

Aquestes pàgines corresponen a les pàgines **15-30** , i els **apartats 2.0 i 3.0** .

A.3 TRADUCCIÓ NUCLI PFG ANGLÈS

2.0 METHODOLOGICAL EXPOSITION

This part of the study intends to answer to the needs to create a global framework to allow the classification of cadastral systems. Being true that every system has been created in a specific way towards the others, in order to make possible the comparison, we have to unify them in a referential framework that I will define in the following parts.

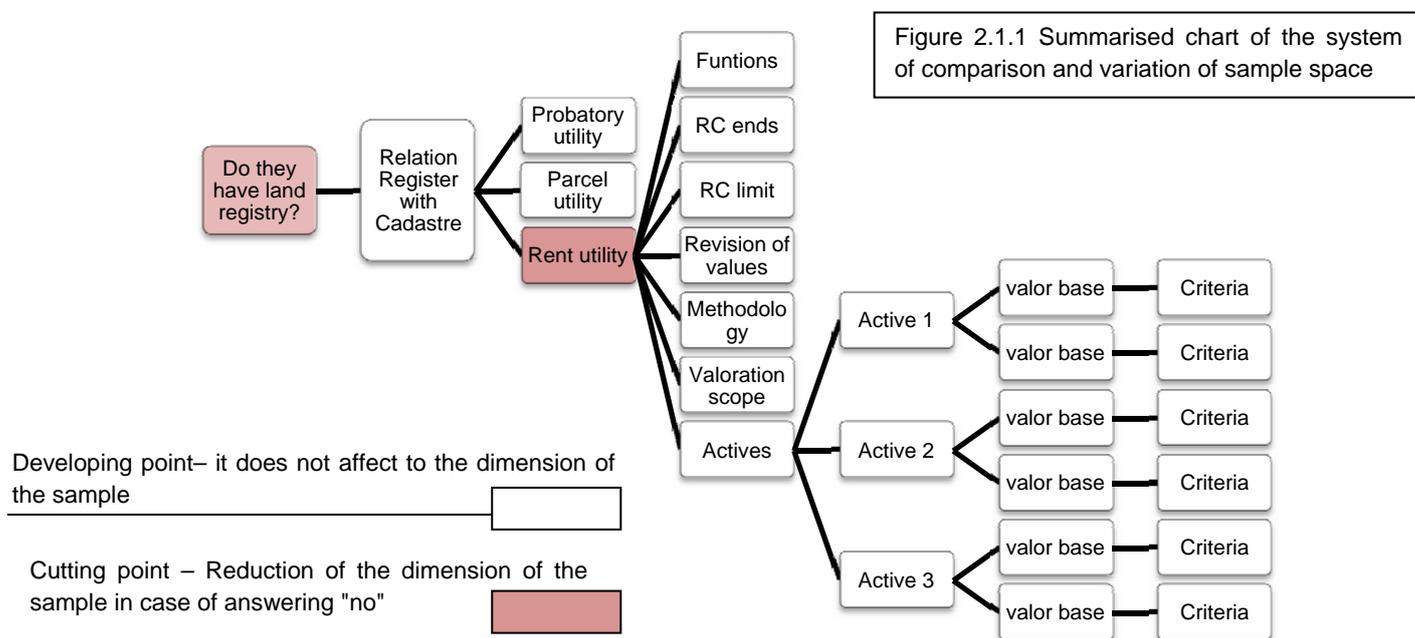
Since for the analysis there will be used basic statistical techniques, throughout the explanation it will be made reference to the variations of sample space as the member states are discarded due to lack of requirements for the cut.

2.1. METHODOLOGY OF THE COMPARATIVE STUDY

To perform this study, it starts on the basis of comparative qualitative studies because of the following¹ reasons:

- The working environment is focused in simple sample space (28 countries).
- The conclusions that we want to obtain with the results of the comparison do not have to serve as possible behaviours of a bigger population, but that they are destined to the determination of behavioural patterns defined in the aims of the studied population.
- The results obtained do not have a quantifiable nature.

