

Cadaster on rural land: valuation & geo_legal security



UE23

PRESIDENCIA ESPAÑOLA
CONSEJO DE LA UNIÓN EUROPEA



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DEL CATASTRO





- Facts
- Economic valuation
- Environmental Assessment
- Importance of geolocation for legal security



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Cadastral on rural land

What do we do?



39.145.486	real estate (parcels) (50%)
47.390.082	hectares(97%)
8.825.649	owners (30%)
2.462.398	alterations (updates) (40%)
2.500.000	certificates/year
500.000	reference value certificates



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Cadastral on rural land: Economic value

The valuation of real estate on rural land is based on the prices communicated by notaries and on the agronomic, socioeconomic and location characteristics.

Transactions communicated by notaries:
≈ 300.000/year

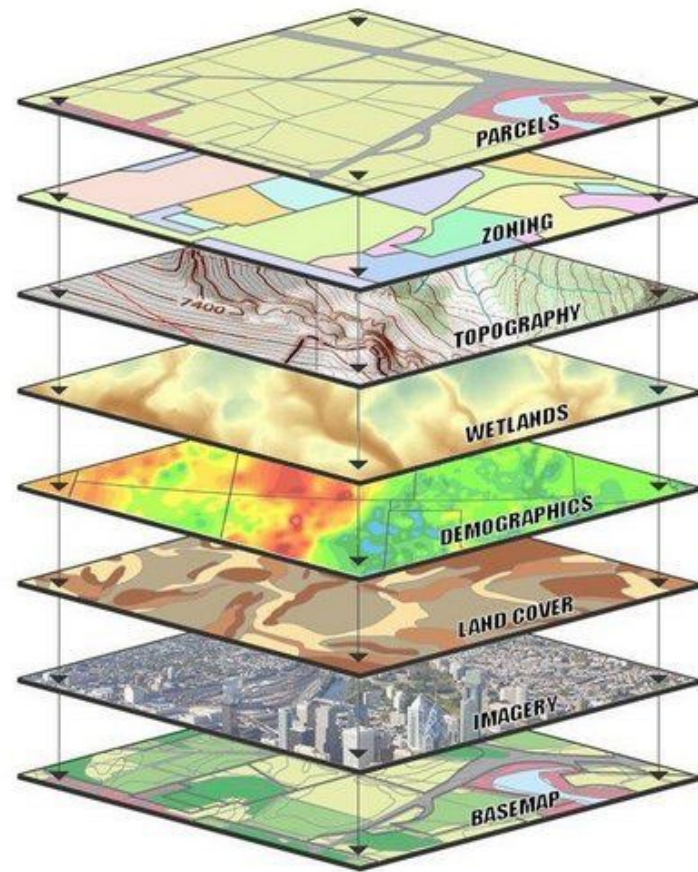
Territory information GIS

- climate
- production
- population
- geography

Crops declared in the CAP

- ≈ 15 million declarations/year
- ≈ 11 million parcels/year
- ≈ 28 million hectares/year

Buildings detected by AI on aerial photography



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DEL CATASTRO



Cadastre on rural land: Economic value



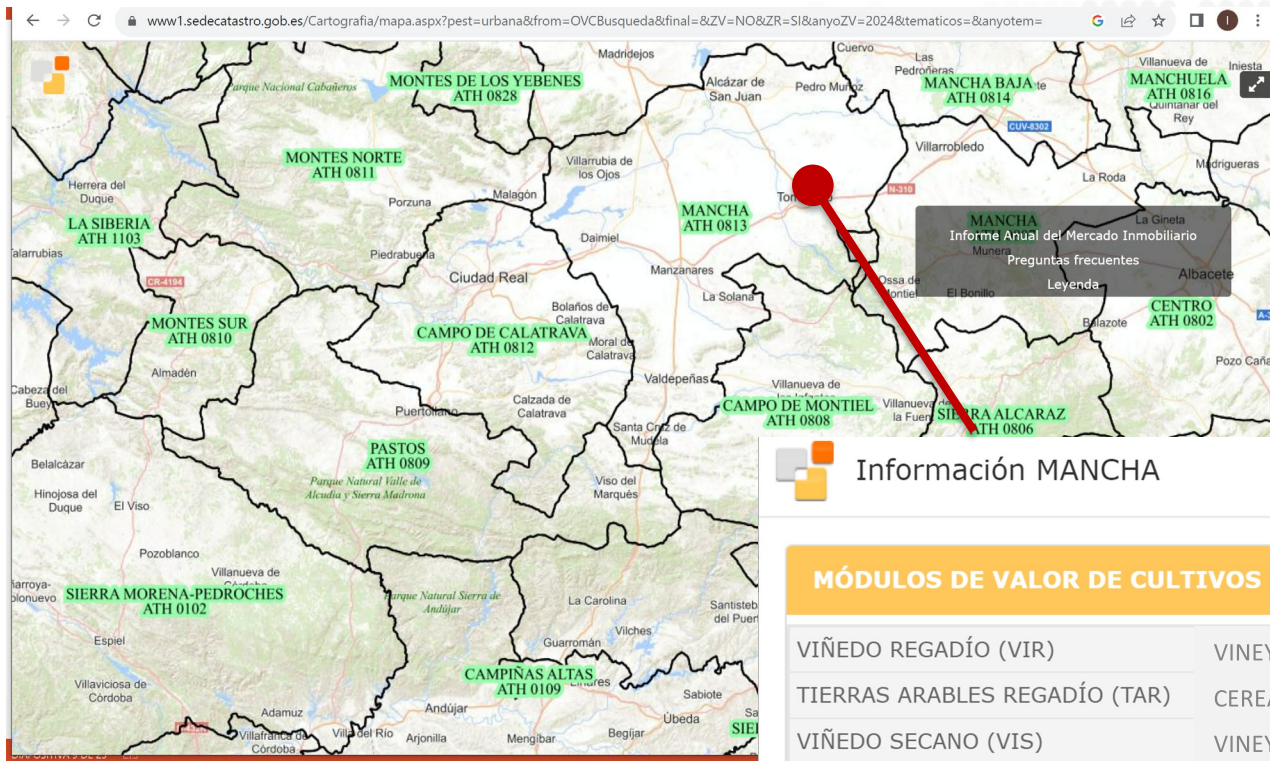
The first step is an analysis of the sales prices communicated by the notaries to the Cadastre.

