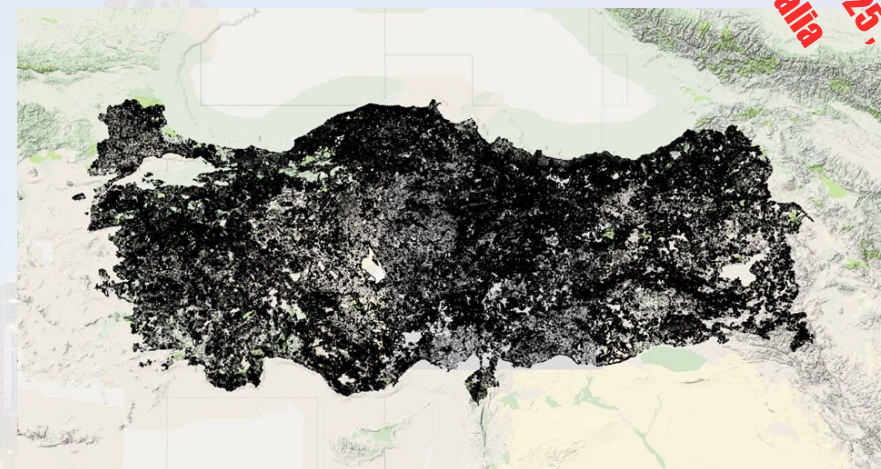


Turkish Cadastre: A Completed Yet Unfinished Endeavor – Does It Ever Truly End?

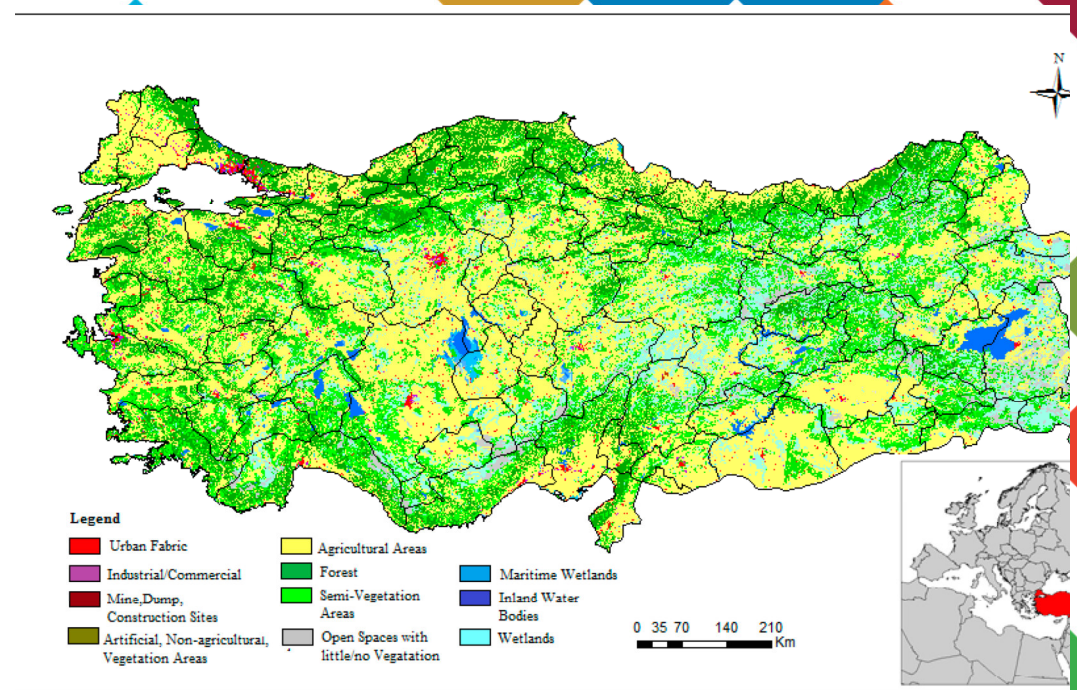
Umit Yildiz, Head of Property Valuation Department
Ozgen Sadu Caglar, Head of Cadastre Department
Omer Sinan Baycelebi, Deputy Director General



General Directorate of Land Registry and Cadastre, Türkiye

General Information about Türkiye

- 784.000 sq km (770.000 land, 14.000 water)
- 37th land cover
- 84 million population
 - %77 rural, %23 urban (1927) (13.6 m)
 - %77 urban, %23 rural (2013)
 - Now: %93 urban
- Ottoman Period-Land Regulations
- Republic: 1923, Civil Code : 1926



General Information about TKGM (GD of Land Registry and Cadastre)

From the tradition of Defterhane to the General Directorate of Land Registry and Cadastre THE INSTITUTION THAT WROTE THE HISTORY OF PROPERTY

- Defterhane, where the historical origins of the GDLRC lie, was first mentioned in the Organisation Law of Sultan Mehmet the Conqueror.
- Defterhane was transformed into a land registry organisation under the name **Defterhane-i Amire Kalemî** on 21 May 1847.
- After the proclamation of the Republic, it was renamed "**General Directorate of Land Registry**" in 1924.
- Following the establishment of the cadastral organisation in 1926, it was renamed "**General Directorate of Land Registry and Cadastre**".

tkgm.gov.tr


General Directorate of
Land Registry and Cadastre

We are Everywhere in Türkiye

We offer uninterrupted service with our 1.077 units.