The methodology to follow is put forward with a series of cut points and the subsequent development chosen from the revision of the state of art and the bibliography as it is explained in each part. Therefore, in the cut points, the dimension of the sample space will be affected since those states that do not have that characteristic will be discarded of the sample space and in the developing points. What it is intended to do, it is



precisely to make bigger the exposed points and obtain no matter from the classification of those ones a reduced sample space.

For the comparison and obtaining of the conclusion of those, we will make use of a comparative matrix with polar questions (yes/no questions) in which it will be put forward the horizontal distribution of the member Estates in relation to the dimension of the sample space and in a vertical axis the following entries, in nature of the revision of the cited studies and my own criteria so as to be able to fulfill the aims of the study.

1. Do they have land registry?

The first cut relates to which member states have land registry since as it can be confirmed in the revision of the state of art, not all countries of the EU do. This is because they consider that those functions that this registry has can be done by different institutions or by different methodological ways.

It is essential to bring up this cut point since the study takes as sample space the total amount of member Estates that have a land registry institution. That corresponds to a cutting point given that the countries that do not have land registry of the sample space - reason for the dimension of the sample- could be reduced from this point.

2. Register of the Integral Property

Once determined the existence of Land Registry, it is important to establish which systems integrate that with the Property Registry, a fact that is clearly pinpointed and studied by (Durán Boo & Velasco Martín-Vares, 2007)¹. This verification is done since land registries that have that integration, will surely take advantage of the easy access to the information of real estates, duplicates, etc. Therefore, we could establish that given that in Europe the tendency is to unify those two bodies, that system at first seems to be more efficient than the division of institutions and I reckon that it is necessary to check if this fact can be reflected in the valuation systems which they are the focus of that study.

That part does not imply a reduction in the sample space dimension, but it has to be useful to develop **point 1** of that methodological description, that throughout the comparison has to provide us with different criteria to be able to establish different relations. That part, hence, is a developing point between the different land registries. Hereto, the sample space will not be reduced.

¹ Durán Boo, I., & Velasco Martín-Vares, A. (2007). La relación entre el Catastro y el Registro de la Propiedad en los países de la Unión Europea (1). *CT - Catastro*, 8-30.

3. Utilities

That division of cadastral utilities has been taken from the conclusions of (Napoli, 2003, p. 110)² in which the author names and classifies the three big branches of activities that the cadastre can do.

Cadastral of plots: All those cadastral systems that do the function of the graphic representation of plots understood as the representation of boundaries of the plot or property, its location and measurement with the exception of all those bodies that their function is topographic and which are very linked to representation of the national land.

Probatory cadastre: All those cadastral systems that associate to a plot real right or other characteristics linked to properties. Also, those which deduct rights to plots and register the right to property.

Cadastral rent: All those cadastral systems that are destined to determine the impositive tax of real estates in order to collect taxes.

That part is about a cutting point since sample space can be reduced due to the aims of this study as we will only take into account those states that have a valuation function. From this point on, it is when the study starts to open a broader line of study with different authors, cited in the revision of the state of the art.

4. Function

That division is the result of a series of functions found inside the study of the bibliography and that from my point of view, they represent the ways of developing the Cadastral Utilities, defined before. Therefore, this part complements the study of (Napoli, 2003).³

- Land registry: Registry of the real rights and property.
- Graphic representation: Graphic representation of towns and plots that form them.
- Valuation: Use of different methods of valuation. It is used to do massive or single valuations of real estates.
- Mortgage documents: The benefits of a mortgage are registered to their real estates.
- Management of public property: Sale and purchase service of public property of a country.

² Napoli, G. (2003). Comparación entre el catastro urbano de España e Italia. Estudio comparativo a través de casos prácticos. *Catastro* , 69-112.

³ Napoli, G. (2003). Comparación entre el catastro urbano de España e Italia. Estudio comparativo a través de casos prácticos. *Catastro* , 69-112.

- Historical records: Storage of historical cadastral records. Its value is totally historic.
- Transaction Database: Registry of the transactions done by a country so as to collect taxes of the real estates.
- AVM systems: Automated valuation systems corresponding to IT applications.

