in transition:**

— <b>Central and Eastern Europe</b>	— <b>Baltic</b>
Bulgaria	Estonia
Slovakia	Letonia
Slovenia	Lithuania
Hungary	
Poland	
Czech Republic	
Romania	

- **Countries with a market economy:**

Cyprus  
Malta

The sum of these countries will add a little over a million square kilometres and one hundred million inhabitants to the more than three million square kilometres and 380 million inhabitants of the European Union. Growth is less in economic terms, adding only 430,000 million euros to the Unions GDP (currently nearly 9,000 billion euros). Gross per capita income of the new members (in terms of parity of buying power) is 10,444 euros, compared with 26,800 in the current member States.

We should also mention a group of eastern European countries that have not yet been considered as candidates for adhesion, but which are the subject of different EU aid policies: Albania, Bosnia-Herzegovina, Croatia, Macedonia and Yugoslavia. Also, there is Turkey, a country that has been a *de facto* candidate for many years, and the countries within the European Economic Space (Iceland, Norway and Switzerland) which, although not members of the Union, share the majority of its policies and whose respective legislations have been harmonised to a large extent to the *acquis communautaire*. Thus, it is frequent to talk of Europe in general when we really refer only to the area of the European Union, due to the influence of th EU on the continent as a whole, whose polcies only exclude Bielorussia, Russia and Ukraine.

It is evident that the status of each country has a direct affect on the length of the road to harmonisation of legislations and accession to the European Union. Cyprus and Malta are countries with a well-established market economy which in principle do not require major legislative reforms. The rest of the candidate countries are emerging from socialised economies and, although all have completed their respective political transitions, their evolution towards a market economy has been unequal. One must remember that the former European communist regimes were not homogeneous, and that private property or activities characteristic of a market economy were allowed in different measures. The Yugoslavian republics were the most flexible, while the Baltic republics were part of the Soviet Union for nearly seventy years. It is also true that reform is more difficult and complex in the larger countries than in the small ones.

In the countries of central and eastern Europe, the Cadastre is evolving in tune with reform policies in diverse sectors. The Cadastre is not an end in itself, but rather a means, a basic infrastructure of society that supports different social and economic purposes. In these countries, the need to reform or create a Cadastre is basically linked to the process of de-nationalisation, privatisaion or restitution of real estate (mainly lands) to new owners who purchase them or previous owners or their descendants whose property had been socialised. The economic aim sought is to create a real estate market, which must be backed by a

system that guarantees property rights, leading inevitably to the implementation of the Land Register. The cadastre is basically the essential graphic support of the Land Register, and the recipient of the enormous changes in the property of land inherent in the process of privatisation.

Other policies exist that also require the Cadastre to accomplish their objectives, principal among which are land policies (provision of infrastructure and environment), fiscal (introduction of real estate taxation) and aids to the agricultural sector. These last are focused directly on the subsidy control system applied in the Common Agrarian Policy of the EU.

In summary, the need for a modern Cadastre is evident, and candidate countries seek a model to follow. They naturally look to the European Union, where they find that, in the first place, Cadastre is not harmonised in community; the European Commission does not include an organ responsibility for cadastral affairs; and different cadastral models exist in the member States. Consequently, these countries evolve towards their own cadastral models, based fundamentally on:

1. **History.** The Cadastre is rarely an absolute novelty in a country. Prior to the communist regimes in central and eastern Europe, these countries possessed more or less evolved systems of Cadastre and Land Registration that to some extent have been preserved. The characteristics of those former systems in many cases determine the characteristics of the new systems which must now function in a market economy. Thus, countries such as Slovenia or the Czech Republic have recently developed Cadastre-Register systems based on parcelary topographic maps and on the *grundbuch* of the old Austrian Register, which was never abolished, just temporarily abandoned.

2. **National needs.** The structure of the Cadastre is defined according to the purposes it is meant to satisfy, but mainly as a graphic support of the Land Register and to support the process of real estate privatisation or restitution.

3. **Available technology.** This is no different from what is available in western Europe. It is more a question of selection or technical optimisation than of availability. In any event, the technical solutions adopted in different countries are fairly similar.