23

REGIONAL
DIRECTORATES

81

CADASTRE
DIRECTORATES

972

LAND REGISTRY
DIRECTORATES

1

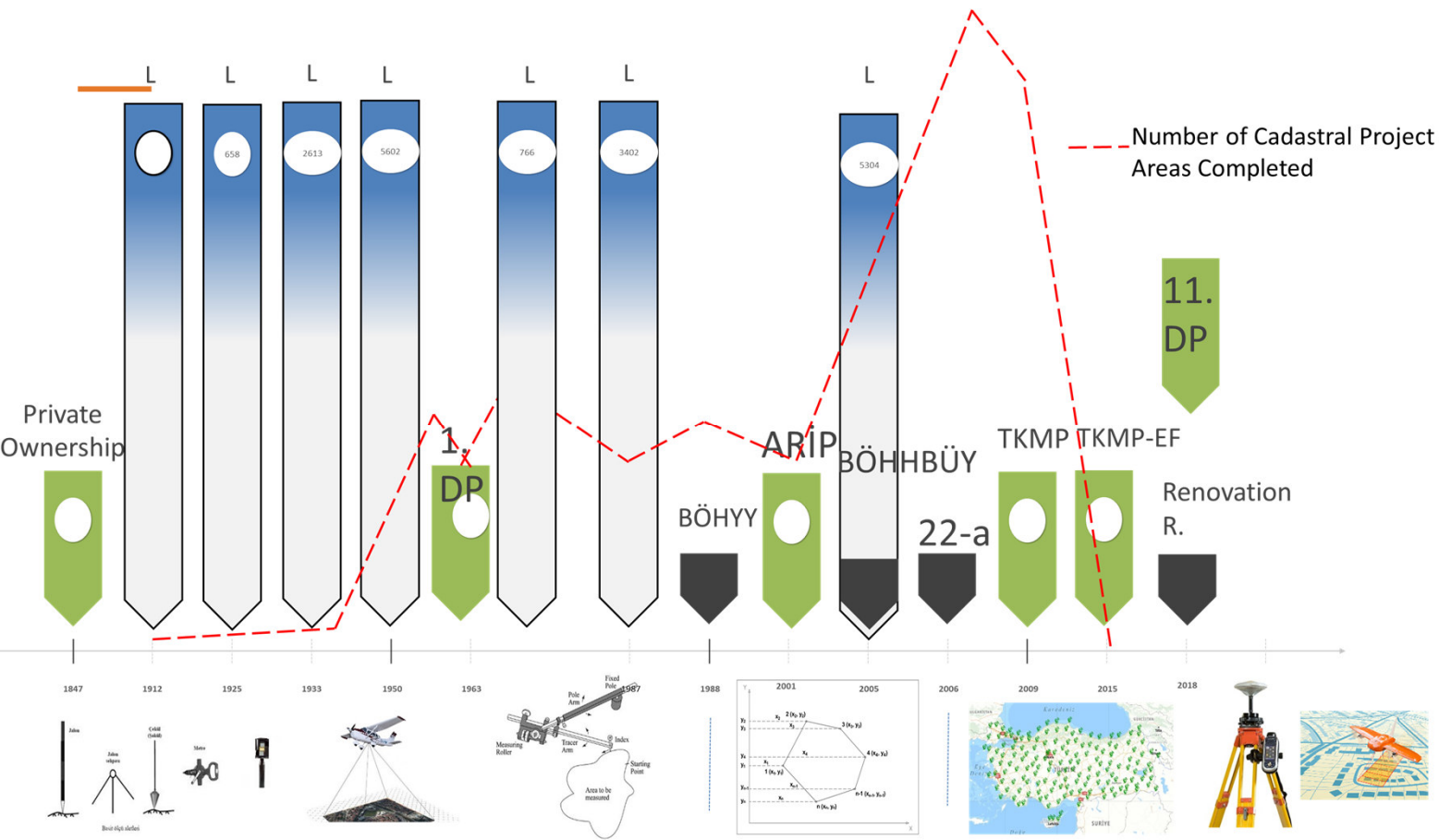
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General Directorate of
Land Registry and Cadastre

History and Fundamentals of Cadastre in Türkiye



Cadastre; a tool for establishing land registries

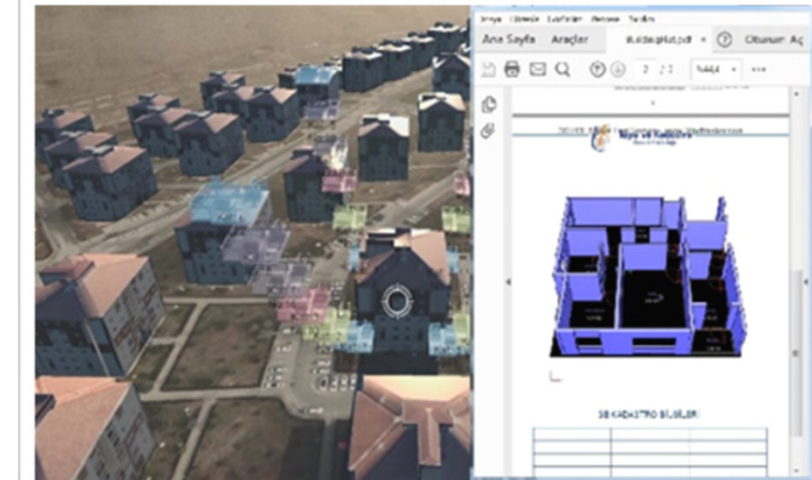
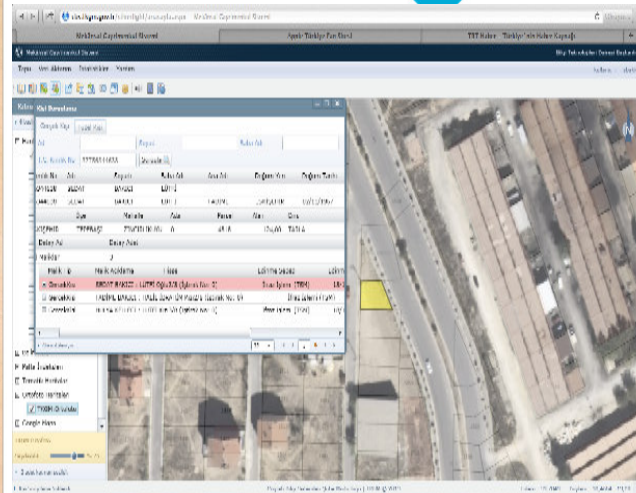
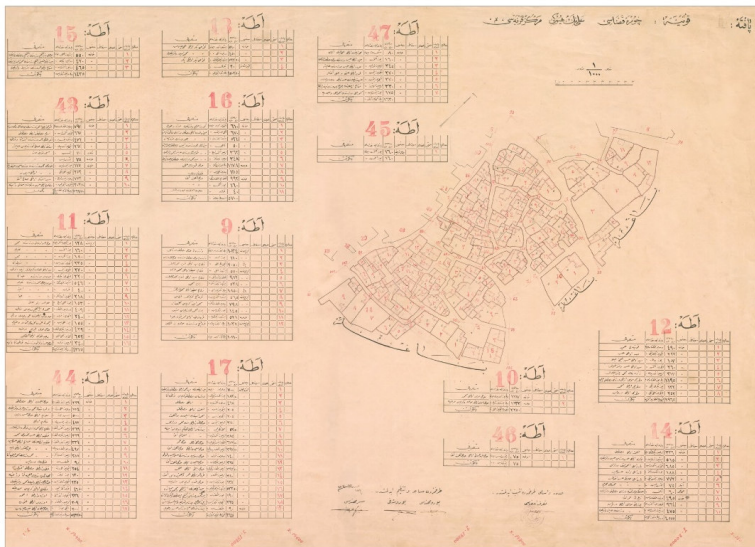


Land registry → under the state guarantee



Ownership, Easements (personal/real), incumbrance, liens (mortgage etc), restrictions (public, private) and responsibilities (Civil Code Article 1000)

The main purpose: Establishment of Land Registries
+++ Creation of Infrastructure of the Spatial Information System