That part does not imply a reduction in the sample space since it just pretends to develop **point 3** of the methodological description and provide with comparative criteria. So, once this point finishes, it is truly when the study broadens in contents on the basis of its proposed secondary aims. This will help to the correct fulfilment of the main aim of the study.

5. RC aims

This part intends to classify the aims by which it is calculated cadastral rent. This section is the result of the revision of normative texts that define the functioning of each land registry. It is relevant for the study since it gives us information about fiscal authorities of the EU countries and about how from different valuation types can be treated a real estate in correlation to its purpose, together with the degree of implication that has each cadastre inside the tributary functions of a country. Therefore, this part has been done from the observed aims.

- Taxes on real estates: Referred to those aims that deduct a tributary tax to the dominical title and to other real rights that fall on real estates inside a valuation scope.
- Heritage transmission: Referred to those aims that use valuation in cases that there exists transmission or rent of a property – in that case real estates, among individuals.
- Inheritances and donations Tax: Referred to those aims that use valuation in order to measure the rent that involves the patrimonial increase produced by the acceptance of an inheritance or a donation. Those legal acts work the same way as legal taxes do.

That part does not imply a reduction in sample space since it is only developed in **point 3** of the methodological description and aims to provide with comparative criteria.

6. Actives

In that classification we seek to determine the different types of actives that value the different cadastral norms on the basis of the bibliographical study. Moreover, it is essential to establish an active base among the member states that present cadastral valuation systems for real estates as to understand the valuation systems, I think it is relevant to establish a relationship with the actives we contemplate.

Those definitions pretend to be generic and there are out of the legal framework of the state standards in order to cope with the series of defined actives for sample space in relation to **point 3**.

- Urban Land: All that land that is integrated in a legal and effective way inside the funds and own services of the urban population centres. It will be understood that it is like that irrespective of whether the plots of land are buildable or not, but that they count on their resources and required services by their corresponding urban legislation. Likewise, they need to be named like that without need of working to establish the needed facilities or services. Inside this group, it is included because of their similar characteristics in relation to the following comparison the urban land and the one for development.
- Agricultural land: It is the kind of land that it is not part of the urban land and that includes the classification of undeveloped land. It is also exclusively destined for activities related to agriculture or different economical activities of the same nature.
- Buildings or constructions: Referred to those systems that take into account the main buildings or constructions that are linked to a plot of land and need to have a permanent role.
- Private units: Referred to those systems that distinguish private properties of buildings with a horizontal property regime.
- Outdoor facilities: Referred to those systems that take into account auxiliary constructions or outdoor facilities that are normally linked to an economic activity or that they deal with not very important constructions and that they are complementary.
- Commercial actives: Referred to those systems in which they have into account the capacity to generate benefits of the main building or construction and they are treated in a different way to all buildings or construction of for example: residential use.
- Industrial facilities: All those real estates that even they are linked to an economic activity. Their activity makes them be different to those real estates linked to economic activities and therefore, they receive a special distinction.
- Real estates of special characteristics: Referred to those real estates that are not included in the other categories and that normally have their own norms of valuation depending on the type of real estate that is being valued. That is why the integrated real estates in that group have important differences among them.

That part corresponds to a developing point since it does not involve a reduction of sample space as it develops the main aim of the study.

7. Massive valuation area

In order to be able to understand cadastral systems I think it is important to compare which areas form cadastral valuations since there is no specific documentation updated. That division has been done in accordance to the bibliographical revision of the norms of cadastral systems.

- Industrial site: Referred to those valuations that have as an area industrial sites of valuation that are not in the city centre. Therefore, they subdivide the town in similar areas.

- Town: Referred to those valuations that are done in all the municipality.

- **UNITÀRIES**: Referred to those systems of valuation that intend to do individual valuations of real estates by two different reasons: because they are not included in the survey of land or because their singular nature makes it necessary its single valuation.

That part is a developing point that pretends to broaden comparative criteria as a result of utilities in **point 3**.