The result of the analysis is summarized in different “**value zones**” and “**average value’s modules**” assigned to each relevant type of crop.

“**Value zones**”: Group of municipalities with homogeneous conditions in the rural land real estate market

Cadastre on rural land: Economic value

Value for each crop in each value zone (€/ha)



Información MANCHA

MÓDULOS DE VALOR DE CULTIVOS REPRESENTATIVOS (€/HA)

VIÑEDO REGADÍO (VIR)	VINEYARD (IRRIGATED)	15.948
TIERRAS ARABLES REGADÍO (TAR)	CEREAL (IRRIGATED)	12.519
VIÑEDO SECANO (VIS)	VINEYARD (RAINFED)	7.115
OLIVAR SECANO (OLS)	OLIVE (RAINFED)	6.812
VIÑA OLIVAR (VOL)	OLIVE VINEYARD	6.083
FRUTOS SECOS SECANO (FSS)	DRIED FRUITS (RAINFED)	4.830
TIERRAS ARABLES SECANO (TAS)	CEREAL (RAINFED)	4.316
PASTIZAL (PST)	GRASSLAND	2.619
CONÍFERAS (CON)	CONIFER	2.139

Cadastre on rural land: Economic value

The individual value of each parcel depends on its characteristics.

One of the characteristics considered: **POTENTIAL PRODUCTIVITY**

For this purpose, the Cadastre has made a classification of arable land according to crop rotation. Based on information from CAP applications.



CROP ROTATION

2015 Wheat
2016 Barley
2017 Barley
2018 Wheat
2019 Barley

CROP ROTATION

2015 Wheat
2016 Fallow
2017 Wheat
2018 Fallow
2019 Barley

incorporation
into
databases for
the entire
territory

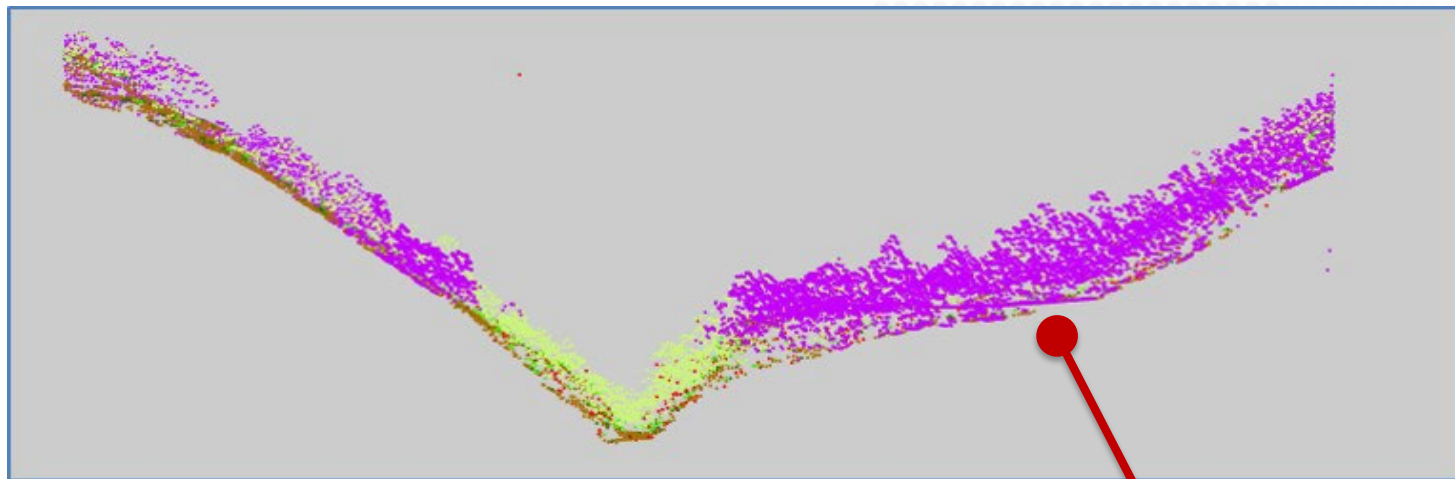


Cadastre on rural land: Economic value

One of the characteristics considered: ORIENTATION

Key variable in the forestry field affecting productivity.