4. **The cadastral model in the collaborating country.** As we will see later, candidate countries are receiving considerable technical and financial assistance from member States, both in the form of EU projects and bilateral activity. This includes collaboration by official entities, universities and companies, and there is a natural tendency to «export» the model applied in the collaborating country.

#### Cadastral models in the member states of the EU

As explained previously, a single cadastral model does not exist in the European Union, each country originally applied whatever model it preferred, and the *acquis communautaire* does not require reforms of any kind. Recent reforms in the Cadastral-Registration systems in some countries have been done independently, to satisfy domestic objectives and needs.

**Chart 1** briefly summarises the characteristics of the Cadastre and Land Register in the member States of the EU. These systems can be classified by the following concepts:

1. **Administration responsible for Cadastre.** Throughout the European Union, the Cadastre is

considered an instrument of economic policy in the national interest and consequently, its competency corresponds to the country's central administration, except in the case of Germany where responsibility resides in the *länder* (federal states).

2. **Responsible Ministry.** Ministerial responsibility for the Cadastre is largely related to the principal use for which the Cadastre was conceived. In countries where the origin is mainly fiscal (Belgium, Spain, France, Italy and Luxembourg), cadastral responsibility resides in the Ministry of the Finance. A second important group of countries is formed by those where the Cadastre is governed by ministries such as Agriculture, Environment or Territory (Greece, Finland, Holland and Portugal). The third group is formed of countries such as Denmark and Sweden, with highly independent cadastral organisations related to a Ministry (Housing and Environment, respectively). In Austria, cadastral responsibility corresponds to the Ministry of Economy, while in Ireland and the U.K. a cadastre as such does not exist, but rather a highly autonomous institution (Ordnance Survey) responsible for national cartography and geodesy.

3. **Relation of the Cadastre to geodesy and «general» cartography.** In this regard, EU countries divide into two almost equal groups: those having a single geographic and cadastral institution (Austria, Denmark, Finland, Luxembourg, Portugal and Sweden) and those with separate institutions for cadastre and general cartography, which includes the larger countries (Germany, Belgium, Spain, France, Greece, Holland and Italy). As mentioned, Ireland and the U.K. have an exclusively geographic institution.

4. **Identification of real estate.** All EU countries have a parcel-based cadastre (except Ireland and the U.K.) and therefore have a single identifier for each parcel, equivalent to what in Spain we call *referencia catastral* (cadastral reference).

5. **Type of cartography.** All countries are in the process of completing the change-over from conventional to digital cartography using different processes, from simply scanning conventional maps to the generation of new vectorial maps based on orthophotography.

6. **Relation with the Land Register.** The majority of EU countries opt for the registration of rights, which are guaranteed in almost all cases. This means that the Registrar examines the documents that sustain the right being registered. Only in a few countries of the Latin tradition (Belgium, France and Italy) is the Register a mere collection of deeds.

With regard to the effect of registration, two main groups exist. Basically in germanic countries, the Register confers legal status to the right of property: the right does not exist if it is not registered. This is the case in Germany, Austria, Greece, Holland, Ireland and the U.K. In the rest, the main effects are publication and protection from third parties. Naturally, registered rights prevail over unregistered rights.

All Registers in the EU use (or will use in the immediate future) cadastral mapping. The type and intensity of use in each country depends on the type of registration defined in the respective legal base, which also affects the degree of integration between the cadastral and registration institutions. There are four different situations:

a) Integration in the same institution or co-existence as separate organs depending on the same administrative entity. This is the case in Belgium, France, Holland, and

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Italy and will be the case in the near future of Greece. Integration in these countries has mostly occurred in recent years.

b) Cadastre and Register are independent institutions, but share the same database. This is the case in Austria, Finland and Sweden

c) Cadastre and Register are different institutions which exercise the formal communication of updates to their respective information (in very different degree, frequency and intensity). This is the case of Germany, Denmark and Spain.

d) A formal relationship between Cadastre and Register cannot exist because the Cadastre does not exist. Ireland and the U.K. use only the cartography contained in their respective Ordnance Surveys.

