



THE ROLE OF LAND REGISTRY AND CADASTRE SYSTEM REGARDING INFRASTRUCTURE DEVELOPMENT IN TURKIYE AND CHALLENGES

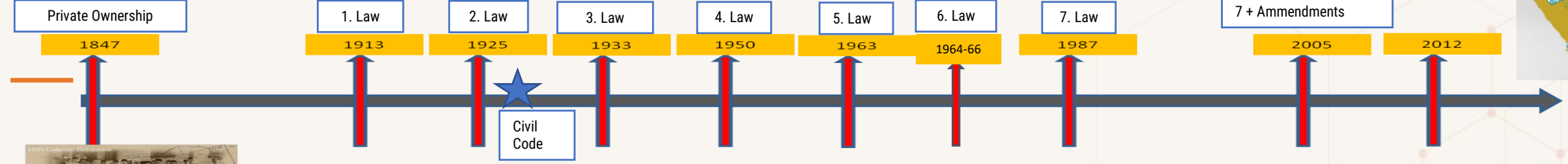
**Umit Yildiz
Cadastral Department**



PRESENTATION PLAN

1. Land registry and cadastre system in Turkiye
2. Transparency of Cadastre in Turkiye
3. Cadastre and Infrastructure Development in Turkiye
4. Ongoing projects
5. Future challanges
6. Energy generation related innovations and challanges in Turkish Cadastre

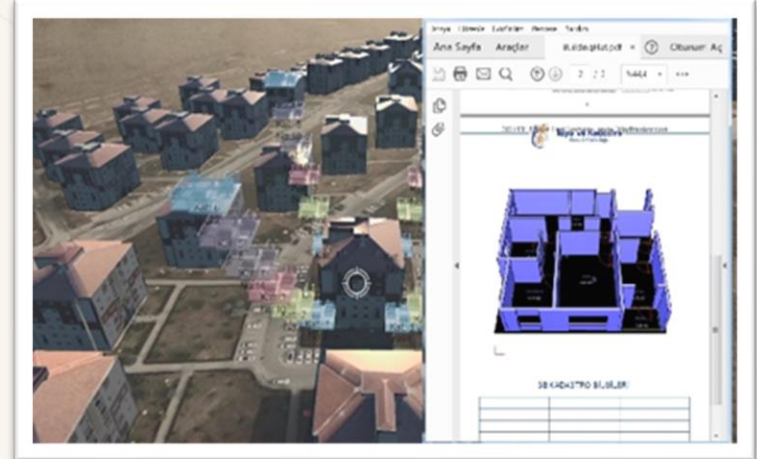
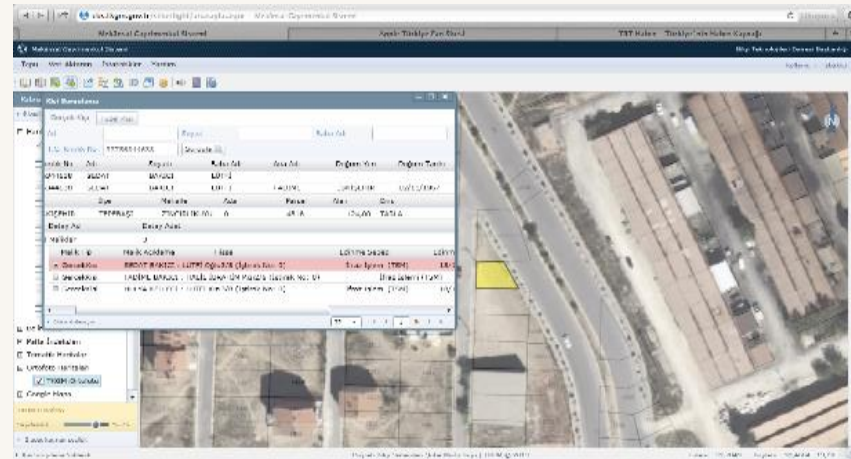
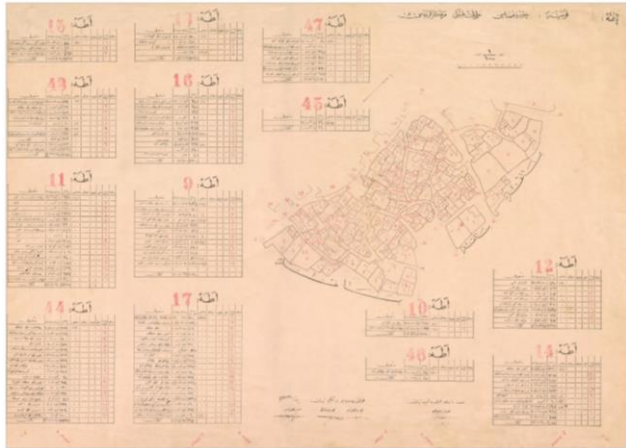
CADASTRE IN TURKIYE