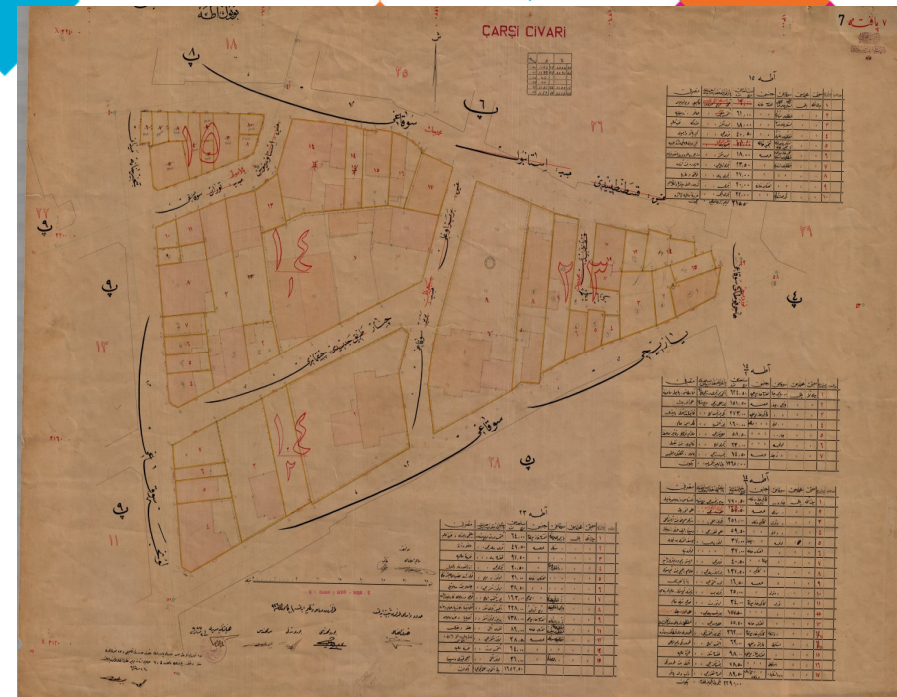


Turkish Land Registry and Cadastre System

TAPU KÜTÜĞÜ

Tapu No	Mülkiyet No	YERLİKLERİ		GAYRİMENKULÜN NİTELİĞİ			
Ada No	Pafta No	Pafta No	Pafta No	Pafta No	Pafta No	Pafta No	Pafta No
Parcel Identifiers and Address Information		Parcel Area Information		Type of Property			
SÖZLEŞME		MÜLKİYET		MÜLKİYETİN İZİNİ VEREN VE GAYRİMENKULÜN İHTİSASİ KULLANIMINDA			
İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011	İhtisastan Kararı 1009-100-1011
Annotations and Court Decisions		Ownership Information and information about acquisition.		Easements, Usufructs			

BEYANLAR									
Special Explanations									
GAYRİMENKUL REHİN HAKLARI									
Tapsi Tarihini Açıklamak Adı, Soyadı ve Bina Adı		Bina Tarihini Açıklamak Yılı		Bina Tarihini Açıklamak Yılı		Bina Tarihini Açıklamak Yılı		DÖVİNCİLER (Rehin hakları için)	
Information about Lien Rights									





Parcels
Buildings - Improvements
Easements
Right of Way
Park Areas
Public Law Restrictions

Sayfa No		Pasifa No	YÖZÖLÇÖMÜ				GAYRİMENKULÜN NİTELİĞİ			
Eski Sayfa No		Ada No	Ha	M ²	Dm ²	Değişiklik				
Yeni Sayfa No		Parsel No								
Mabaat Sayfa No <td>Semti</td> <td></td> <td></td> <td></td> <td></td> <td colspan="4"></td>		Semti								
Bağımsız Bölümün Sayfa No <td>Mahalləsi</td> <td></td> <td></td> <td></td> <td></td> <td colspan="4"></td>		Mahalləsi								
		Köyü								
		Mevkii								
		Sokağı								
ŞEHİLER		MÜLKİYET				HAKLAR VE GAYRİMENKUL MÜKELLEFİYETLERİ				
Medeni Kararın Madde 1009-1010-1011		Malikın Adı, Soyadı ve Baba Adı	Mal Sahipleri Sayı No	Edinme Nedeni, Satış Bedeli	Kayıt Tarihi	Yevmiye No	Harf	H: Hak M: Mükellefiyet	Kayıt Tarihi	Yevmiye No

BEYANLAR									
GAYRİMENKUL REHİN HAKLARI									
Harf	Rehin Mersisi	Tesis Tarihinde Alacaklıların Adı, Soyadı ve Baba Adı	Borç Miktarı	Faiz %	Devre	Müddet	Kayıt Tarihi	Yevmiye No	DÜŞÜNCELER (Rehin Hakları İçin)
			TL						



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Brisbane, Australia 6–10 April

Management of Condominium Data

Air Rights, Floor Rights

Pre-
Republic

CONDOMINIUM LAW -
1964

18.7 MILLION
2018

CIVIL
CODE -
1926

Acceptance of pre-republic
era

2015

12 MILLION

2024

24.2 MILLION

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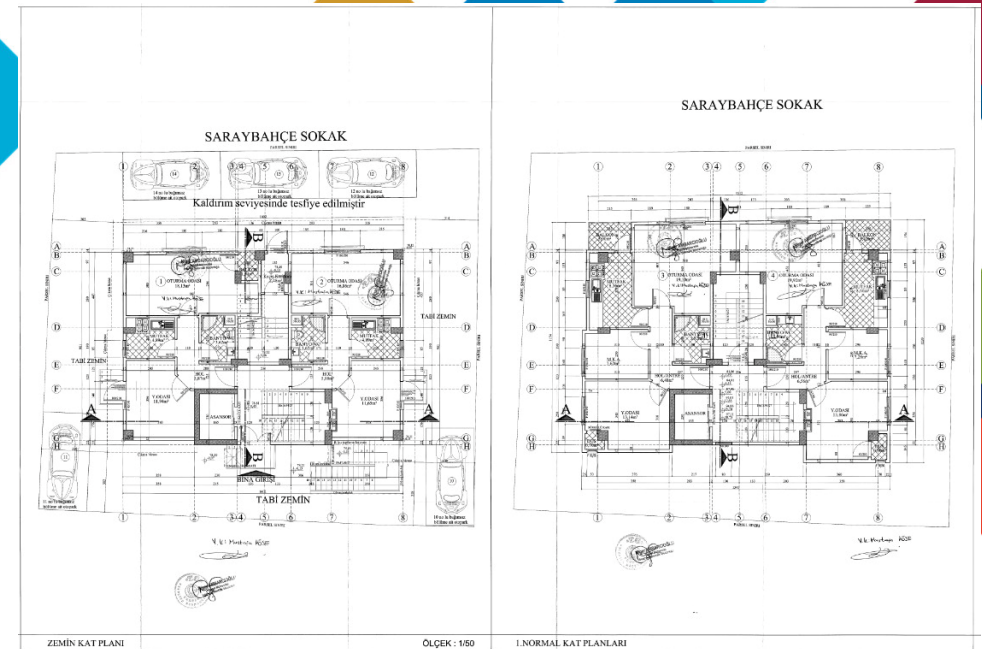
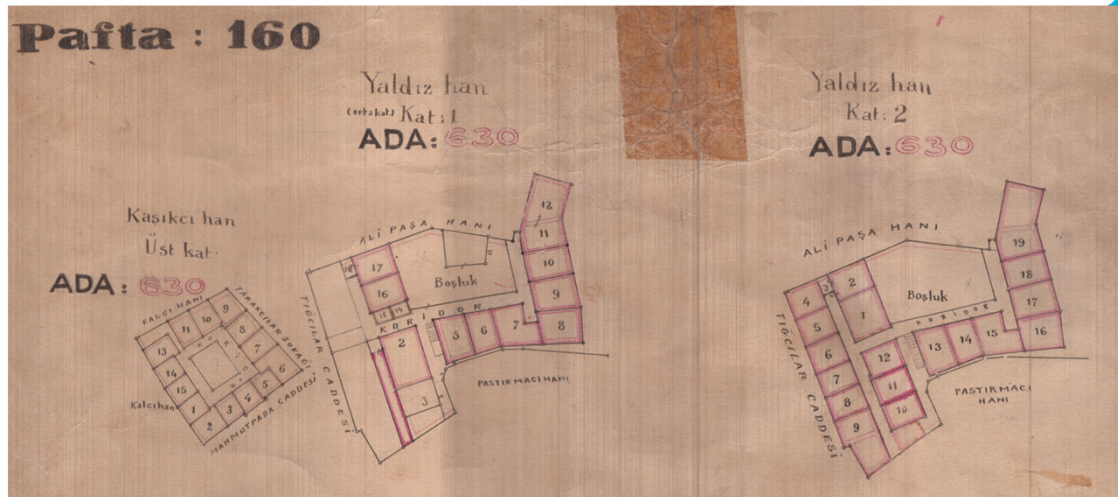
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Management of Condominium Data