In summary, an important degree of integration exists, unrelated to a given registration model or to a specific geographical area, to the extent that half of the countries in the EU store cadastral and registration data on the same database.

Before completing this review of the different cadastral models within the EU, two additional aspects should be mentioned:

— Basically two original models of cadastral system exist in Europe, partially related with systems of land registration. In the central European model (beyond the area of the germanic *grundbuch*), Cadastre emerges as a graphic basis of land registration, to the effect that physical changes must be reflected in the Cadastre and legal changes in the Register, maintaining a perfect parallel. In the latin model, the Cadastre emerges as a fiscal instrument, to collect land taxes. In this case, the registration of rights is not obligatory and initially does not have a cartographical basis, therefore parallelism does not exist until the reforms carried out recently in some countries.

— When reference is made to the Cadastre in Europe, it is almost always to a parcel-based Cadastre of land, which does not make a formal distinction between rural and urban land and which only in a few countries contains a true cadastre of buildings. In fact, in some countries the Cadastre of buildings is the responsibility of different ministry or administration than the general cadastre. In the case of Finland, the building cadastre is the responsibility of the local authority.

#### Cadastral models in candidate countries for accession to the EU

The cadastral models currently in force in central and eastern European countries have all been recently created or reformed following the political and economic transition processes initiated in 1990. Development has not been based on guidelines from the EU, but their designers have had the opportunity to evaluate and compare systems in force in other European countries and to adopt those elements that best satisfy national needs. As we shall see, the models adopted by these countries present significant differences, which can be analysed in the same way as for member States.

**Chart 2** gives the characteristics of the systems of Cadastre and Register in the twelve candidate countries.

1. **Administration responsible for Cadastre.** In all cases, cadastral responsibility resides in the country's central administration.

2. **Responsible Ministry.** Contrary to the situation in the EU, in none of these countries the Ministry of the

Finance has competency over the Cadastre, given the non-existent fiscal aspect. On the contrary, the new cadastres in these countries emerge with a multi-purpose vocation and tend to adhere to generalist ministries or those whose purpose is to provide service to the rest of the public administrations. Thus, in four countries (Cyprus, Letonia, Poland and Romania) the Cadastre pertains to generalist ministries, such as Interior, Administration or Justice. The largest group of countries relates cadastral responsibility with ministries associated with territory: Environment, Agriculture or Land Administration: this is the case of Bulgaria, Slovenia, Estonia, Hungary and Lithuania. In the Czech Republic and Slovakia, the Cadastre is an autonomous agency directly dependent on the prime minister, as clear sign of its role as a basic service to the entire administration. Malta does not have a cadastral institution.

3. **Relation of the Cadastre with general cartography and geodesy.** Almost all countries feature a single institution which covers cadastral and geographical functions. Only Bulgaria has separate institutions.

4. **Identification of real estate.** Except for Malta (and for the time being, Cyprus) all candidate countries have a parcel-based cadastre and therefore a unique identifier for each parcel.

5. **Types of cartography.** Like their EU counterparts, candidate countries are all in the process of completing the change-over from conventional to digital cartography or creating new, previously inexistent cartography in a digital format.

6. **Relationship with the Land Register.** A large majority of candidate countries have a register of rights. As for the type of registration, there is the same division as in EU countries. In seven (Cyprus, Slovakia, Slovenia, Estonia, Hungary, Poland and Romania) registration confers legal status to the property right, while in the rest, registration provides protection from third parties.

Integration of the Cadastre and Land Register is greater in these countries, mainly due to the fact that in several cases *ex novo* institutions have been created to introduce a system of Cadastre and Land Register. Because the initial priority is to consolidate the guarantee of property rights and to strengthen the real estate market, the principal function of the Cadastre is precisely to serve as a territorial support to the Register. In this situation, it is easy to see why a single institution has been created.

Thus, in the majority of cases (Cyprus, Czech Republic, Slovakia, Hungary, Letonia and Lithuania), Cadastre and Register are housed in a single institution. Slovenia is presently in the process of unifying its cadastral and registration databases. Only four countries, although these are the largest in territory (Bulgaria, Estonia, Poland and Romania), maintain the classic separation between the two institutions.