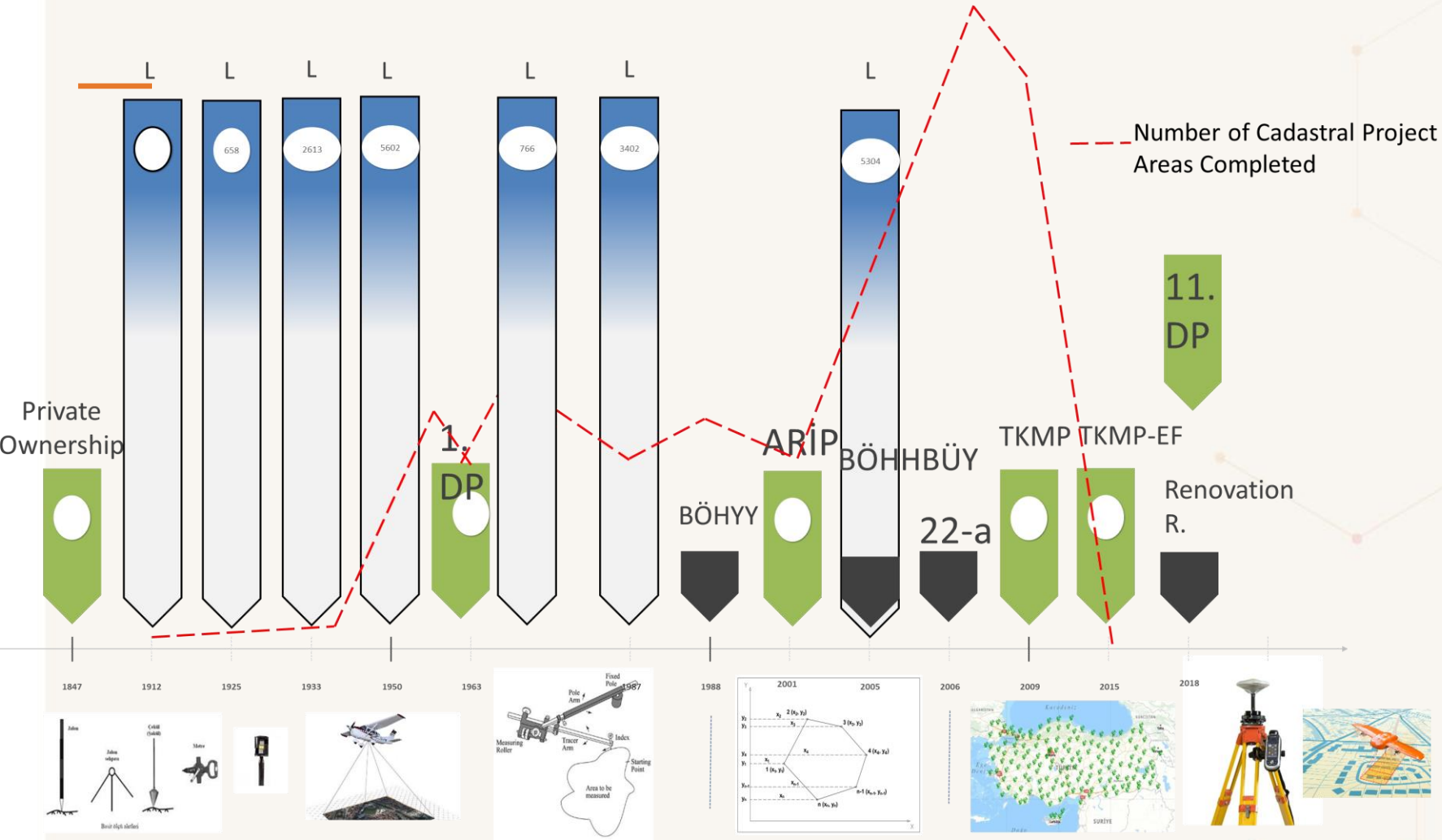
- The Main Purpose: Establishment of Land Registers
- Creation of Infrastructure of the Spatial Information System

-In Order to Fit this purpose;

- Different regulations for rural and urban areas
 - Different thematic and positional accuracies
 - Different mechanisms and approaches for deliniation, measurement, determination or dispute resolution
- Forest cadastre included in 2005.
- Uptades; systematic or on sporadic approaches.



CADASTRE IN TURKIYE



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)

CADASTRE IN TURKIYE

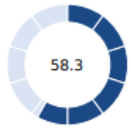
Doing Business 2020

Turkey

Registering Property - Turkey

Indicator	Turkey	Europe & Central Asia	OECD high income	Best Regulatory Performance
Procedures (number)	6	5.5	4.7	1 (5 Economies)
Time (days)	4.5	20.8	23.6	1 (2 Economies)
Cost (% of property value)	3.0	2.7	4.2	0.0 (Saudi Arabia)
Quality of the land administration index (0-30)	27.0	20.4	23.2	None in 2018/19

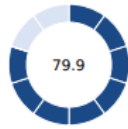
Figure - Registering Property in Turkey - Score