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Australia

The Project that Gives Property a Dimension: **3D CADASTRE**

- With **3D cadastre**, we produce **3D building models** using architectural projects by producing high resolution three dimensional (3D) city models based on oblique air images of the urban areas.
- With the Project, we integrate the models produced with land registry and cadastre data, and we offer our country the technology of the future, enabling the buildings to be seen and examined in three dimensions by all.

PRODUCING 3D CITY MODELS USING PHOTOGRAMMETRIC METHOD



AERIAL IMAGERY



IMPROVING
3D MODELS



IDENTIFYING
INDEPENDENT
SECTIONS AND
BUILDING MODELS

PRODUCING 3D CITY MODELS USING ARCHITECTURAL PROJECTS



SUPPLY OF
ARCHITECTURAL
PROJECTS



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Does Cadastre Ever Truly End?

- People to Land Relations?
- Nature to Land (or Land Registers) Relations?
- Technical Standards - Uncertainty Perception ?
- Data Standardization and Interoperability ?



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Does Cadastre Ever Truly End?

- People to Land Relations?





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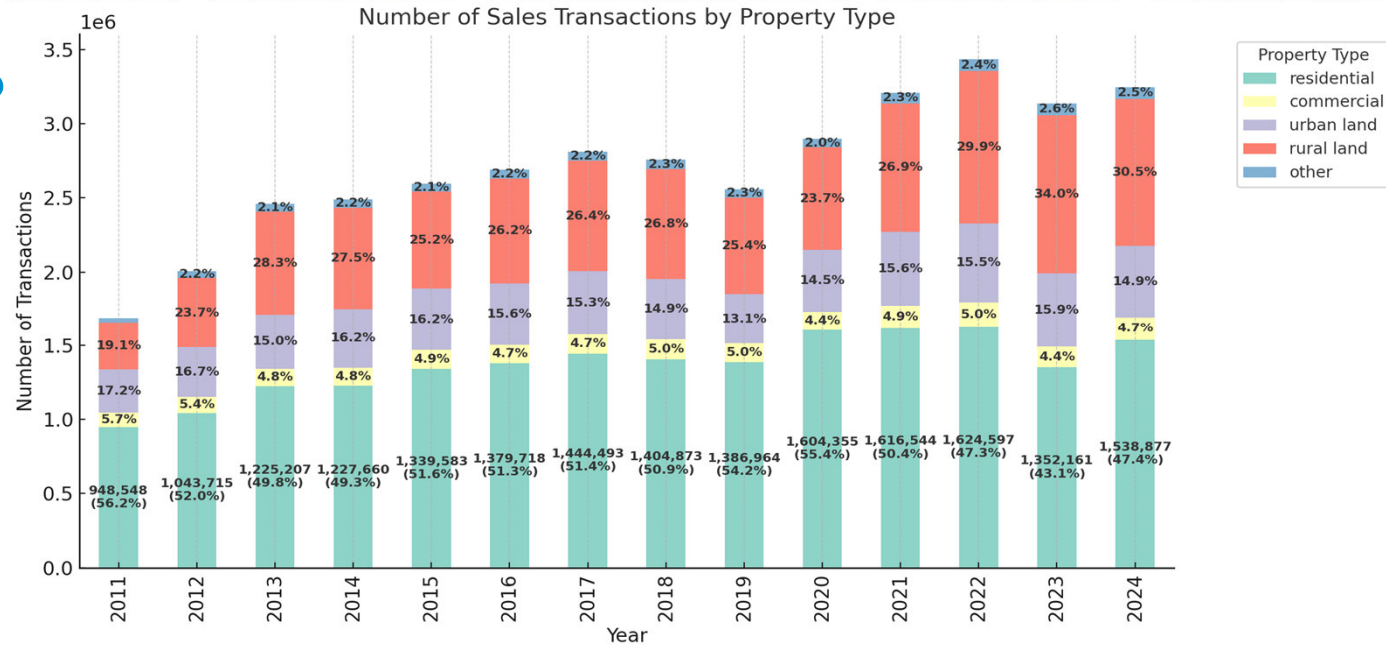


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Does Cadastre Ever Truly End?

- People to Land Relations?