Solar radiation. Quantify its effect. The higher the radiation, the lower the productivity.



incorporation
into
databases for
the entire
territory

LiDAR

*(Light Detection and Ranging o Laser
Imaging Detection and Ranging)*

higher growth on umbrian slopes



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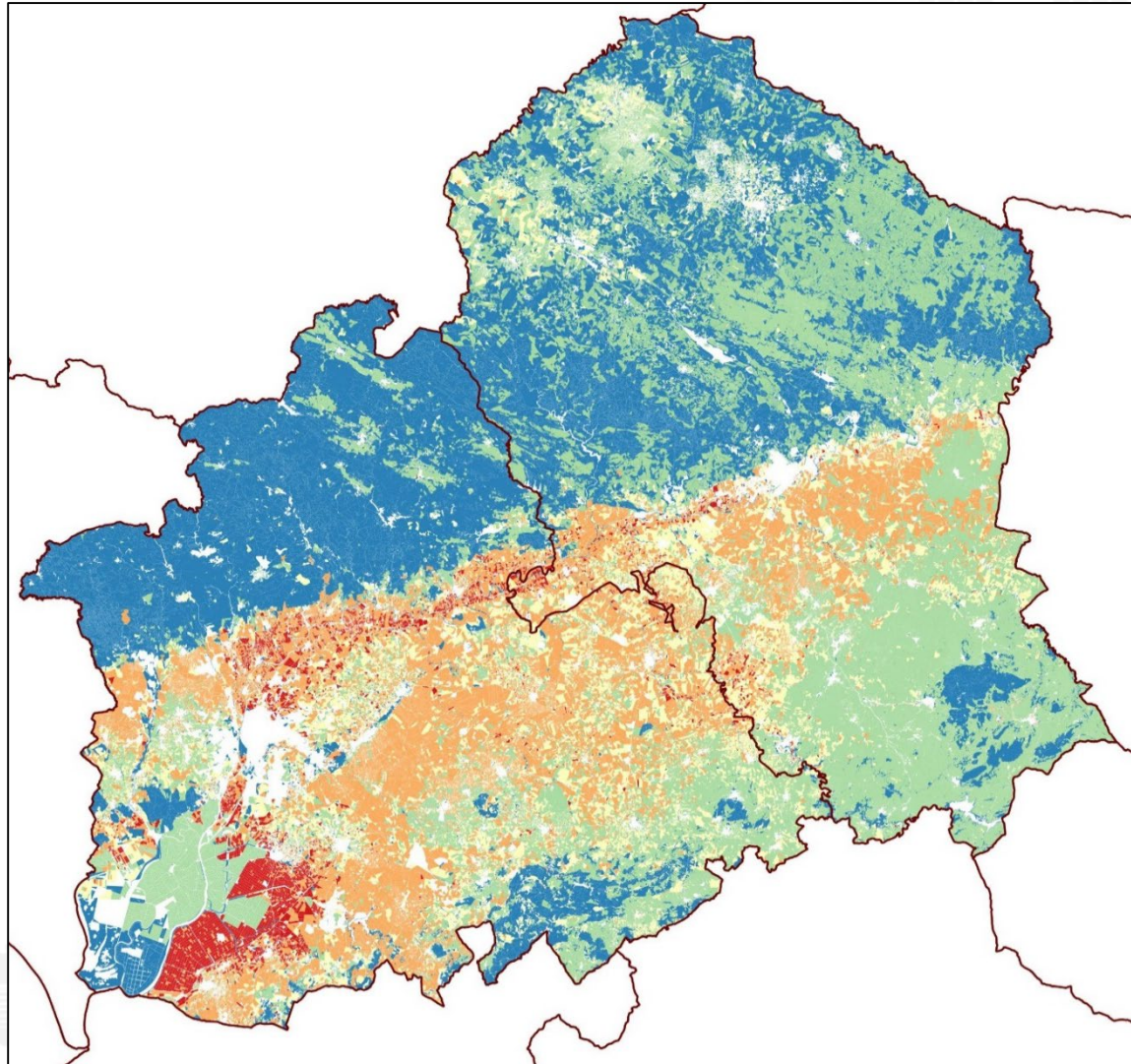
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Cadastre on rural land: Economic value