Procedures



Time

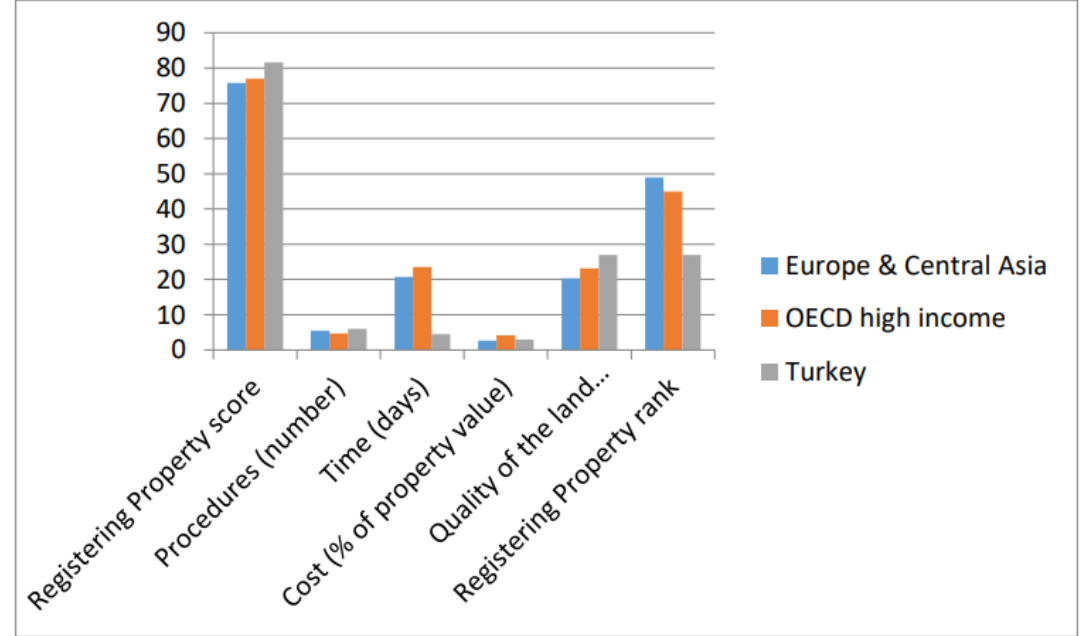
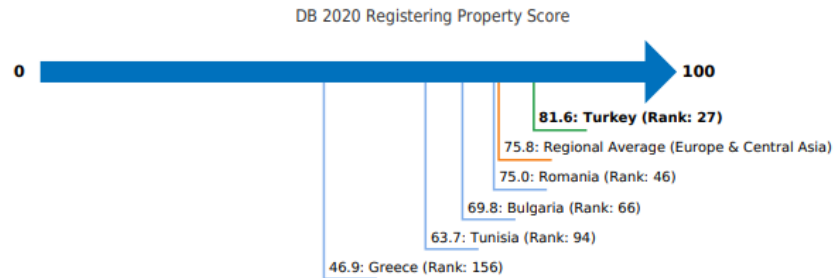


Cost

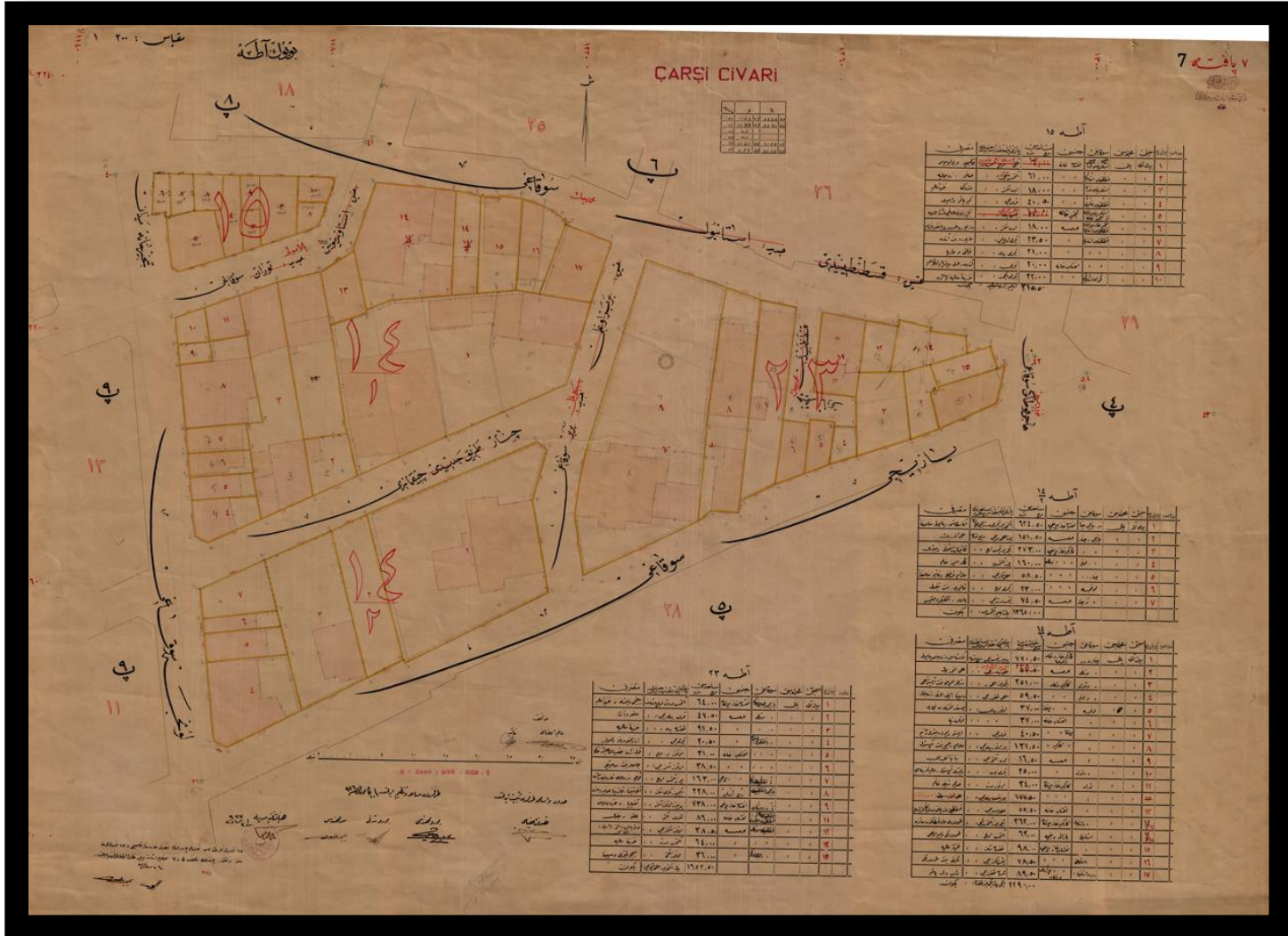


Quality of the land administration index

Figure - Registering Property in Turkey and comparator economies - Ranking and Score