Construction permits

Year	Number of building	Annual change (%)	Number of dwelling unit	Annual change (%)	Floor area (m ²)	Annual change (%)
2022	127 819	-7,7	700 884	-3,5	146 197 251	-3,5
2023	139 659	9,3	859 202	22,6	168 391 174	15,2

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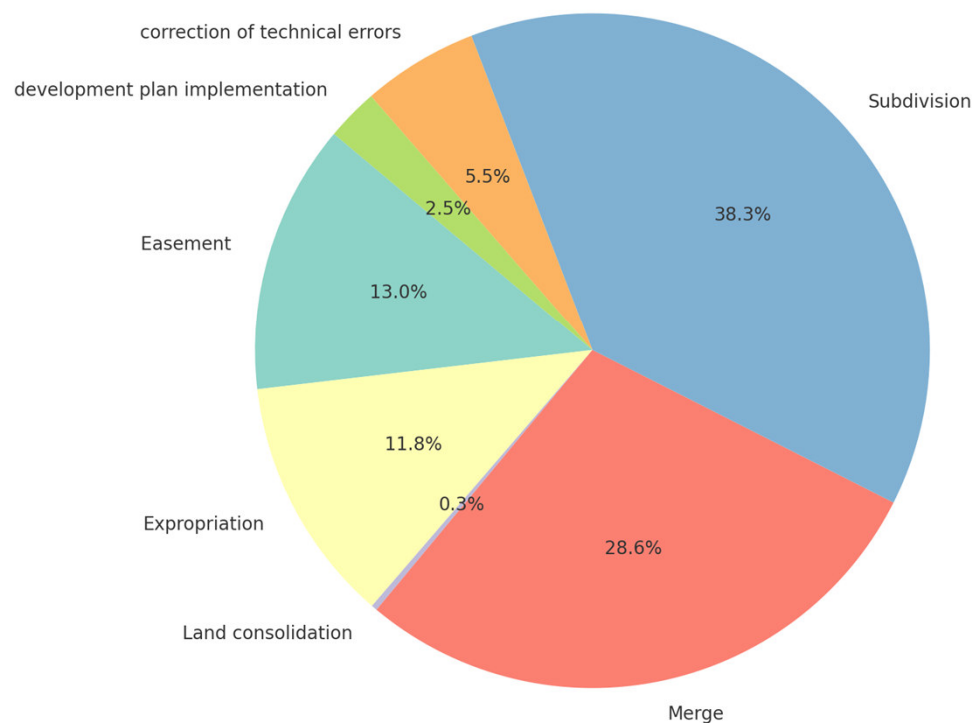
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Does Cadastre Ever Truly End?

- People to Land Relations?

Distribution of Cadastre Applications in 2024
Total: 269,173





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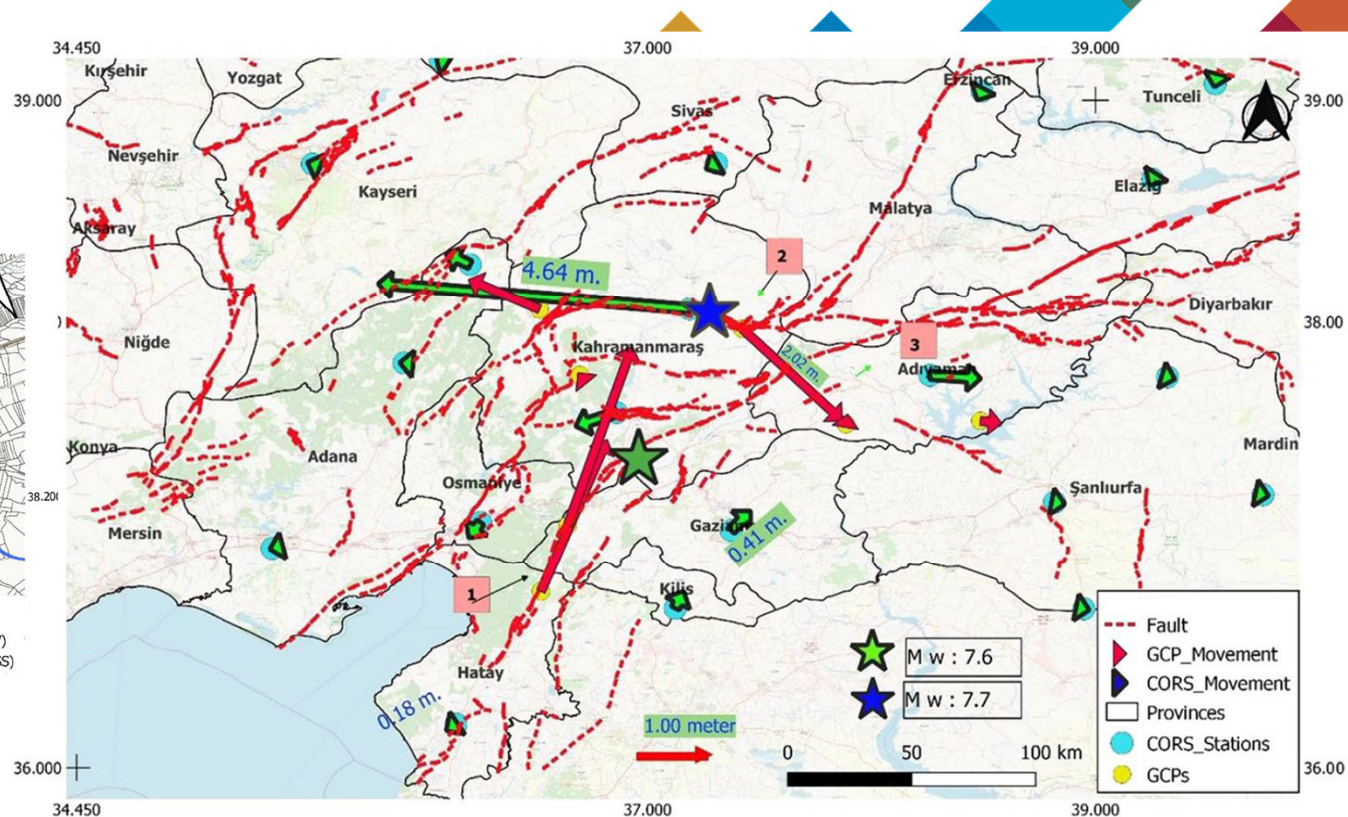
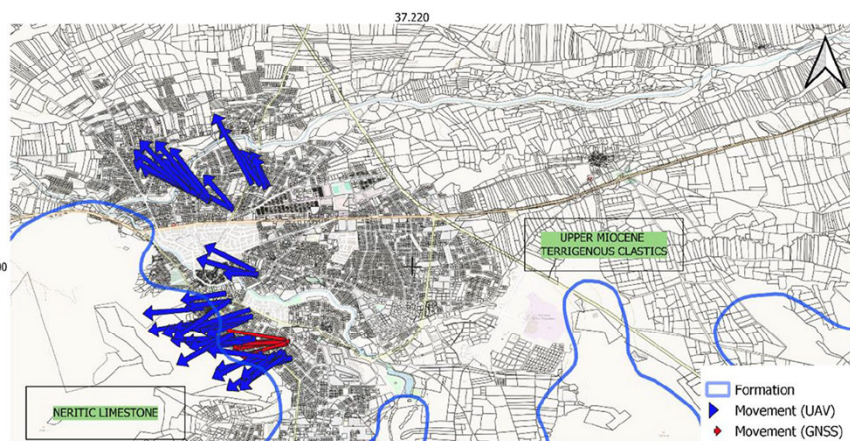


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Does Cadastre Ever Truly End?

- Nature to Land Relations?