8. Methodology for cadastral rent classification

That part is brought up so as to allow different systems of survey of land that have been found as a result of the bibliographical revision and that can be summarized by the following way:

- Market observatories: Those systems in which the valuation of real estates is done by observatories of market conditions. It is possible by using indicators under monitoring to evaluate market conditions.

- Table of values: Field studies that can have different attributes to evaluate in function of the value basis and the criteria of cadastral systems just like the realization of land quality tests, and so on, in order to be able to evaluate the factual situation.

- AVM: Automatic valuation systems that by means of algorithms and statistics determine the value of real estates in an automatic way depending on the inputs of the system.

- Register of transactions and rents: Systems with databases of real transactions in reference of the moment of the valuation in a certain moment in which the results of the analysis of transactions/rents are indexed.

- Responsibilities of the owner to notify modifications: This type of system forces the owner to notify modifications of the real estates that can affect their value - each system imposes a proportion by the obligation of notification- or those that force periodically to give information about the value of the real estate in order to be able to make a valuation of it.

That point corresponds to a developing point. Thus, the aim is to develop the methodology of valuation of cadastral systems with the objective of defining in depth the systems of cadastral valuation.

9. Value Basis

The following criteria has been extracted from (EVS 2012 7th edition, 2012)⁴, a series of standards of valuation in order to define the scope in which the different methods of valuation are integrated and exposed in the following part.

The standards work in a supra European level and they will be useful for me to establish the defining scopes of the methodology of the general valuation. I will do it without having contaminant elements coming from tests of member states together with the fact that there are no texts of direct application to cadastre.

Since in that study there are no studies or texts that have a direct application; in that case I have decided to use definitions establish by European standards for two reasons: because they do not respond to either interests of any country or cultural reasons. What is more, because a standard is a document that it is established by agreement and approved by a recognized body of professionals of the field and offers rules, guides and characteristics so as to be able to carry out activities in a proper way. Those are normally applied in the professional scope and it is not because it is about a normative text, but a field that recognizes the value of those practices.

The European standards (RICS, IVS, EVS...) are the only texts of those characteristics since the UE legislation does not give a general definition for the market value outside the specific aims. The same happens with the (Directiva del Parlament Europeu i el Consell, en relació al accés i l'exercici de les entitats de crèdit, 2006). That is why the international standards have been chosen.

Inside the (EVS 2012 7th edition, 2012) it can be distinguished two different types of value in relation to those systems that have as their aim determining the marked value and those that do not follow the market value.

Value base on the basis of value of market: That concept is important when determining the price of any product, the point in which the urge of demand and the rent of offer converge. The definition of that concept is very variable depending on the body and the function it has. It is because of that reason that I apply Tegova's definition since it does not answer to popular interests. There exists other standards but that one allows me to have free access to information and the variations are not quite significative so as to influence the results of the study.

Market value: The estimated quantity or value of the taxation by which it could be done a transaction between the offer and the money asked taking into account that both parts act properly, with caution and without coercion.

⁴ EVS 2012 7th edition, T. (2012). *European Valuation Standards* (7th ed.). Brussel·les: Gillis nv/sa

As a result of that definition, it can also be integrated market rent.

Market rent: Defined as the quantity of rent that the ownwer can collect from the valuation data depending on the rent that the demand is willing to pay in that transaction. It is done by agreement by both parts after a proper negotiation in which both sides act properly, with caution and without coercion.

Understanding that estimated quantity as the expression in monetary terms - normally in the current money- for an active in a market with full conditions of competence. Thus, the market value is measured as the most likely value that it can be obtained in the market when valuating it and in accordance to the definition of market value. Obtaining the best price possible for the owner and the most beneficial and reasonable for the person who buys.

That estimation excludes inflations and deflations of price because of special circumstances. Those values are contemplated in the value base of the following part.

Value bases that do not have as their aim determining the market value.

Reasonable value: Definined as the price that could be paid in order to sell an active or that could be paid to tranfer a passive. This would result from a transaction by two parts with full knowledge of all necessary elements and that they will make decisions in accordance to their individual objectives.