To summarise, it can be said that there is a greater homogeneity between the cadastral models of the candidate countries than between member States of the EU, based on the unification of geographic and cadastral institutions and on the degree of integration with the Land Register. The Register can not be conceived without cadastral cartography, except in the case of Malta, where maps are provided by the interested parties.

Lastly, it should be noted that the Cadastre in these countries is of land and in very few cases of buildings, which can pertain to a different ministry (in Romania, the Ministry of Public Works and Transport).

### Comparison between cadastral systems in member states and candidate countries.

**Chart 3** gives a numeric comparative summary of the situation of member States and candidate countries with regard to some of the concepts analysed in the two preceding sections.

The foregoing allows us to reach certain conclusions and to identify some predominant tendencies in the process of modernisation of European Cadastres.

The **conclusions** are the following:

— Cadastral systems are more homogenous between candidate countries than between member States.

— Candidate countries have a greater facility to adopt new systems, since they start out from situations where Cadastre and Register did not exist or were not used. Their long history of regimes that limited private ownership has required the revitalisation or creation of a new system of Land Register based on Cadastre. It is precisely the two most atypical countries in the group (Cyprus and Malta) which already had market economies.

The **tendencies** showing through in the process of modernisation can be identified in part by their institutional aspects:

— Cadastres tend to depend on generalist or territorial ministries, as a sign of their multi-purpose function. However, it should be noted that Cadastres created for fiscal purposes and dependent on Finance Ministries (Belgium, Spain or France) are adapting flexibly to new usages and services based on cadastral information.

— A strong trend for unification of geographic and cadastral institutions, and of Cadastre and Land Register, is evident.

And on the other hand in **technical aspects**:

— The vocation of the Cadastre has necessarily become multi-purpose, as a basic infrastructure in the service of the administration's diverse policies and as a supplier of products to citizens and companies.

— Cartography, today and in the future, is digital. One speaks of geographic information systems, land information systems or land administration systems.

— The trend in land-related databases is to interconnect and centralise, in accordance with the concept of data warehousing. The tendency is for the country's cadastral institution to be responsible for constructing, maintaining and centralising the database, which feeds others pertaining to public administrations.

### Modernisation of the cadastre in candidate countries

The countries applying for integration in the EU have made significant efforts to modernise their Cadastres since these are key to the privatisation process and to construct of a reliable system of property registration that guarantees the right to real estate property in a market economy environment.

**Chart 4** shows the main projects conducted in recent years (many still under execution) and the international cooperation they have received both multi-laterally, basically within the EU Phare programme and the World Bank, and bilaterally, from public and private institutions in third countries.

**Bulgaria** and **Romania** have still not completed the real estate privatisation process and both countries are developing costly integrated Cadastre-Register projects financed by the World Bank. The Phare programmes carried out in these two countries have focused on evaluation tasks

in the first phases of construction of the Cadastre and Land Register, key elements in the principal objective of guaranteeing a real estate market.

The projects carried out in the **Czech Republic, Slovakia and Hungary** have focused on objectives related with a more advanced system of Cadastre and registration. These have mostly been technological projects for automation and digitalisation of a pre-existing Cadastre and for connection between databases. All three countries have developed intense international collaboration, both bilateral and multi-lateral, through the EU Phare programme. A sign that the objectives go beyond the primary aims of Cadastre and Register (to guarantee real estate property) is the project to develop real estate taxation in the Czech Republic or to connect land usage databases in Slovakia.

The projects for integration of databases, together with other technological projects, also dominate the initiatives underway in **Cyprus**, a country that is transforming its cadastral system, although obviously not because of a privatisation process which has been the case of other countries emerging from collective property regimes.

**Slovenia** is developing an interesting strategy of joint and simultaneous modernisation in parallel of the Cadastre and the Land Register, with the objective of integrating their databases. International assistance is in the form of two inter-related projects: technical assessment through the Phare programme, with the participation of Spain, and project execution heavily financed by the World Bank. In addition to the Cadastre-Register system, these projects include other aims characteristic of an advanced concept of Cadastre: the construction of an agrarian information system, the creation of a building cadastre and the taxation on real estate.