Yildiz, U., Gokceoglu, C., Kocaman, S., 2024. Impact of Geohazards on Cadastral Data: An Assessment after 6 February 2023 Kahramanmaraş Earthquakes (Turkiye), Natural Hazards

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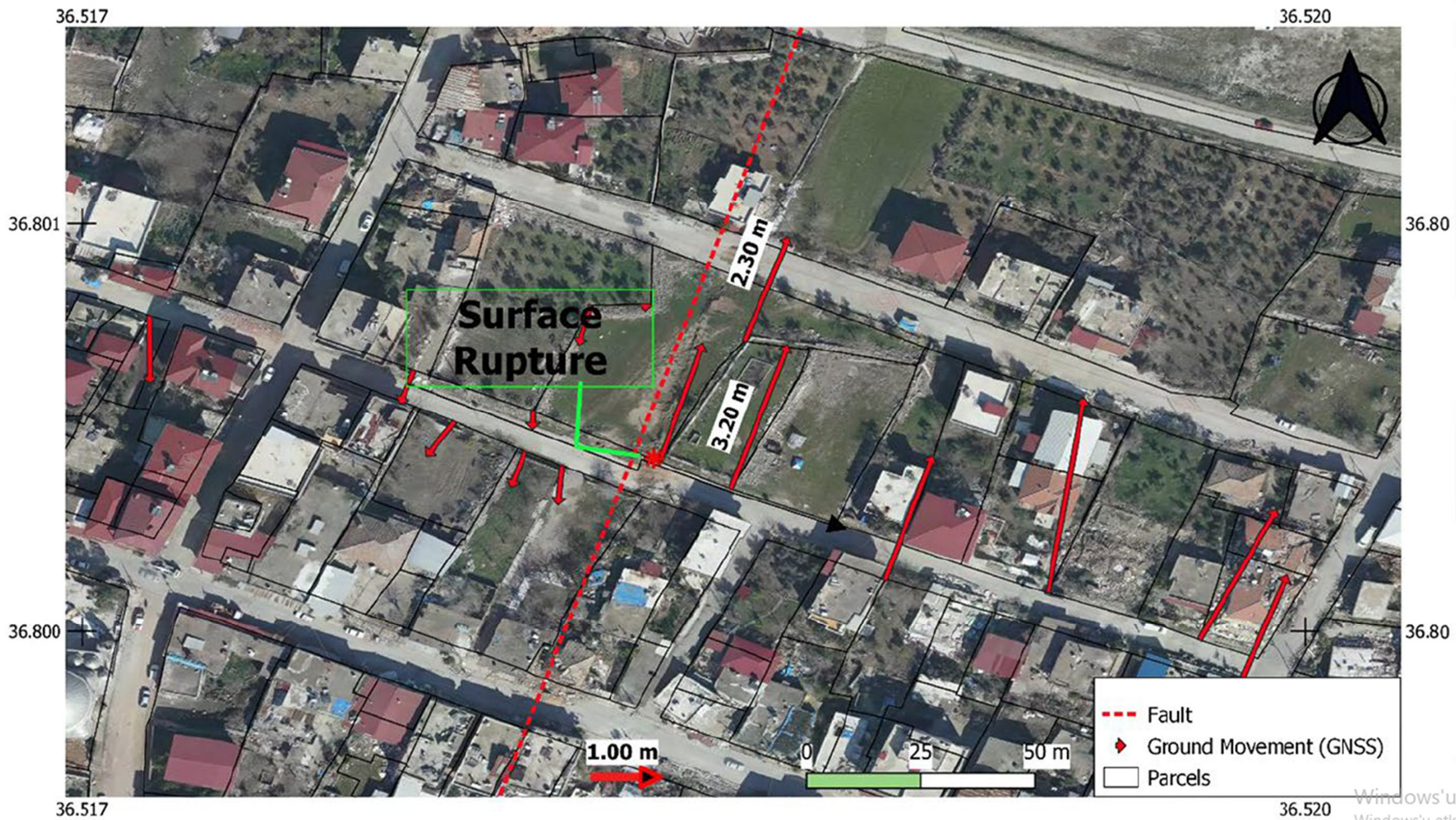
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Does Cadastre Ever Truly End?

- Technical Standards, Approaches ?

Court stated that the State violated the applicant's property rights if the parcel area, recorded in the land registry does not reflect the actual parcel area.



Gürtas, Yapi Ticaret ve Pazarlama A.Ş / Turkey (Application No: 40896/ 05)

A summary of the cadastral regulations mentioning parcel area and tolerance calculations.

Legislation	Issue date	Area Calculation Methods	Method Selection Criteria	Tolerance calculation method	Remarks
Technical Regulation on Cadastral Surveying	1948	Coordinates, Thompson, Planimeter	Geographical location, value, shape	Calculation approach and classification of parcel taken into consideration.	The first technical regulation in Turkey.
Regulation about technical part of land registration	1951	Planimeter	None	Single formula.	The regulation was prepared for rural (lower land value) areas.
Regulation about technical part of land registration	1968	Thompson, Planimeter	Shape, size	Calculation approach and classification of parcel taken into consideration	
Regulation for creation of maps and plans with 1/2500 and larger scales	1974	Coordinates, Thompson, Planimeter, Measurement-based, Map-based	Geographical location, shape, value, size		Flexible approach as defined in fit-for Purpose Land Administration concept.
Production Regulation of Large-Scale Maps	1988	Coordinates, Planimeter	Geographical location		Lack of definitions in terms of area tolerances for parcels.



