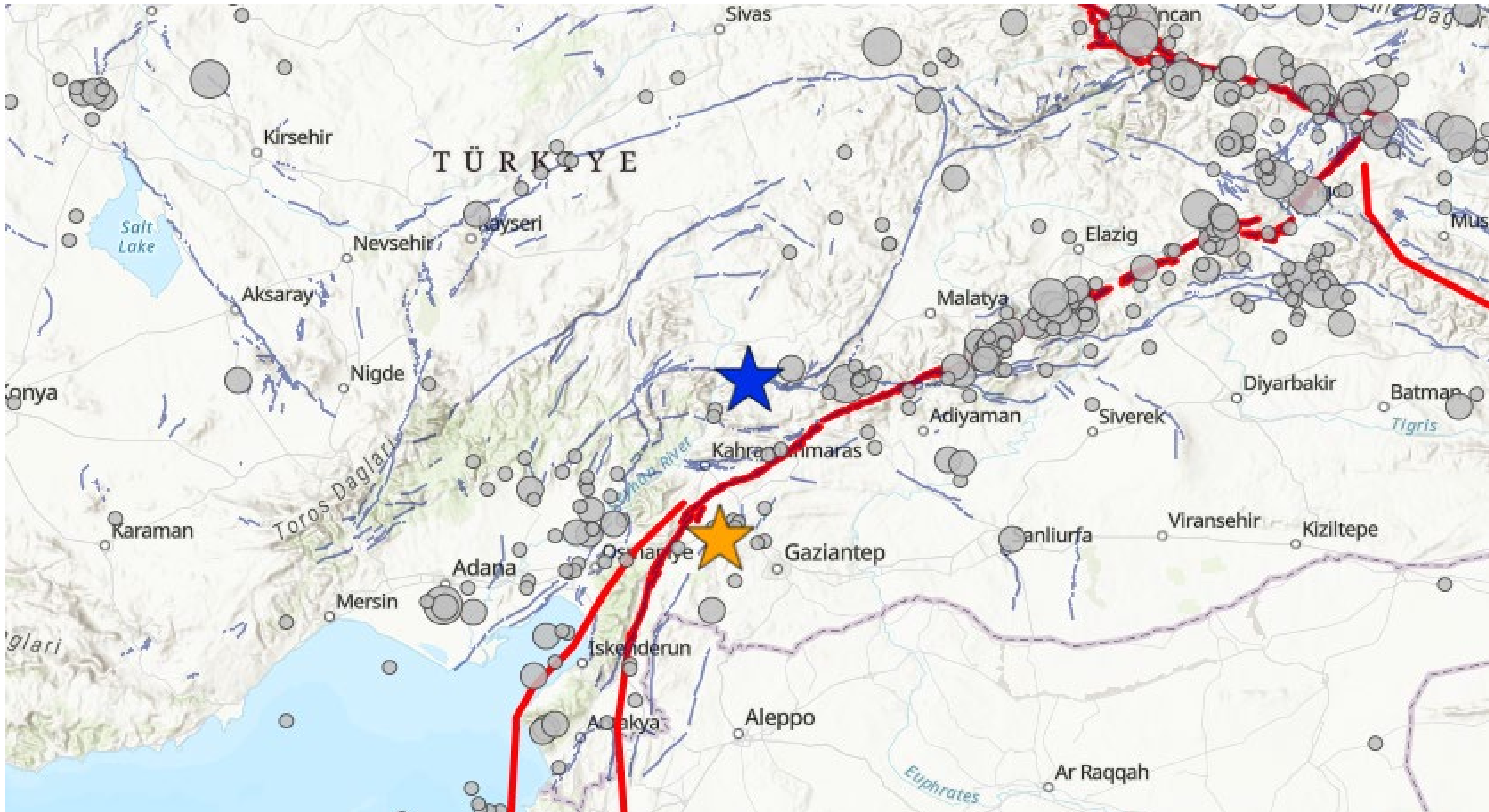


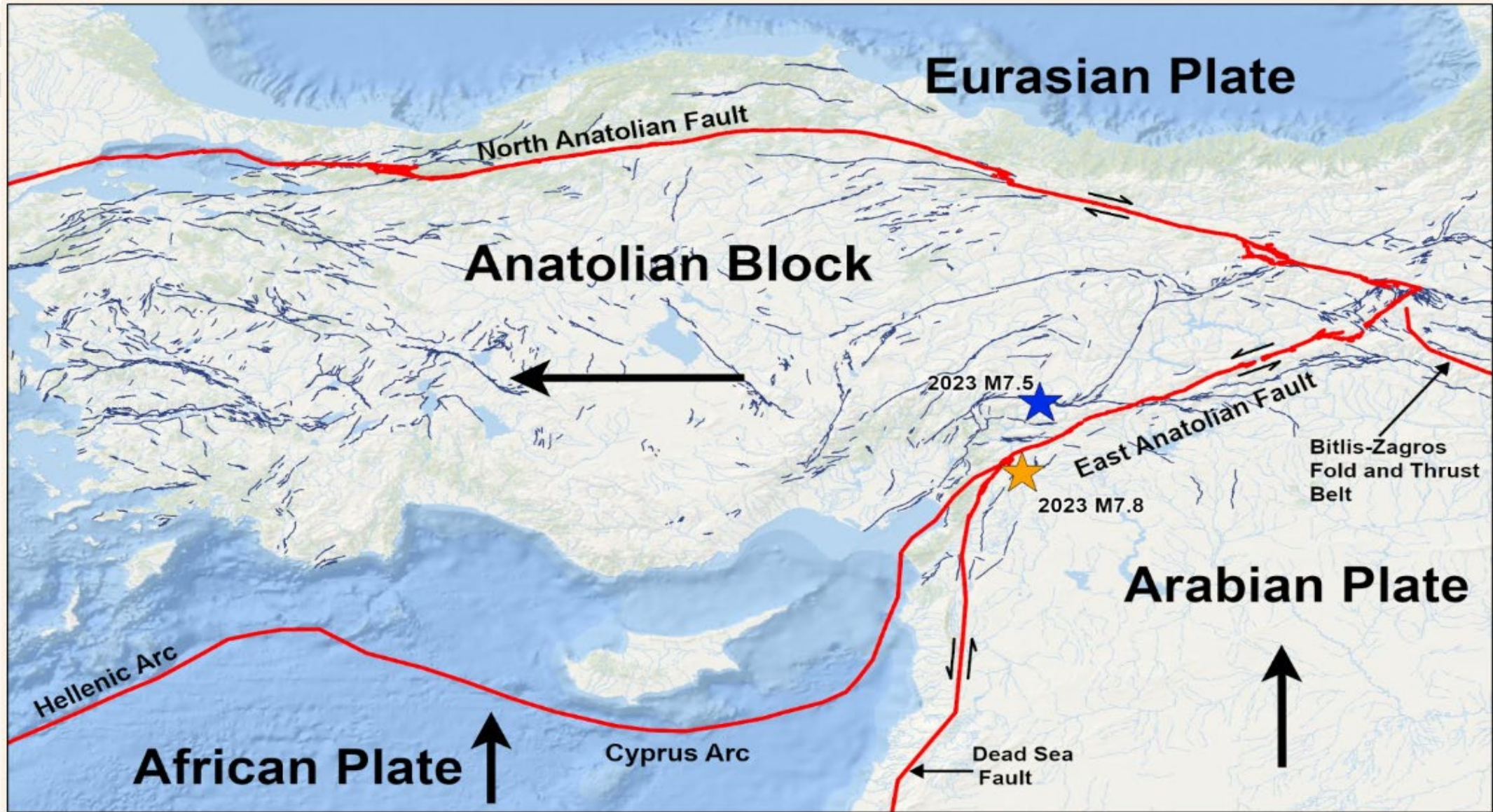


Lessons Learned From Earthquakes in Türkiye (Geospatial & Legal Solutions)