That value tends to be less precise than the market one because of the fact that it is not necessary to expose real estates to market conditions.

Special value: Defined as the attribution of additional value by a special customer having special characteristics that are relevant and have and added value for the person.

Value of synergies or value of union: It is defined as the element of value that appears by combining two or more characteristics or interests in which its combination has a superior value that the sum of those separately.

Value of investment: It is the value of an active for an owner or future owner of the investment or from the operational aims.

Mortgage lending value: It is defined as the value of a determined estate by a taxation in function of the future purchase of one; taking into account a good maintenance, the ordinary and local market conditions, its current use and alternative uses that correspond to the real estate. Speculations will not be taken into consideration.

Insurable value: It is defined as the indicated sum in the insurance contract as the responsibility of the insurance company to respond to any financial loses that the insured person can have among the years that the contract is valid. The taxation value, therefore, makes reference to the insurance coverage appropriate for the property.

Replacement and depreciation cost: That value is usually the one that it is used when we want to obtain market value without evidence that allows to use another method. The replacement and depreciation value is that value that will make to replace

an existent building for one that it is exactly the same with current means and using physical, functional and technical adjustments.

Normally, that value is used when there does not exist a market in which to compare because of lack of relevant samples. That value has the lack that bases on the cost and not in the market conditions. So, those can only be applied when there exists a lack of demand or comparable offers.

Those values are the total value that is reflected in (EVS 2012 7th edition, 2012)⁵, and I will develop the actives of **point 6** according to them since that point corresponds to a developing point in accordance to each kind of active.

10. Methods and valuation criteria

That part corresponds to a developing point in which I pretend to determine the criteria that defines the basic methodologies of real estate valuation: cost, comparison and DOFC. Those have been explained in the value basis exposed in the previous part in order to determine which indicators are the most common inside a sample space of the country that value in the moment of valuating in fuction of each value base.

The inclusion of this part comes from (Reyes Bueno, Miranda Barrós, Maseda, & Rafael, 2012)⁶ for their comparison of the valuation method and criteria of each methodology. In that case, the definition of the following criteria has been extracted from the bibliographical revision of cadastral texts since it is only important for this study to match the existent criteria inside sample space.

For the following classification, sample space has not been reduced, but only those determined basis in the previous part have been taken into account as the aim of this study is to determine the valuation methodology of the member states of the EU and therefore, it does not make sense to analyse the value of basis of the ones that do not use it.

In that section it is necessary to distinguish between those systems that use jointed techniques in order to obtain the value of a real estate. Inside the jointed techniques, it can be found the comparative methodology that in the following parts will be developed in accordance to the criteria that follow each Estate of the sample space dimension. Besides, the added techniques that comprise the methodology of the cost and discount of operative cash flow that of course, form the method of rent and waste. All those, as the previous cases, defined in function of the different criteria of each system.

Market value basis - Methods

Method of comparison in which it is compared actives of similar characteristics. In that part they are displayed those criteria that has been found in the sum of the valuation methods:

- Purchase price

- Construction costs

⁵ EVS 2012 7th edition, T. (2012). *European Valuation Standards* (7th ed.). Brussel·les: Gillis nv/sa.

⁶ Reyes Bueno, F., Miranda Barrós, D., Maseda, C., & Rafael. (2012). Situación de la valoración catastral rural. *CT - Catastro*, 42-54

- | | |
|------------------|--------------------------|
| - Homogenisation | - Supply and demand |
| - General rents | - Changes in price index |
| - Place | - Market tendencies |

Method of operative discount of cash flow in which it is valued from the estimation of the income of the actives with the idea to determine the value of the real estate with which under those value basis of market have been found two principles: net profit or capitalization of rents and the direct estimation.