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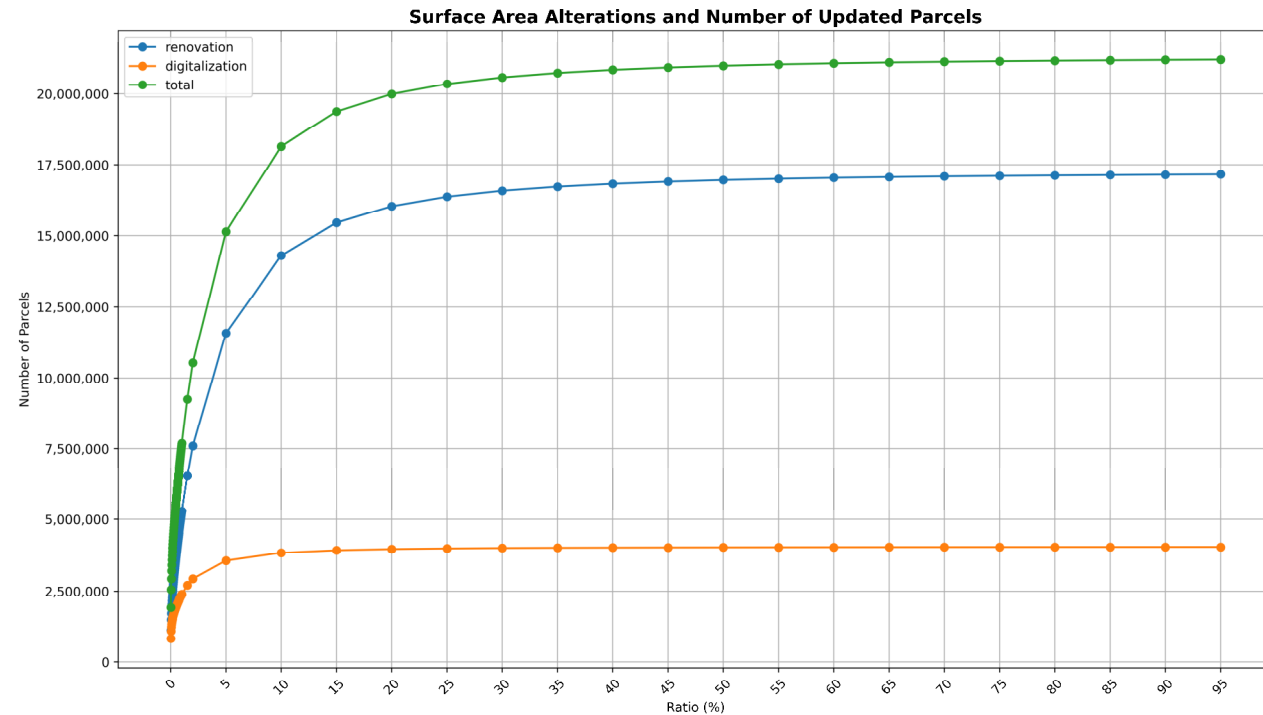
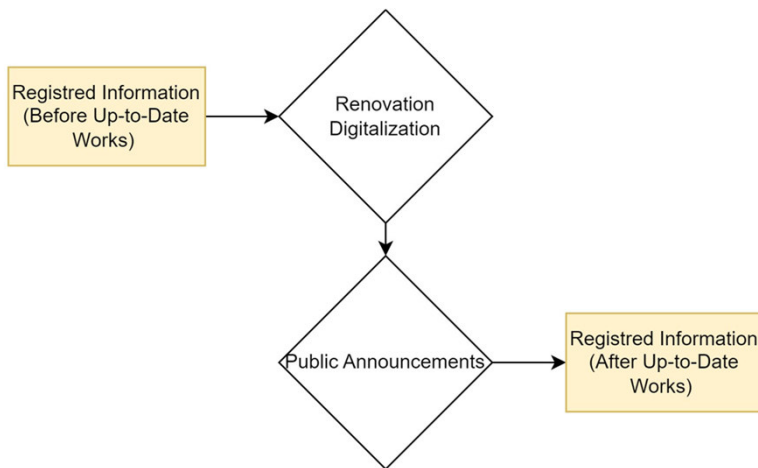


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Does Cadastre Ever Truly End?

- Technical Standards, Approaches ?



Yildiz, U., Gürel, M., Kocaman, S. (2022). State liability and uncertainty perception on cadastral parcel area registry in Turkey. Land Use Policy, 116, 106075.

Yildiz, Ü., Gürel, M., Kocaman, S., & Zevenbergen, J. A. (2022). Possible Negative Legal Impacts on Cadastral Work Due to Lack of Perception on Spatial Uncertainty. In 27th FIG Congress 2022: Volunteering for the future-Geospatial excellence for a better living (p. 11389).



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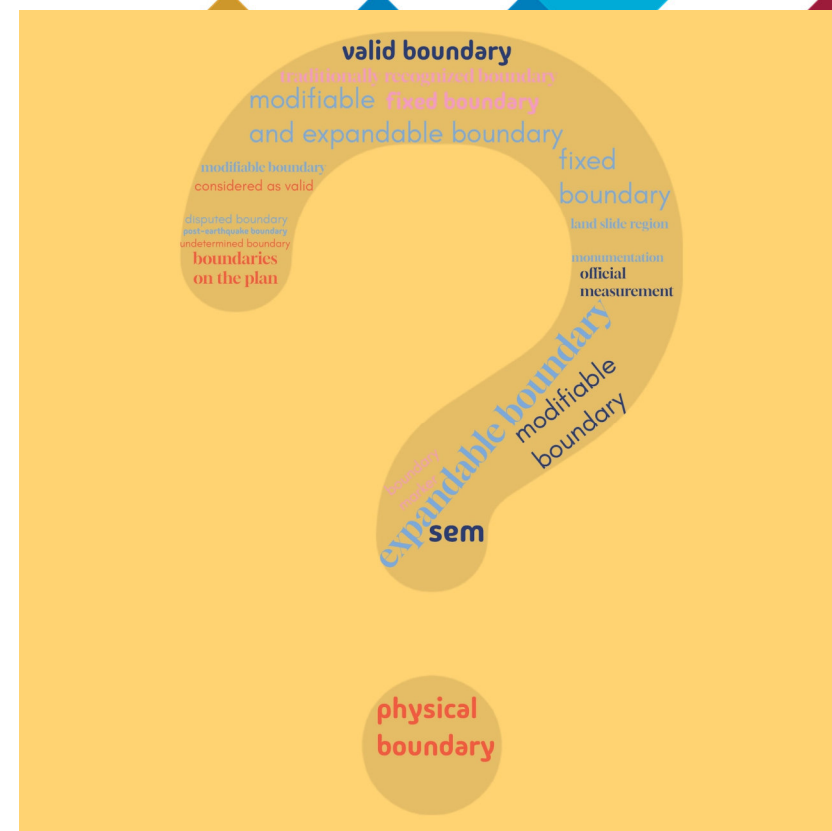
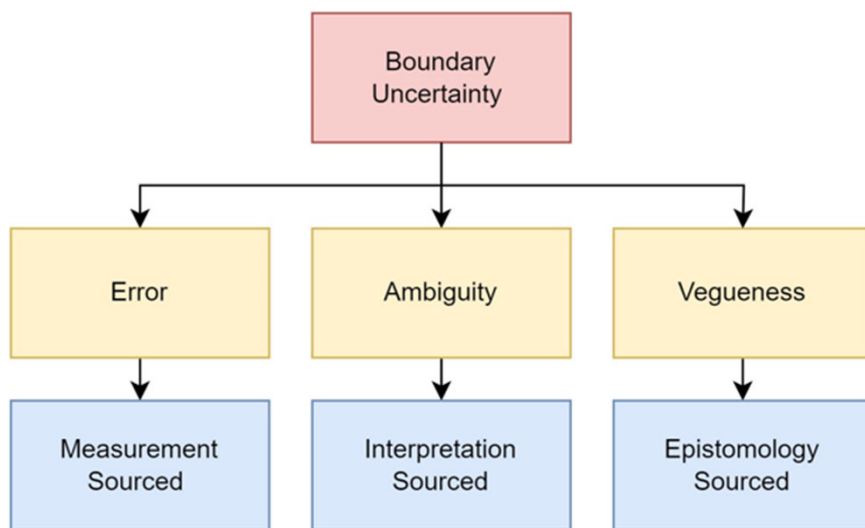
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Does Cadastre Ever Truly End?