CADASTRE IN TURKIYE



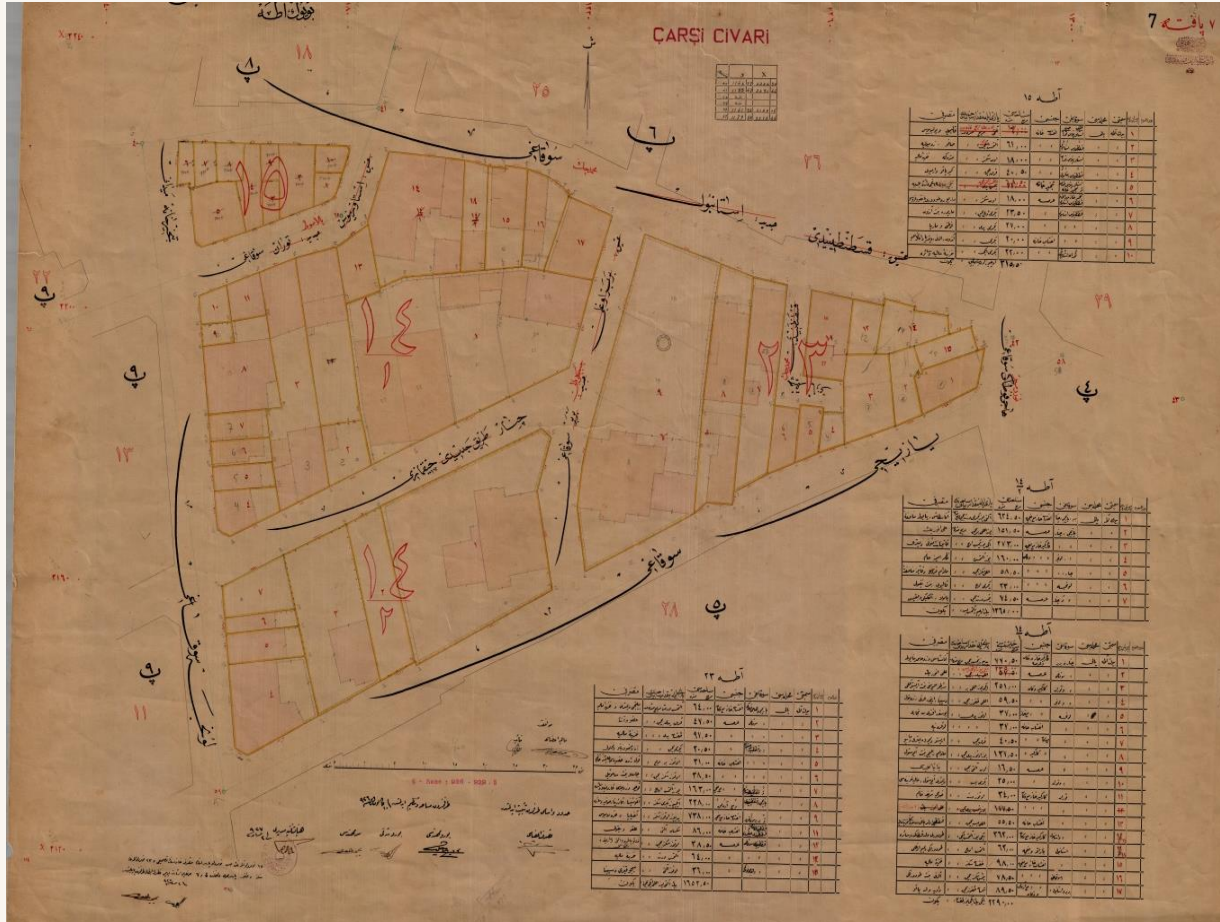
۲۳ طه

رقم	اسم	محلہ	سوق	جنس	مساحت	بیمانیہ	مصرفی
۱	بیرون آله	یال	بازار	آفتاب خانہ	۶۴,۰۰	...	بیچری دیمری و غیرہ مالہ
۲	عرصہ	۴۷,۵۰	...	علقو و آنا
۳	۹۷,۵۰	...	غنیہ مالہ
۴	۲۰,۵۰	...	آنا و ہودو و تلو و محلول
۵	آفتاب خانہ	۲۱,۰۰	...	قول زادہ غنیہ علیہ خانہ
۶	۳۸,۵۰	...	مہارابت ساموئل
۷	۱۶۳,۰۰	...	غنیہ و زور و بی فاروق و سائو
۸	۲۲۸,۰۰	...	آفتاب خانہ و غیرہ مالہ
۹	۷۳۸,۰۰	...	آفتاب خانہ و غیرہ مالہ
۱۰	۸۶,۰۰	...	علقو و قیقل
۱۱	۲۸,۵۰	...	قادی و بالہ و دانی و ارفیہ و
۱۲	۶۴,۰۰	...	غنیہ مالہ
۱۳	۳۶,۰۰	...	بیچری دیمری و مسینا
۱۴	۱۶۵۲,۵۰	...	بیرون آله و غیرہ مالہ