Result: potential productivity map

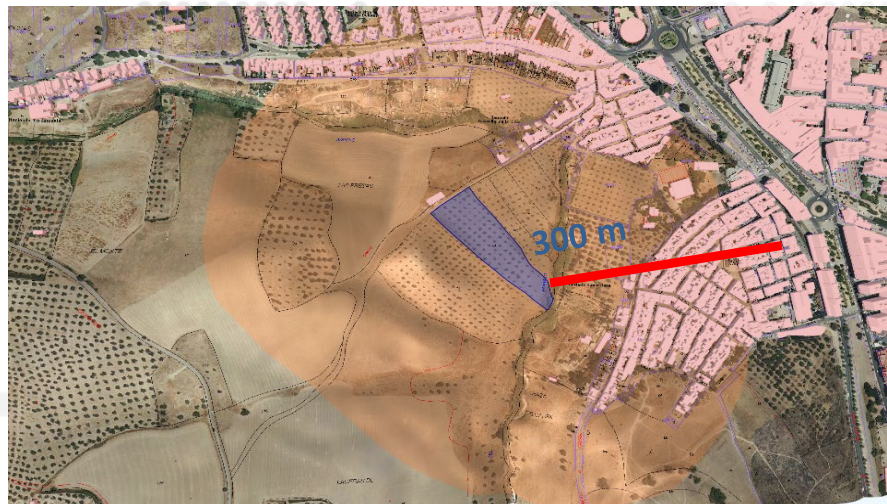
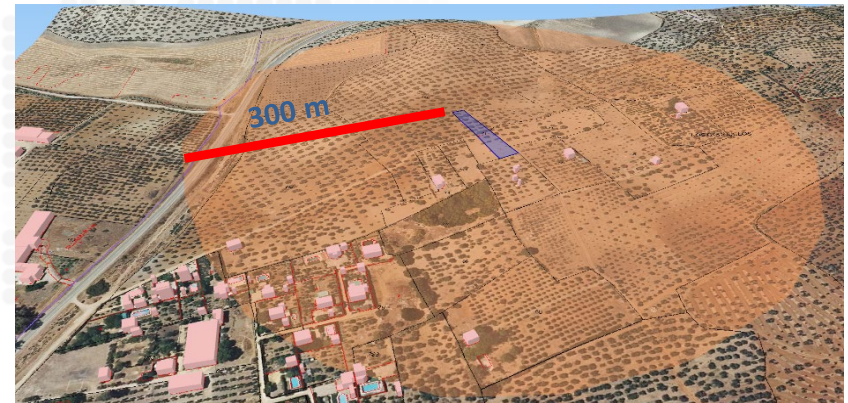
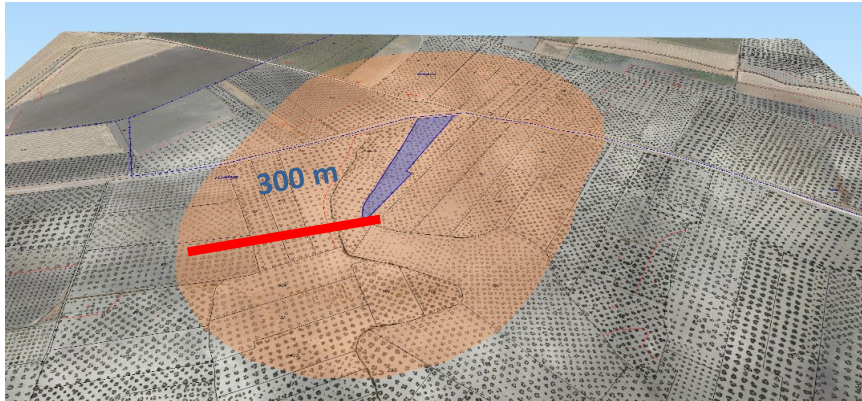


- Zone 5: marginal
- Zone 4: low productivity
- Zone 3: average productivity
- Zone 2: high productivity
- Zone 1: very high productivity