Emre Ergin Ergani
Land Registry Department
emreergani@tkgm.gov.tr



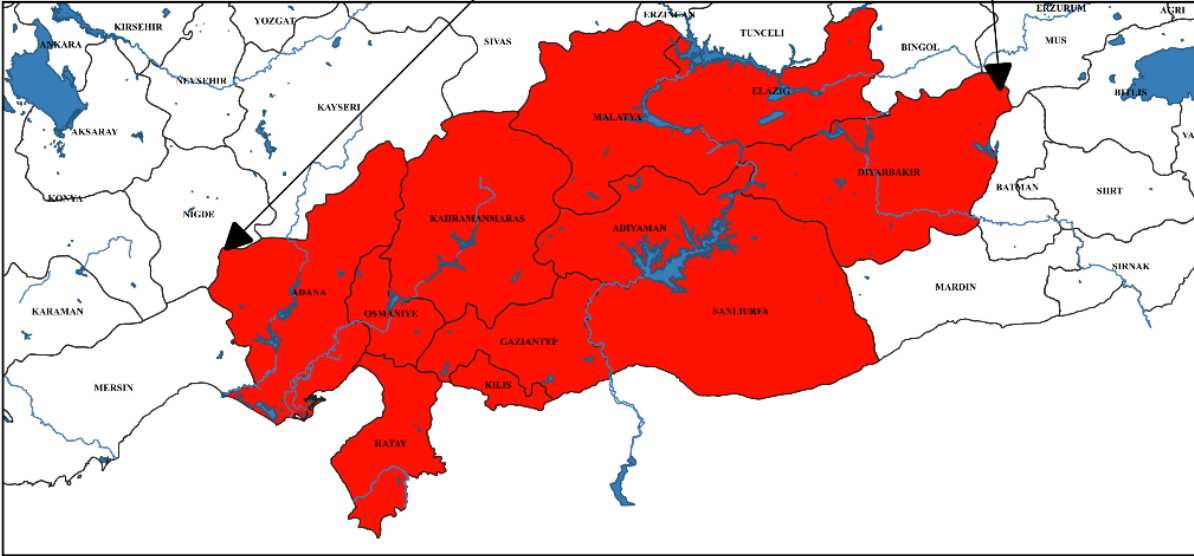
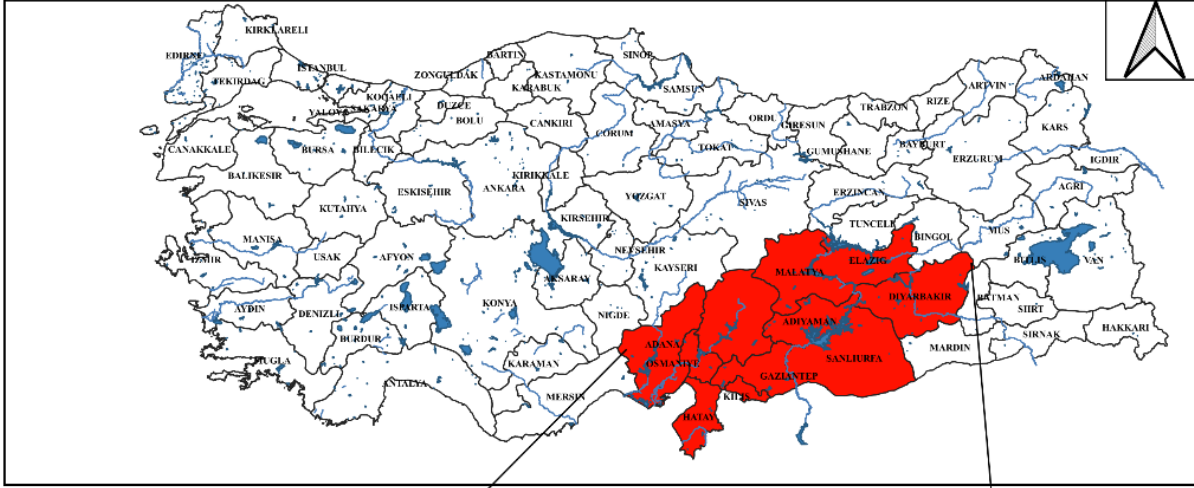