- Technical Standards, Approaches ?



Yildiz, U. Handling Boundary Uncertainty in Cadastre, PhD Dissertation, Hacettepe University

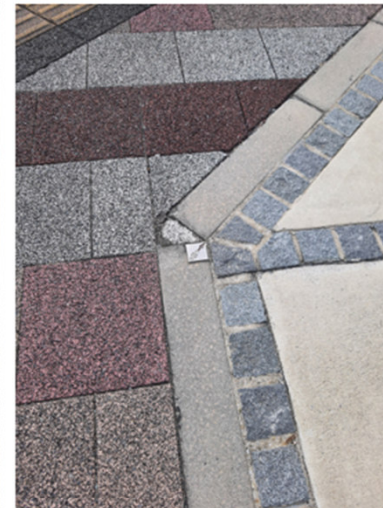
Does Cadastre Ever Truly End?

- Technical Standards, Approaches ?



Does Cadastre Ever Truly End?

- Technical Standards, Approaches ?



		US Dollar (*1000)	Share
Vergi Kategorileri	Tax Categories	3.355.998,47	100,00%
Mülkiyet Üzerinden Alınan Diğer Vergiler	Taxes	1.063.590,36	31,69%
Kamu Harcamalarına Katılma Payları	Participation Charges	203.889,07	6,08%
Tapu Harçları	Land Registry Fees	2.088.519,04	62,23%
Mülkiyet Üzerinden Alınan Diğer Vergiler	Taxes Levied on Immovable Properties	1.063.590,36	100,00%
Değerli Konut Vergisi	Valuable House	2.550,18	0,24%
Bina Vergisi	Building	785.741,08	73,88%
Arsa Vergisi	Urban Land	264.227,76	24,84%
Arazi Vergisi	Agri Land	10.522,25	0,99%
Çevre Temizlik Vergisi	Environment	549,09	0,05%
Kamu Harcamalarına Katılma Payları	Participation Charges for Road, Water and Sewage Expenses	203.889,07	100,00%
Kanalizasyon	Sewage	39.861,86	19,55%
Su Tesisleri	Water	20.307,85	9,96%
Yol	Road	54.844,20	26,90%
Diğer	Other	88.875,17	43,59%



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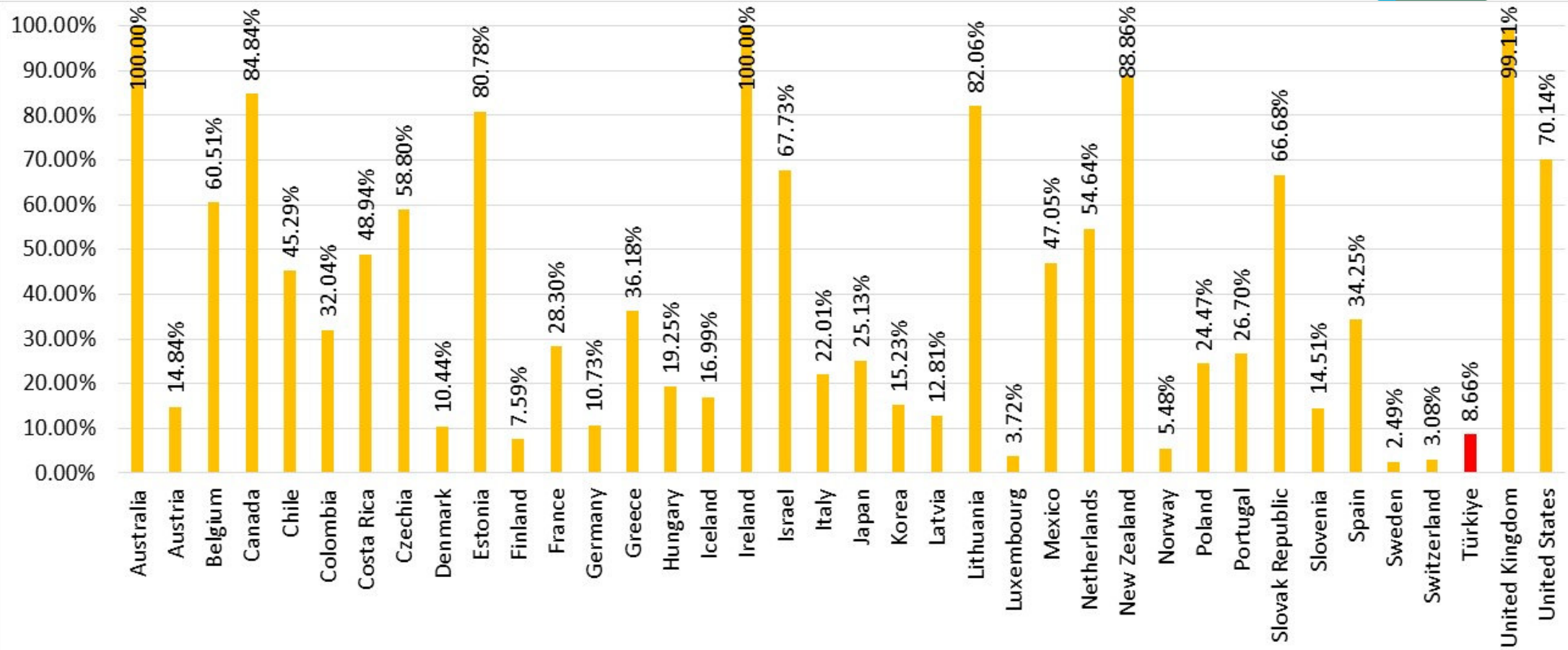


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FIT FOR PURPOSE PROPERTY VALUATION APPROACH (?)

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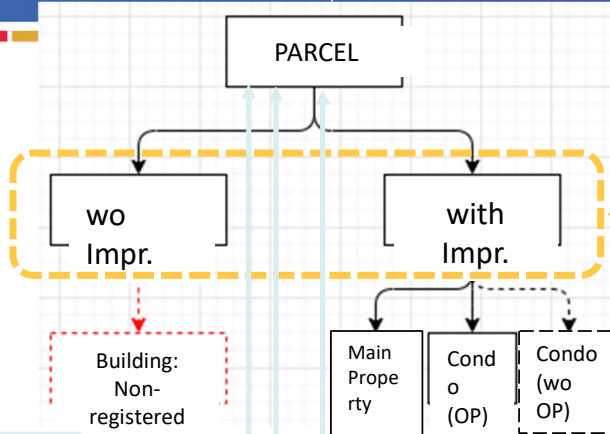
TAKBIS

- The parties
- RRR
- Type (on regist. date)
- Price



MEGSIS

- Geom (parcel + regist. building)
- Standardized Parcel type (land, forest, ...)



3B

BUILDING
(photogrametric)

BUILDING
(Architect. Proj.)



External Resources



e-PLAN
(Ministry)

Municipalities

Ministry of Agriculture



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