Cadastre on rural land: Economic value

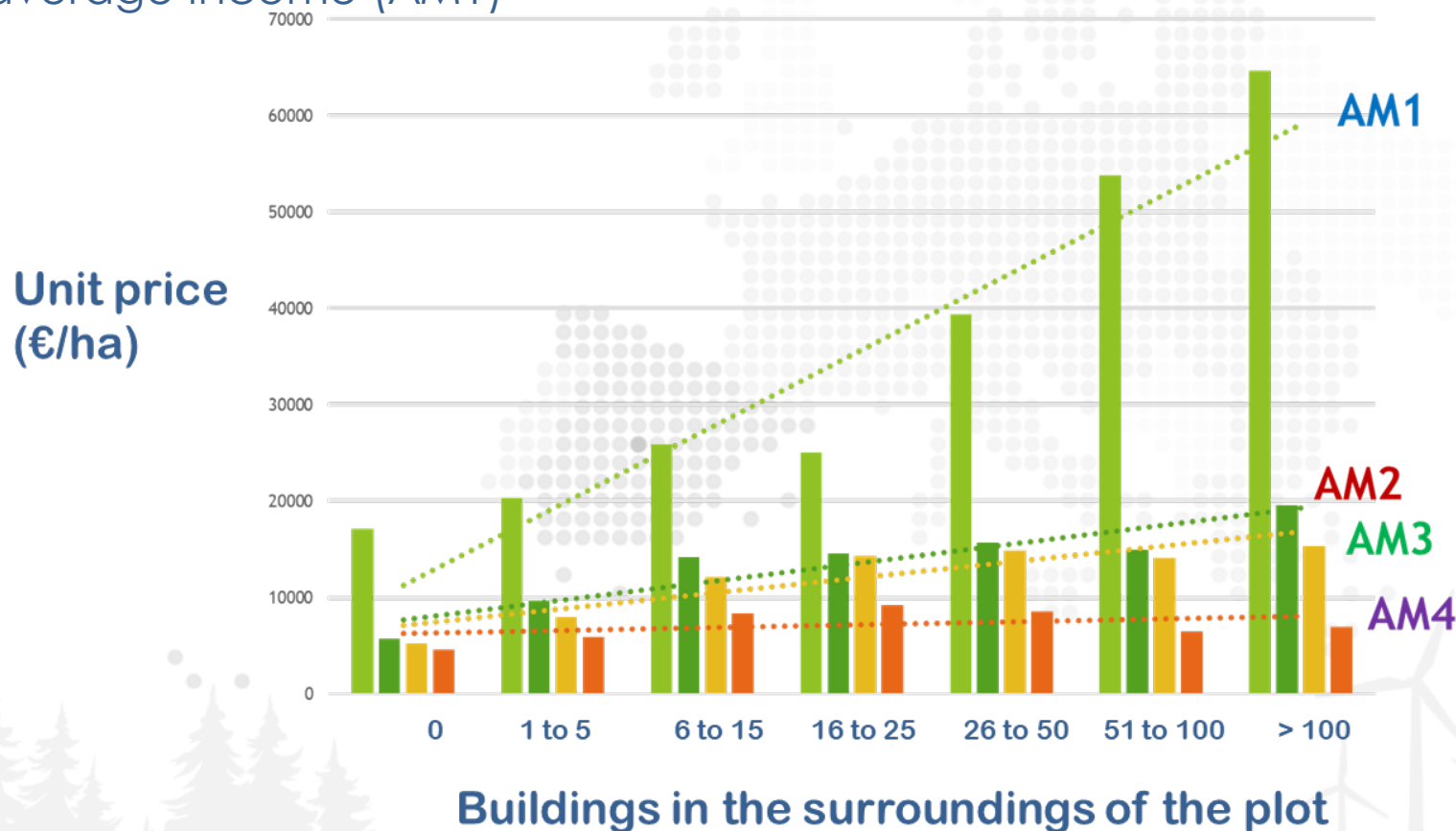
One of the characteristics considered: **URBAN PRESSURE**

Valuation variable: buildings in the surroundings of the parcel, according to the population and average income of each municipality