<https://storymaps.arcgis.com/stories/355bfc8b3c5941e683d4f258e8fb2dfa>



DEPREMDEN ETKİLENE EN ŞEHİRLER LOKASYON HARİTASI



Lejant

■ GÖLLER
— AKARSULAR

iller
■ AFET ŞEHİRLERİ

Hazırlayan
Kadastral Veri Yönetimi Şubesi

0 10 20 30 40 50 km



➤ 11 provinces that were impacted

➤ 50.576 (883.000 individual unit) buildings were severely damaged or demolished

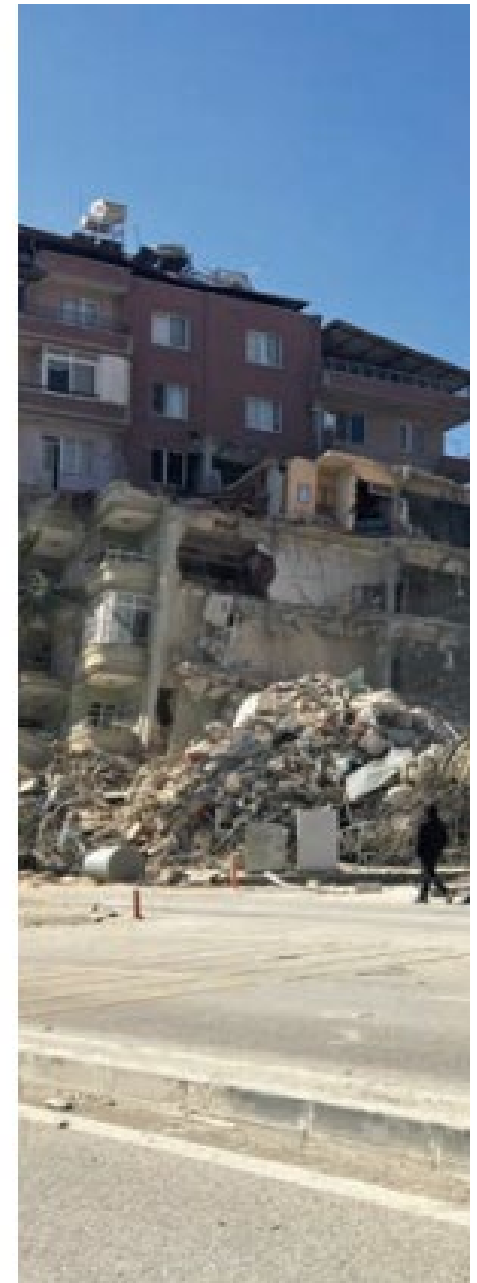
➤ Almost 5 million parcels



➤ 50.783 died

➤ 108.068 injured







Eastern Anatolia Faultline - Pazarcık







DISASTER MANAGEMENT



Post-Disaster

- Response
- Recovery
- Reconstruction

Pre-disaster

- Prevention
- Mitigation
- Preparedness

<https://www.gktoday.in/disaster-management-pre-disaster-and-post-disaster-phases/>



POST DISASTER PHASE AND GDLRC



Response

- Search and Rescue Activities
- Damage Detection
- Monitoring Activities
- Monitoring of Building Deformation

Recovery

- Site selection
- Monitoring ground deformation

Reconstruction

- Re-establishing parcel boundaries
- Re-planning activities
- Expropriations
- Mass Housing Projects
- Management of Parcel Boundary Data



DISASTER MANAGEMENT IN TÜRKİYE



PRESIDENCY OF THE REPUBLIC OF TÜRKİYE

MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE

(Identifying the affected areas and beneficiaries, estimating the value of the real estates)

AFAD

(MINISTRY OF INTERIOR DISASTER AND EMERGENCY MANAGEMENT DEPARTMENT)

GOVERNERSHIPS





DISASTER MANAGEMENT IN TURKIYE



A State of Emergency has been declared for three months in the provinces within the earthquake zone, in accordance with Article 119 of the Constitution.

In regions where a state of emergency has been declared;

- ✓ Judicial deadlines (Periods for filing claims and lawsuits, etc.) and mandatory administrative application deadlines have been suspended.
- ✓ Legal announcements that had been made as a result of cadastral work in the earthquake zone were suspended also. Additionally postponed were the deadlines for submitting lawsuits and cadastral work objections.