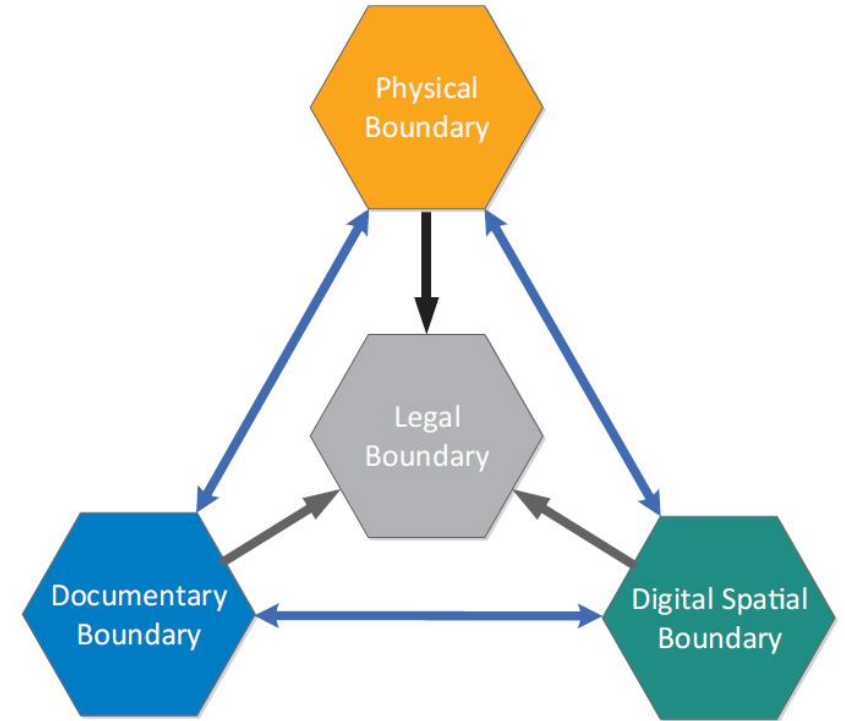
CADASTRE IN TURKIYE



CADASTRE IN TURKIYE



CADASTRE IN TURKIYE



Grant, D., McCamley, G., Mitchell, D., Enemark, S., & Zevenbergen, J. (2018). *Upgrading Spatial Cadastres in Australia and New Zealand: Functions, Benefits & Optimal Spatial Uncertainty*.

CADASTRE IN TURKIYE

DEFINITION OF «CADASTRAL DATA»


- Cadastral Data is NOT just about parcels.
 - ✓ All geometries subject to land registration or not and their connected geometries such as buildings, easements, right of way, etc.,
 - ✓ Ground control points and transformation parameters, which are auxiliary data of cadastral geometries,
 - ✓ Attribute information of cadastral data that all national projects may need (purpose of use, quality, original coordinates, date of manufacture, cadastral process in which it was produced, law in which it was produced, area ...)
 - ✓ Technical documents containing the information entered into the system

CADASTRE and INFRASTRUCTURE DEVELOPMENT IN TURKIYE

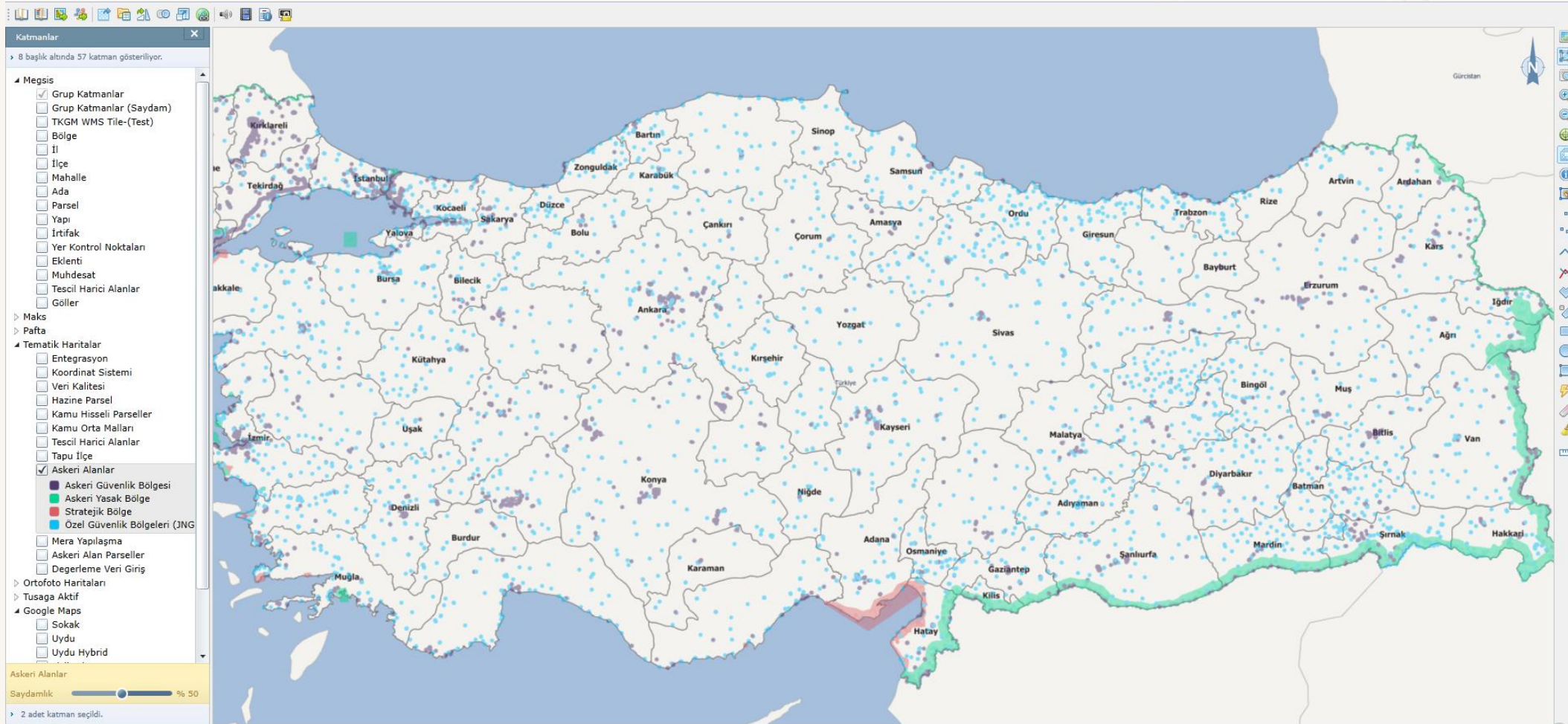


- Parcels
- Buildings - Improvements
- Easements
- Right of Way
- Park Areas
- Public Law Restrictions