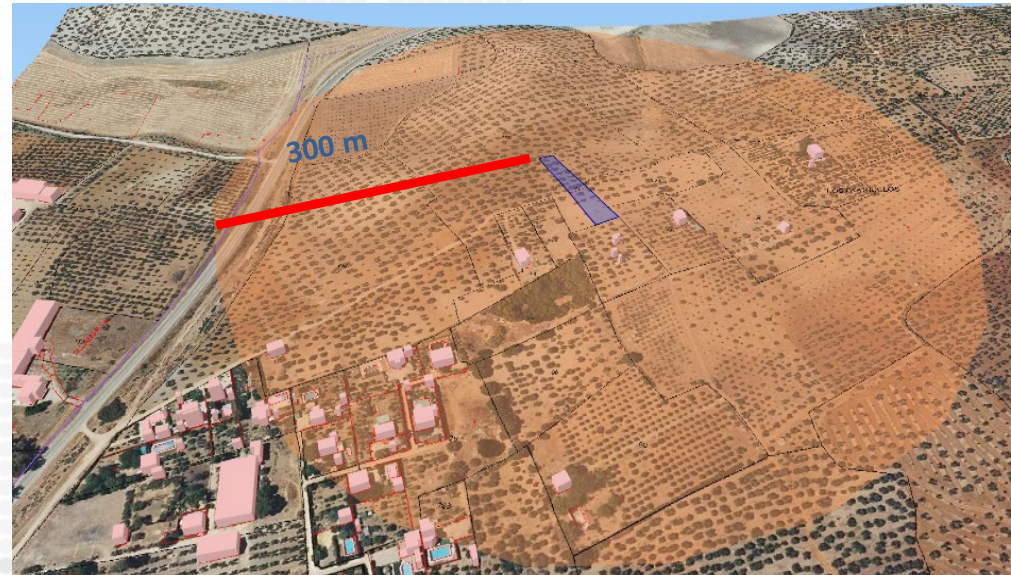
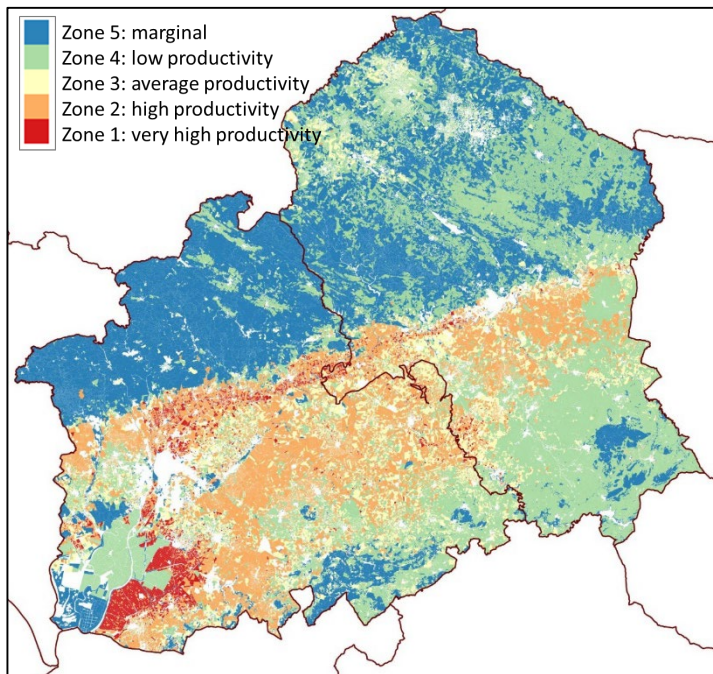


Cadastre on rural land: Economic value

The unit value increases according to the number of buildings in the surrounding of the parcel in municipalities with high population and high average income (AM1)

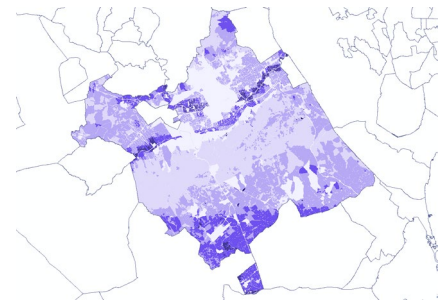


Cadastre on rural land: Economic value

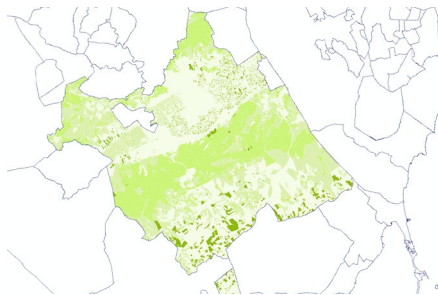


Based on the average value modules, the value of each parcel is obtained according to its agronomic, socioeconomic and location characteristics.

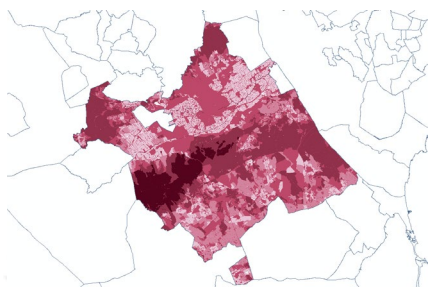
Cadaastre on rural land: Environmental value



PROVISIONING SERV.



REGULATING SERV.



CULTURAL SERV.



DGC ENVIRONMENTAL GOVERNANCE PLATFORM

- Development of a tool for decision making and resource management
- Non-monetary valuation of services: parcel classification.
- For each parcel within the territory.
- Maintaining historical data and monitoring the evolution.

TARGET

- Environmental value: new descriptive element of the cadastral parcel.
- Relevant for public fiscal policies deployment
- Giving visibility to the importance of the services provided by the parcels
- Priority: parcels for conservation