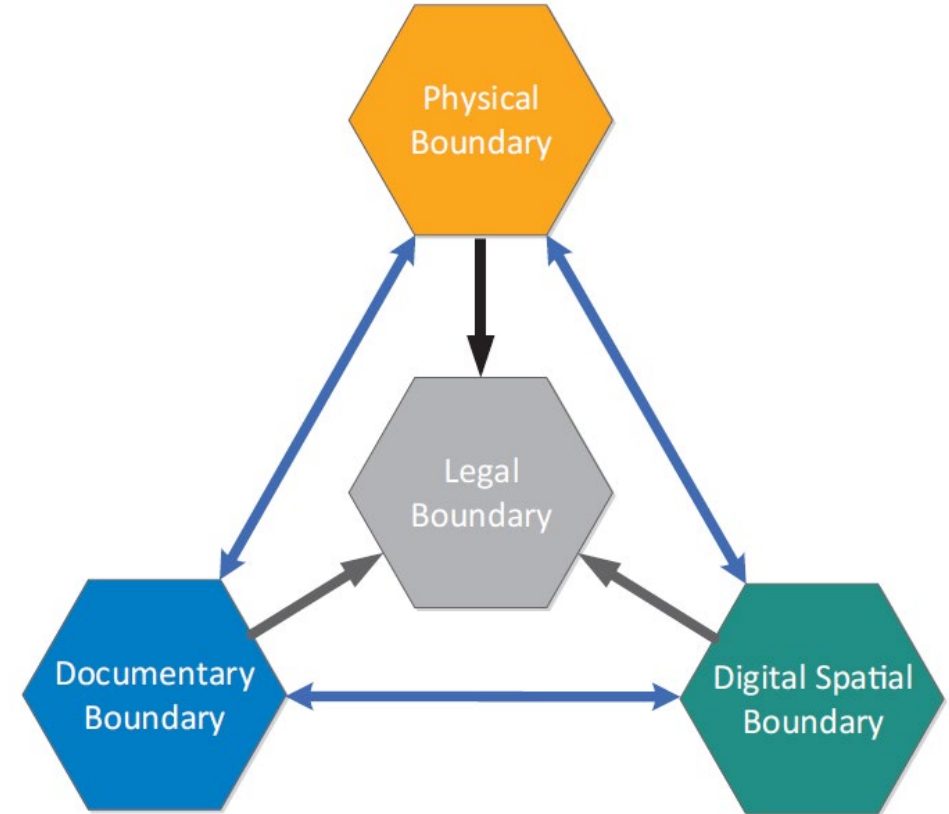
LESSONS LEARNED



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)



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



LESSONS LEARNED



- Surface-Deforming are causing complexity on boundary redetermination procedures after earthquakes. Recognizing boundaries and cadastral positions in various zones is a difficult task.
- According to the Turkish Civil Code, the cadastral plans are regarded as legitimate even if there is a discrepancy with the ground.
- Fixed boundary concept under state guarantee is in force in juristic system of Türkiye.
- ✓ **The Turkish Civil Code lists only landslides as an exception to the rule that cadastral maps and land registry plans have priority. However, the Civil Code should also list other kinds of surface deforming as exceptions.** Yildiz et al. 2023 (unpublished work)



LESSONS LEARNED



- The Turkish Civil Code was adopted from Switzerland in 1926, just after the foundation of the Republic.
- While the “permanent danger of ground displacement” situation is defined as an exemption in the Swiss Civil Code, only “landslides” is mentioned in the Turkish Civil Code.
- The distinction could have resulted from translation errors from the original.
- ✓ **Awareness on this issue should be increased and Turkish courts have to consider this situation until the Civil Code is revised.**