The net profit or capitalization of rents depend in the present sample space of:

- | | |
|-------------------|-----------------------------------|
| - Gross income | - Interest rate of capitalization |
| - Management cost | - Index depending on the use |

Inside the direct estimation of market, it can also be applied a comparative method to compare the rents that generate actives with similar characteristics. In that part, it can be seen the criteria that has been found in the sum of the valuation methods:

- | | |
|---------|-----------------------------------|
| - Rents | - Comparison with different towns |
| - Place | - Past references |

The operative discount method of cash flow is valued from the estimation of the incomes of the actives in order to obtain the value of the expected incomes. I have been able to differentiate two main principles: the net profit o capitalization of rents and the potential productivity.

The net utility or capitalization of rents depend on the present sample space of:

- | | |
|--|-----------------------------------|
| - Gross income | - Interest rate of capitalization |
| - Reduction of gross income (% of costs of manteniance and fixed equipments) | |
| - n ^o of rooms | - cost of use and activity |
| - m3 propierty | - m2 propierty |

The estimation of productivity is a parameter that it is very linked to agricultural land valuation as a result of the bibliographical revision:

- | | |
|-------------------------|--------------------------|
| - Performance per crops | - Price of crop purchase |
| - Performance of crops | - Place |
| - Standard costs | |

Now, they are going to be presented those systems that have value basis and that do not correspond to market value of the propierty as it is defined in **point 8**.

Other value basis

The value of investment, in that case, corresponds to the operative discount method of flow cash since they take into account the capacity to generate incomes from the property, and take them as a reference for the estimation of value of those different characteristics:

- Area
- Types of crops

Those which take into account the productivity of land:

- Conditions of land
- Water supply
- Place
- Economic conditions linked to area
- Weather conditions

The replacement value with deappreciation corresponds to the method of cost. Inside this group of values there can only be taken into account those systems that take into consideration the cost of substitution of the construction in which depending on the different systems they are defined with the following parameters:

- Ordinary costs (construction expenses, planification, construction, revisions, approval and financial expenses)
- Area
- Quality of materials
- Historical nature
- PEM's budget

The found criteria for deappreciation are the the following:

- Age
- Damage and structural defect

That part corresponds to a developing point and pretends to develop **point 9**, referred to the value basis in order to contribute all those elements that condition the valuation.

11. RC limit

That part arises from the combination of two factors: the first one it is the valuation of land registry which presents tributary aims; and the second one which is calculated by means of plurimetric valuation methods, a fact that can cause to some real states not to be valued in such a way that it is not represented in reality.

I think that this part is relevant since the RC limit type can present relationships with the methodology for the determination of the RC. Thus, that classification has been obtained thanks to the study of texts that regulate the cadastral valuation.

- Registered market value: It corresponds to those systems that interpose the limit of the valuation of real estates to real registered transactions.

- Registered market rent: It corresponds to those systems that interpose the limit of real estate valuation to incomes of hire of registered real rents.
- Observable market value: It corresponds to those systems that determine the market value from market studies and that do not use basis of real transactions.
- Without reference: It corresponds to those systems that by means of the application of a coefficient to the RC value is able to absorb irregularities.

That part is a developing point that intends to give more information to compare when determining the valuation process of the studied cadastral systems. Consequently, that part develops **point 3** because of the reasons previously explained.

12. Revision of the value of real estates

That part is brought up because inside the methodology of valuation, the process of value revision presents a double variable. This is because for those systems of valuation that take into account the market value it is a good indicator the fact to determine the frequency of valuation. It is because it is needed to test if the frequency of valuation of real estates presents any kind of relationship with the value basis.

The hypothesis of the relationship between the market value and the regularity of valuation is extracted from different reports that make reference to the Spanish system since that one presents one of the EU most elevated margins of revision of cadastral values. One of the most representative and current one is (Pueblo, 2012)⁷, in which it is expressed the important difference between the market value of real estates and cadastral value, a very rigid system. Therefore, by having those indicatives we want to verify if that fact is also extended in the rest of countries.

Likewise, I believe that there can be obtained relevant relationships from linking the frequency of the revision of values and those systems of cadastral valuation that are more modern - databases, IT calculus systems, etc.).

For this part it is also necessary to determine which systems do value adjustments of land registry - as long as the real estate has not suffered substantial modifications that importantly alter as each text does to its value- and those that do a new valuation in order to determine the value of the real estate.