CADASTRE and INFRASTRUCTURE DEVELOPMENTIN TURKIYE

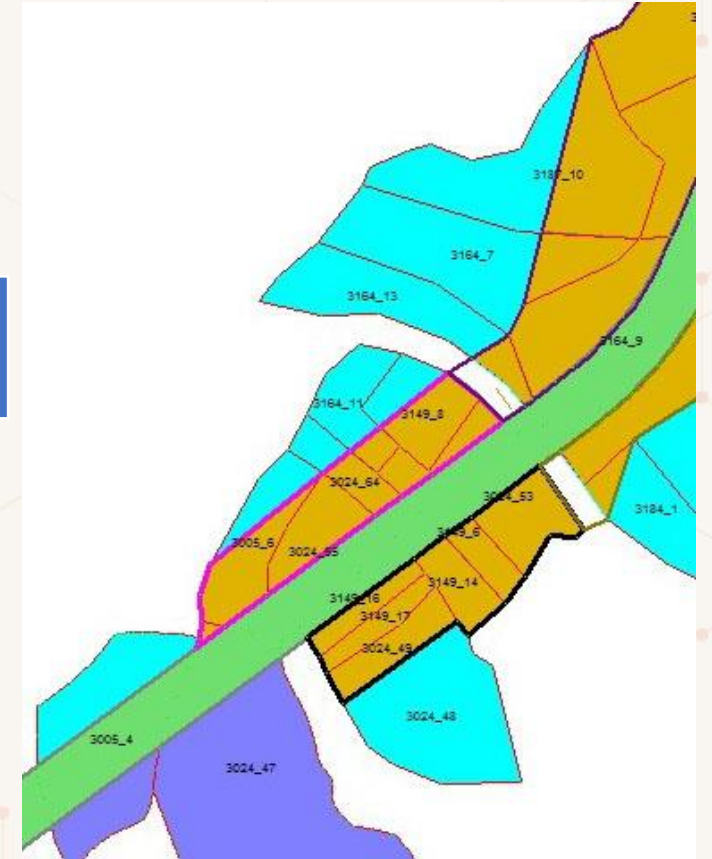
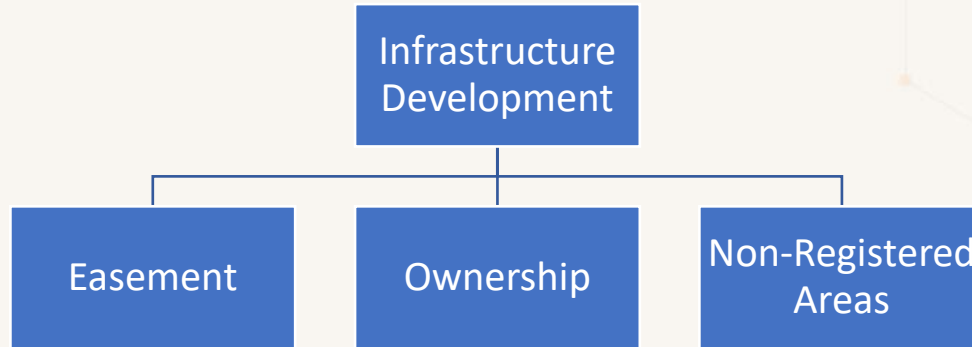
Number of Parcels	Number of Verified Parcels	Number of UnVerified Parcels	Verification Ratio	
58.824.714	57.192.415	1.632.299	97.23	
Parcels with Verified Coordinates	İllere Göre Tapu Parsel Sayıları		Digital	ITRF96 – 2005.00
41.377.422			44.726.581	36.507.680
Parcels with Temporary Coordinates			Photogrammetric	Ed50
15.815.042			7.471.862	
Number of Buildings			Polar	15.776.910
7.892.884			3.106.486	Local
Number of Buildings(3 th parties)			Orthogonal	4.137.400
347.951			1.153.693	
Number of Easements			Photoplan	Without Any Datum
579.623			46.847	
			Graphical	770.117
			686.946	

CADASTRE and INFRASTRUCTURE DEVELOPMENTIN TURKIYE

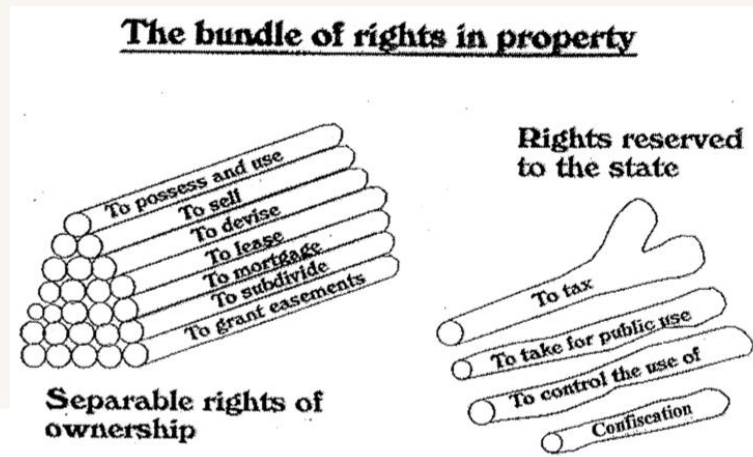


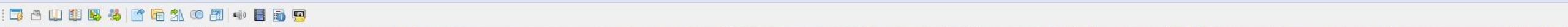
Public Law Restrictions

CADASTRE and INFRASTRUCTURE DEVELOPMENT IN TURKIYE



Easement Purpose	NumberOfParcels
Electricity	694.249
Gas-Natural Gas	128.982
Petroleum	3.249
Water_Drain	128.545
Transportation	2.427





Katmanlar
8 başlık altında 59 katman gösteriliyor.