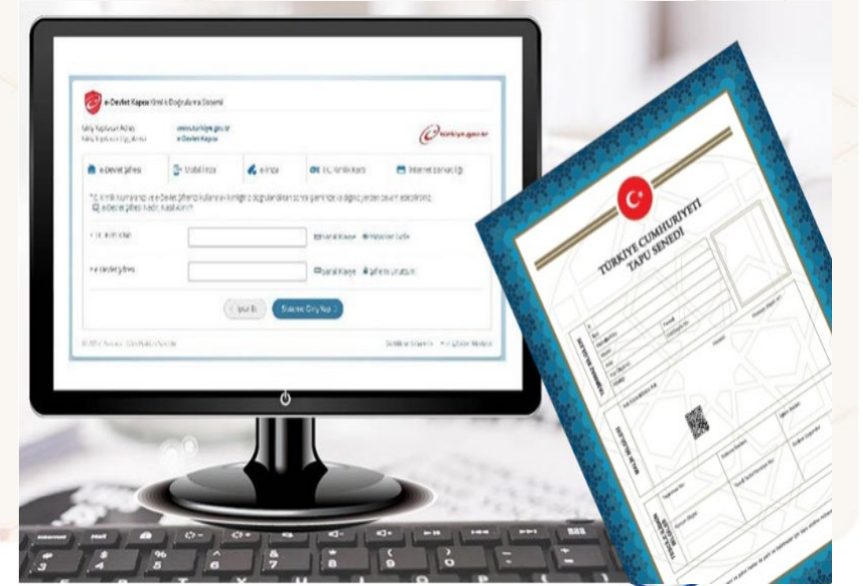
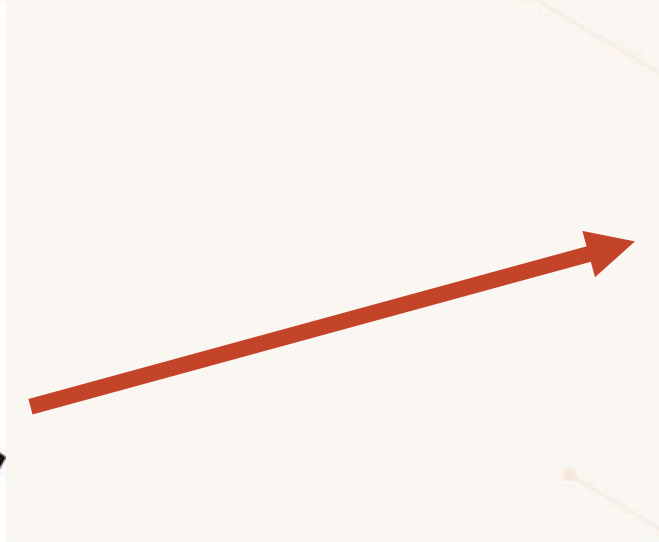
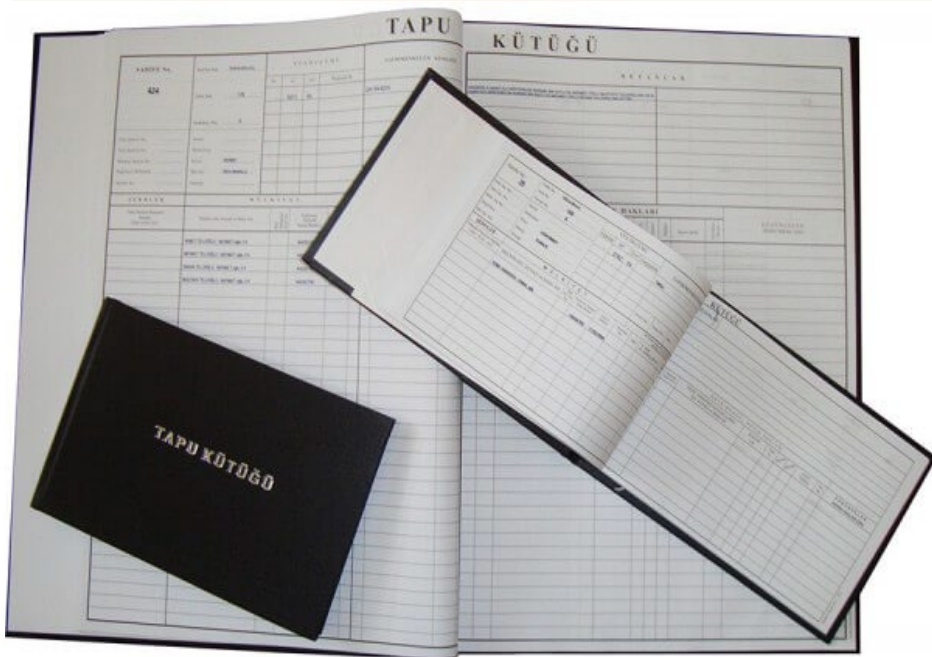


LESSONS LEARNED



- ✓ The dual registration system is still maintained in Türkiye. The land books are still in use together with digital records and not every cadastral document is currently digital.

Land registry records and cadastral documents were buried under the rubble during the earthquake. **Therefore protecting documents is very important.**





LESSONS LEARNED



- A mandatory earthquake insurance program designed for homes, which inside municipal boundaries is put into place in Türkiye.
- In certain cases, the mandatory earthquake insurance program for buildings insufficient to cover the damages.



RECOMMENDATIONS



- ✓ Keep land registry and cadastral information in digital format,
- ✓ Create multiple back-up files and storage for land records such as maps, titles and land use plans,
- ✓ Support efforts to review and improve regulatory requirements, create distinct legal and technical regulations for each area (fault, landslide, ground displacement, etc.).
- ✓ Develop financial instruments and diversify your portfolio to make up for the all earthquake's damages.

(https://www.land-links.org/wp-content/uploads/2016/09/USAID_Land_Tenure_Disaster_Issue_Brief_012915-1.pdf)



Thank you for Listening...

emreergani@tkgm.gov.tr