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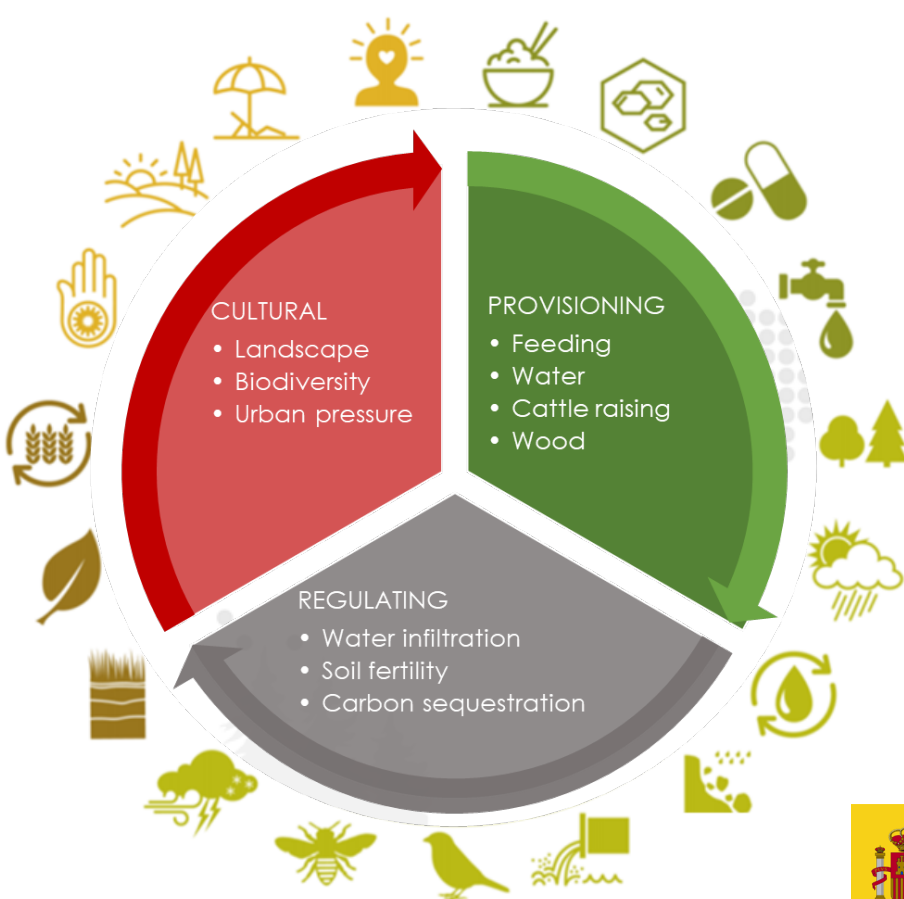
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FAO: *Ecosystem services* are the multitude of benefits that nature provides to society.



The most used and accepted definition is the one proposed in 2005 by the UN in the **Millennium Ecosystem Assessment**, being the benefits that ecosystems provide to human beings to realize themselves in all their facets.



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DE HACIENDA

DIRECCIÓN GENERAL
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Cadastre on rural land: Environmental value

Ecosystem services of provision: Those products obtained from nature for consumption or use, either directly or after processing. (Examples: Fresh water; Renewable fuels such as wood, Food,).



Regulating ecosystem services: Those that refer to ecological processes that improve or make our lives possible. (Examples: Maintenance of soil fertility; Improvements in air quality; Climate regulation, Regulation of the water cycle...).

Cultural ecosystem services: Those non-material values or benefits obtained from nature through personal or spiritual enrichment, cognitive development, reflection, enjoyment of nature or the aesthetic pleasures offered by the ecosystems themselves. (Examples: Cultural diversity of the territory; Cultural heritage; Recreational and tourist services; Value as a source of inspiration; Aesthetic value;...).

Cadastral on rural land: Environmental value

The General Directorate for Cadastre provides value to the 38,897,006 cadastral parcels, categorizing them according to their contribution to each type of service. For this purpose, it uses internationally recognized indicators, characterized by their quality, comprehensibility for society and by the availability of the information at the national level.

Information at the cadastral parcel level

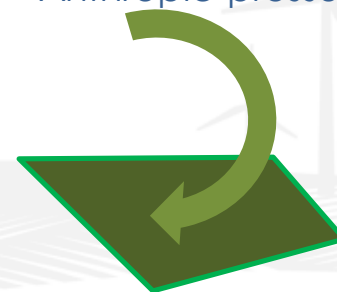
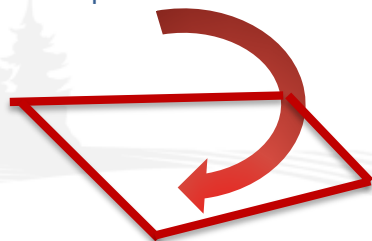


- Potential productivity
- Crop
- Water coverage
- Rainfall and evaporation
- Organic carbon
- Environmental unit
- Natural Protected Areas
- Degree of naturalness
- Ecological agriculture
- Anthropic Pressure



Indicators

- ✓ Feeding
- ✓ Livestock
- ✓ Wood
- ✓ Water
- ✓ Infiltration
- ✓ Fertility
- ✓ Organic carbon in the soil
- ✓ Degree of naturalness
- ✓ Biodiversity
- ✓ Anthropic pressure



Cadastral on rural land: Geo_legal Security



- Single map: Legal security
- CAP parcel structure
- Fight against fraud (CAP)
- Protection of the Public Domain
- Notaries (800,000 communications/year)
- Graphic base of the Land Property Register