Megsis

- Grup Katmanlar
- Tescilsiz Yapı
- Tescilli Yapı
- Tescil Harici Alanlar
- Onaysız Parsel
- Onaylı Parsel (Kesin)
- Onaylı Parsel (Geçici)
- Muhdesat
- İrtifak

Grup Katmanlar (Saydam)

Bölge

İl

İlçe

Mahalle

Parsel

Yapı

İrtifak

Ekleri

Tescil Harici Alanlar

Göller

Muhdesat

Yer Kontrol Noktaları

Ada ve Kayalıklar

Pafta

Maks

Tematik Haritalar

Tusaga Aktif

Ortofoto Haritaları

Google Maps

Sokak

Uydu

Uydu Hybrid

Fiziksel

Fiziksel Hybrid

Sokak Yerleşim

Sokak Su Yerleşim

Kamu Kurumları

Uydu

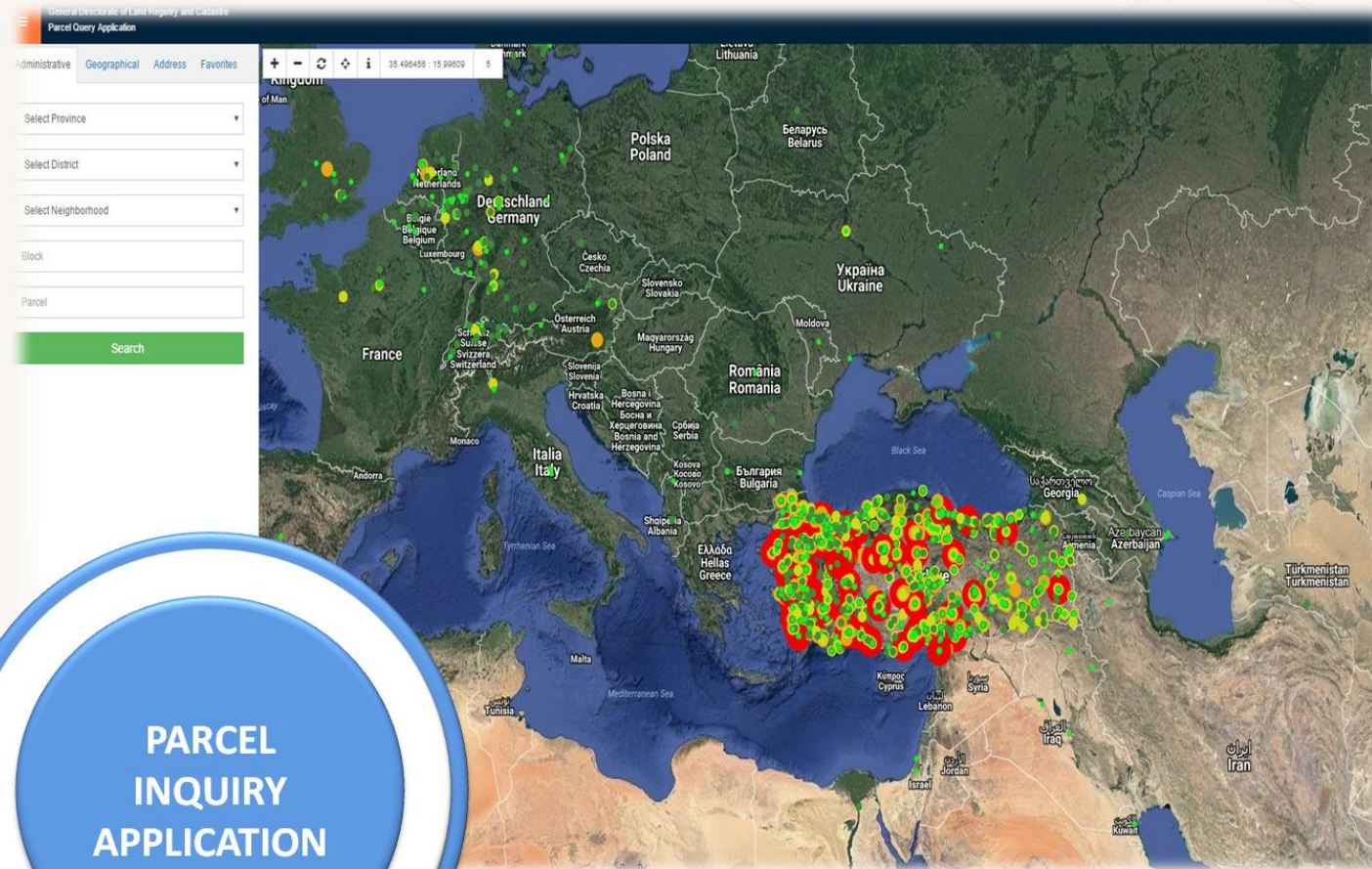
Saydamlık % 50

2 adet katman seçildi.