That part is a developing point that will close the methodology of valuation since as far as I am concerned and by means of the bibliographical revision, I think that with the current methodology there have been accomplished all the secondary aims. This is because the presented methodology gathers all the parts by which it is composed the cadastral valuation and thus, it implies that the main aim of the study is completed.

⁷ La realidad catastral en España. Perspectiva del defensor del pueblo.

3.0 STUDY OF THE COUNTRY MEMBERS

This part contains the exposition of the criteria explained in the exposition of the methodology in files of each member state. That part only deals with the exposition of the synthesis of the information found in the bibliographical revision and by which it is based the comparative matrix and the subsequent comparisons.

The series of files that are included in the annexes since they are part of information and support source for the explanation of the comparison, but they are not essential to understand the study.

3.1 DEFINITION OF THE FILE

That type of file has been extracted from (Velasco Martín-Vares, Campos, & M^a, 2013)⁸ in which I base the exposition of the methodology of the extracted data since the sections are different and the aim of the study, too. However, it deals with a similar line of the investigation that one has been adapted for the present study.

Thus, the content of the files is defined according to my criteria and with the objective to summarise the cadastral system in a written way to establish source of enquiry of the information to compare. Besides, to put all the necessary information to answer the corresponding points brought up in the section **2.0 Methodological Exposition**.

Information of the body

To name the land registry in its mother tongue and the translation to Catalan, together with the website in order to be able to check the data of the system. That part intends to be a quick presentation of land registry and a quick reference for the consultation of information.

Types of cadastre

In that part it is expressed the normative text by which we can consult the following questions: If there is cadastre, the relationship that cadastre has with the registry of property in order to answer to **point 1 and 2 of the methodological exposition**. Moreover, to which ministry belongs to take advantage and give continuity of the study of (Durán Boo & Velasco Martín-Vares, 2007)⁹ since that one is not current and does not contemplate the present scenario of the EU countries, together with the fact that some land registries have varied the utilities and in some cases the ministries they belong to.

Utilities

It is in the exposition of **point 3 of the methodological exposition** where the general aims of cadastre - not in detail- are summarised in order to check which are the

⁸ ⁸ Velasco Martín-Vares, A., Campos, L., & M^a, R. (2013). El papel del catastro en la imposición inmobiliaria europea. 28 formas de entenderlo. *Catastro*, 29-81.

⁹ Durán Boo, I., & Velasco Martín-Vares, A. (2007). La relación entre el Catastro y el Registro de la Propiedad en los países de la Unión Europea (1). *CT - Catastro*, 8-30.

proposed aims by (Napoli, 2003)¹⁰ explained in the referred **point 3 of the methodological exposition**.

Functions of cadastre

It develops of the objectives of cadastre and pretends to be the synthesis of **points 4 and 11 of the methodological exposition**. Therefore, it is where all the weight of relative information of cadastre will be. It is divided in three subparts that correspond to present utilities. Those parts explore the three variants, although a parenthesis is done in the valuation task.

To carry out the parenthesis in the valuation task, there have been defined five parts that are responsible for collecting all the necessary information to answer the questions of that section. That distribution is proposed in order to make easier the comprehension of cadastral systems and introduce all the information in a tidied way, just as the classification formed by:

- General characteristics: Where the norms that regulate the valuation are collected. A general description of the system that incorporate the maximum value of RC and the utilities that that has.
- Methodology for RC determination: Where it is collected the methodology for RC determination that it is formed by the valuation scope and the type of land survey that it is done.
- Methodology of valuation: Where the used methods to carry out the valuation are collected. A fact that includes the value basis that it is used and the criteria that defines each of those methodologies.
- Classification of actives: Where it is collected the classification of actives together with the explanation of each system.
- Revision of valuation: Where it is collected the explanation of the term valuation. What's more, if it is done a correction or update of value, or if it is determined a new value for the real estate.

¹⁰ Napoli, G. (2003). Comparación entre el catastro urbano de España e Italia. Estudio comparativo a través de casos prácticos. *Catastro* , 69-112.