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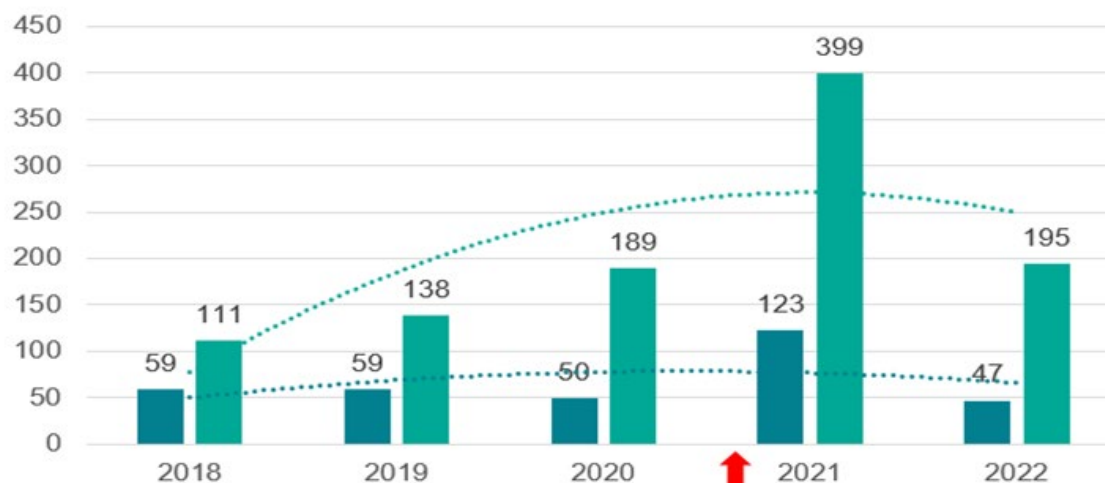
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A massive procedure by the Cadastre in the rural territory encourages real estate traffic

number of transmissions of rural parcels

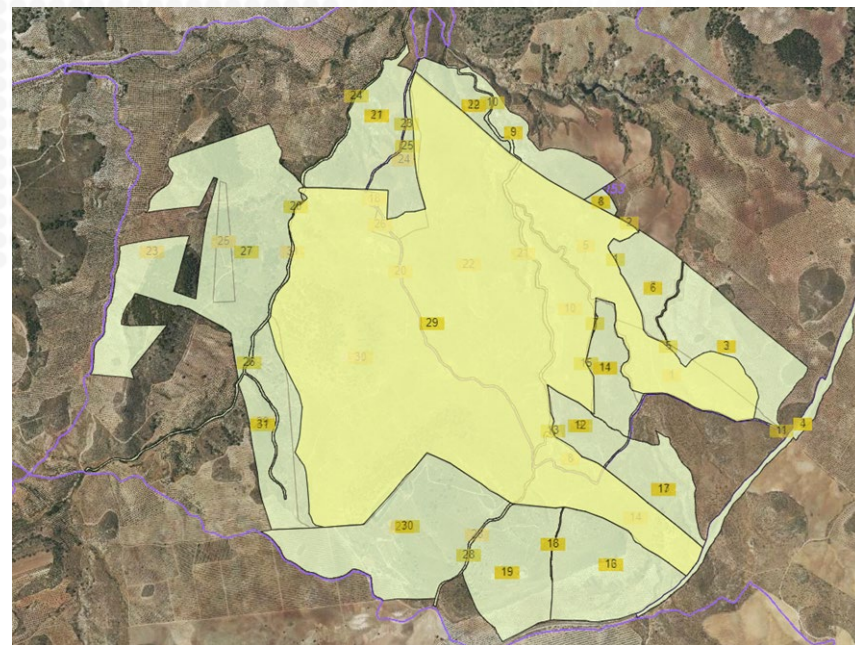
Belmonte



Massive procedure

The correct description in the Cadastre contributes to the protection of the Public Domain.

For example: public mountains or rural paths



Datos de la parcela

Polígono 1 Parcela 3 HUECO DE VALDEMARTIN.
MANZANARES EL REAL (MADRID)
Uso Agrario

Datos estadísticos

	Mínima	Media	Mediana	Máxima
Altitud (m)	1241.248	1823.36		2303.007
Pendiente (deg)	1.904	21.390	21.610	62.052
Pendiente (%)	3.324	39.169	39.613	188.485

Subparcelas

Código subparcela	Cultivo/Aprovechamiento	Intensidad productiva	Superficie (m ²)
0	MM PINAR MADERABLE	00	11958215



In Spain, legal reforms introduced in 2015 (Law 13/2015) established that the graphic description of real estate in the Land Property Register should use the georeferenced graphic representation based on the Cadastre.

Cadastral data must be the basis of a COMPLETE GEOSPATIAL infrastructure of a country in order to facilitate decision-making in public policies.

CADASTRAL PARCEL is the **TERRITORY MANAGEMENT UNIT**

- The parcel structure is continuous and complete
- It is permanently updated
- The Cadastre includes the name of the owner of the parcel, who is the one who makes decisions about his property.



Cadastre on rural land

Thank you very much for your attention!

luis.gonzalez-carpio@catastro.hacienda.gob.es

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