Öznetelik Bilgileri Yüklendi



CADASTRE – TRANSPARENCY

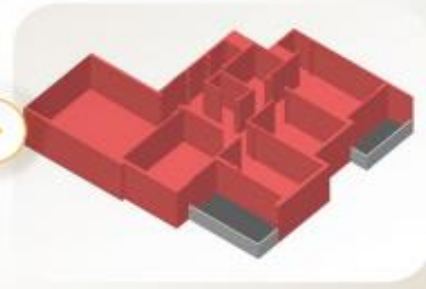
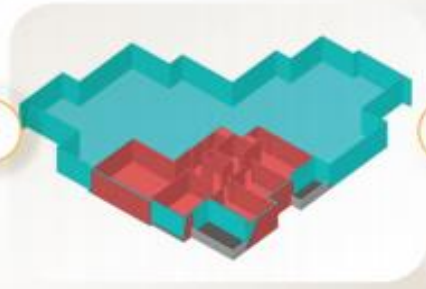
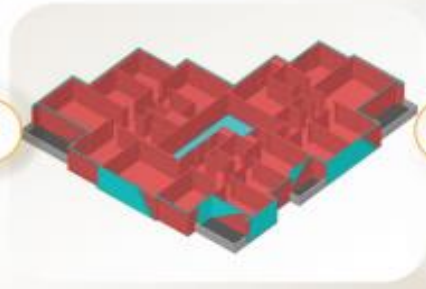
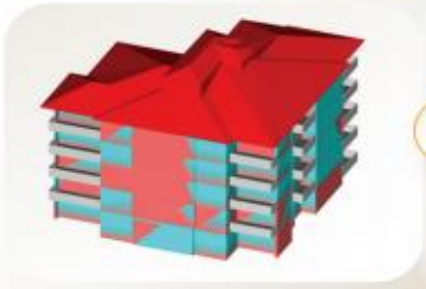
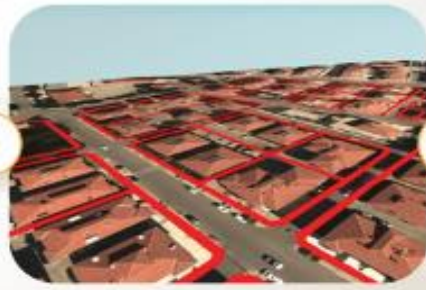
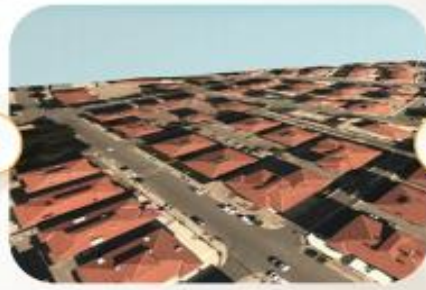


<http://parselorgulama.tkgm.gov.tr>

~ over 1 million request per day...

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

PRODUCTION OF 3D CITY MODELS



CADASTRE ONGOING PROJECTS

Amasya 3B Kent Modeli

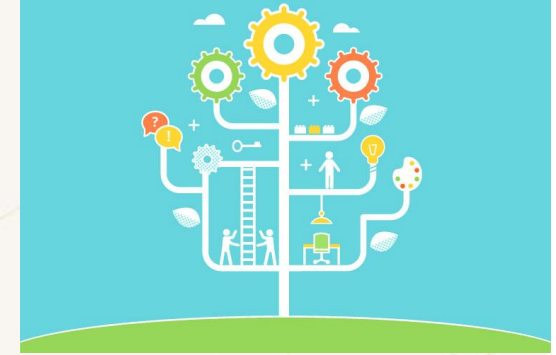
Q Ara İçerik Yardım Ayarlar



Pozisyon - x: 485764.87, y: 4502032.36, z: 403.21



CADASTRE FUTURE CHALLENGES



BIG DATA MANAGEMENT
UNLOCKING THE POTENTIAL OF DATA
DATA QUALITY
INTERNATIONAL STANDARDS
BEST PRACTICES

ADAPTATION TO TECHNOLOGY
SYSTEM UPDATE
SERVICE DELIVERY QUALITY
DIGITAL LAND REGISTRY AND CADASTRE

PERSONAL DATA PROTECTION
NEW TOOLS FOR DATA SHARING
INTEROPERABILITY – OPEN DATA

CONTINUOUS PROFESSIONAL DEVELOPMENT
COOPERATION AND COLLABORATION WITH UNIVERSITIES, CIVIL SOCIETY AND PROFESSIONAL ORGANIZATIONS

CADASTRE and RENEWABLE ENERGY - RERAs

- The concept was introduced in 2005.
- Remained inactive → Electricity Market Law (2016)
- The aim → identifying the feasible areas for energy generation. (solar and wind power)
- Public + Private owned lands
- Regulation -- > Ministry of Energy and Natural Resources
 - Identification of an area (Public + Private owned lands) as RERA
 - Land use plans
 - Land Registry Records → Temporary Annotations (3 years)
 - Cadastre plans (Public Restrictions)
- A Licence issued in 3 years → Expropriation
- Not → annulment of the annotations



CADASTRE and RENEWABLE ENERGY –ENERGY CERTIFICATION

- Energy Identity Certification → Market instruments created to support the development of renewable energy generation.
- Regulation → 2009 (entered into force in 2020)
- The document contains information on the building's energy needs and energy consumption classification, insulation characteristics, exterior sheathing and the efficiency of heating and cooling systems.
- Regulation ;
 - Sales and rental transaction -- > existence of energy identity certification (official deeds)
 - Purpose:
 - extending usage area of the certificates
 - Compelling parties to apply for the certificates
 - ...



CADASTRE and RENEWABLE ENERGY –SUPERFICIES

- Installation of Electric Energy Generation System from Solar Panel
- Demands for «establishment of superficies right» on **condominium units**
- **superficies → civil code: type of easement which gives a right to a 3rd person except the owner for building a construction above or under a land parcel or maintain an existing structure**
- **Condominium Law → superficies on individual units are not allowed**
- **Energy market regulation Vs Civil Code**

Thank you...

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