Cadastres in the Baltic Republics have evolved very rapidly, going in a short time from projects for cadastral construction to others characteristic of advanced cadastral systems, with special emphasis on territorial information systems (LIS). **Estonia** is conducting an important project for agrarian reform, financed by the World Bank and supported by a TIS based on orthophotography. In **Letonia** another project for rural development, financed by the World Bank, contains sections on Cadastre, and projects for urban cadastre and real estate taxation. **Lithuania** is currently placing special emphasis on to the accessibility of cadastral data, in the framework of development of the information society.

**Poland** is the largest and most populated candidate country, and alone represents 40% of the group. It is a country with a significant agrarian sector and the most interested in developing projects to control agrarian subsidies through the Cadastre, in accordance with the Integrated Administration and Control System Management and Control of PAC Subsidies. This is in addition to projects for coordination between Cadastre and Register similar to those in other countries in the area.

To conclude, regarding the **principal areas addressed by projects for modernisation of the Cadastre** developed and presently under execution, these are mainly technological, for example:

- Generation of digital cartography. Development of territorial information systems in their different versions (geographic, territorial or administration).
- Creation or completion of the cadastral map.
- Connection of Cadastre and Register databases.
- Computerisation of the Land Register.
- Access to databases via Internet.
- Generation of orthophotography.
- Definition of data exchange formats.

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This list of the principal aspects addressed by modernisation projects is completed with the following projects:

- Real estate taxation.
- Cadastre of buildings.
- Control of agrarian subsidies through the Cadastre.

The extent of **international cooperation** can be divided into three groups:

a) Execution of projects financed by the International Bank for Reconstruction and Development (World Bank).

The three largest (Bulgaria, Poland and Romania), together with Slovenia, have obtained financing from the World Bank for specific projects for the integration of Cadastre and Register. The projects in Estonia and Letonia address rural development and agrarian reform with a cadastral component.

b) EU Phare Programme.

This programme, whose objectives, characteristics and priorities are explained later, has sponsored projects focused mainly on development of territorial information systems, information technology, improvement of Cadastres or Land Registers and agrarian evaluation.

c) Bilateral cooperation.

This has focused primarily on topography, cartography and the construction of territorial information systems. The countries that have most assiduously collaborated with candidate countries are Switzerland, Denmark, Sweden, UK, Belgium, Holland, Letonia, U.S. and Canada, through both public and private institutions.

#### The EU Phare programme

The objective of the programme is to grant economic aid to candidate countries in eastern and central Europe. It was created in 1989, initially to support the political transition in Hungary and Poland, and from 1994 it is the financial instrument of the pre-accession strategy for Bulgaria, Estonia, Hungary, Letonia, Lithuania, Poland, Czech Republic, Romania, Slovakia and Slovenia. It also offers aid to Albania, Macedonia y Bosnia-Herzegovina.

As well as being the principal instrument for financial and technical cooperation in the Central and Eastern European area it is oriented, since Agenda 2002, to the preparation of candidate countries to accession. It grants

subsidies as a structural fund to favour economic development and also co-finances projects in collaboration with the World Bank, the European Bank of Reconstruction and Development and the European Investment Bank.

The priorities of the programme are the strengthening of institutions in candidate countries and investment to adapt national regulations to *acquis communautaire* and to restructure key sectors of the economy. As we have seen previously, regulations governing Cadastre and the Property Register are not harmonised in the EU, however the Phare programme provides assistance on these matters. This is because the EU considers the Cadastre to be a basic infrastructure in the service of modernisation of key areas of the economy.

The economic relevance of the Phare programme is shown in **Chart 5**, which gives the amounts of Phare-financed contracts in each country in the period 1990-2000, as well as the budget assignments for 2001 and 2002. Calculation, for each country, of the amount of Phare finance per inhabitant, shows that the smaller countries (Baltic Republics and Slovenia) have benefited most from the programme in relative terms.

Finally, although figures corresponding to Phare projects focused specifically on Cadastre are not available, it is worth mentioning that most of the Phare budget is used for training projects, and that projects on Cadastre and Land Register are included in the sections for agriculture and environment, which have received, altogether, financing of over 1,100 million euros in the period 1990-2002.

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