



# EARTHQUAKES IN TÜRKİYE

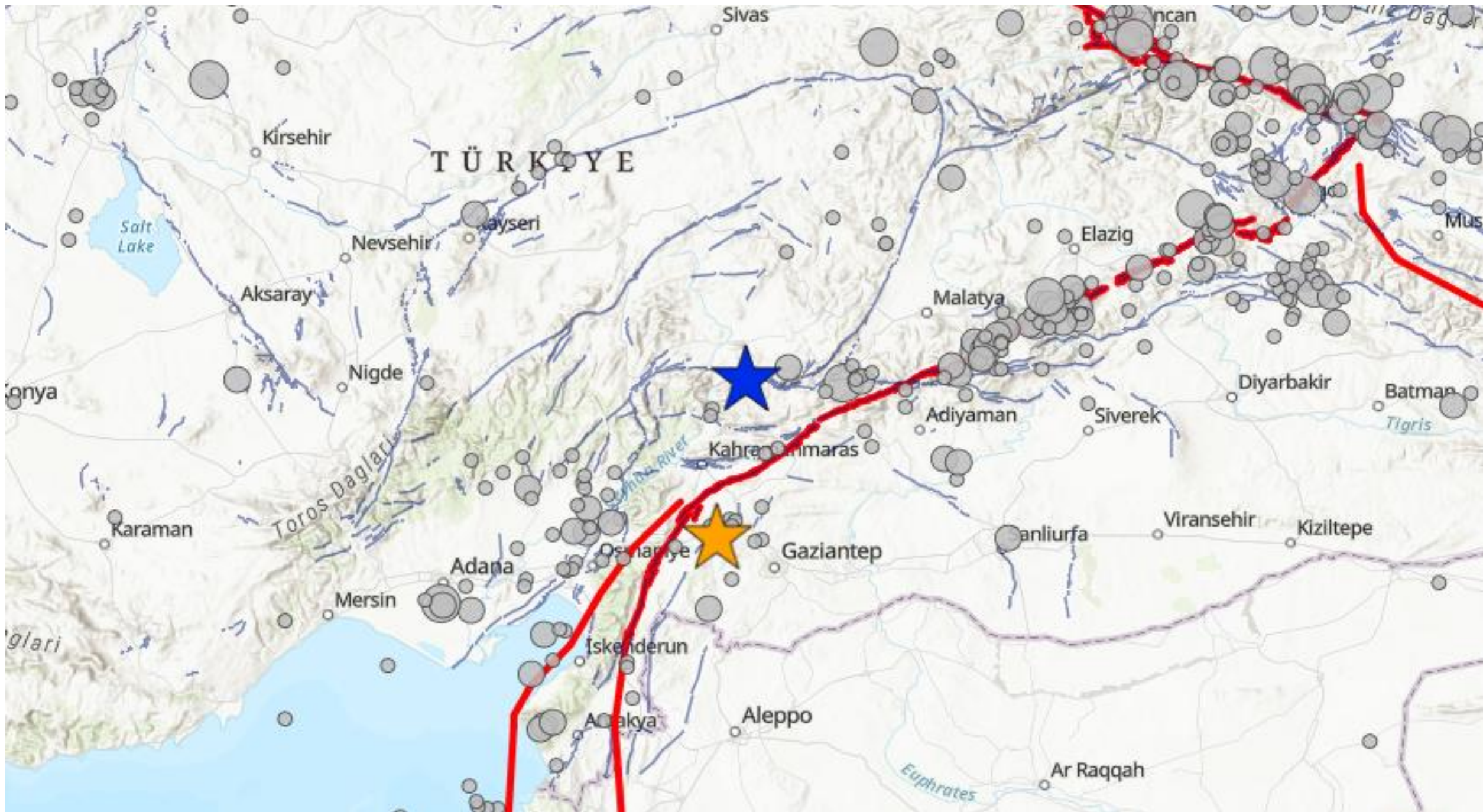
## (The Impact of Natural Disasters)

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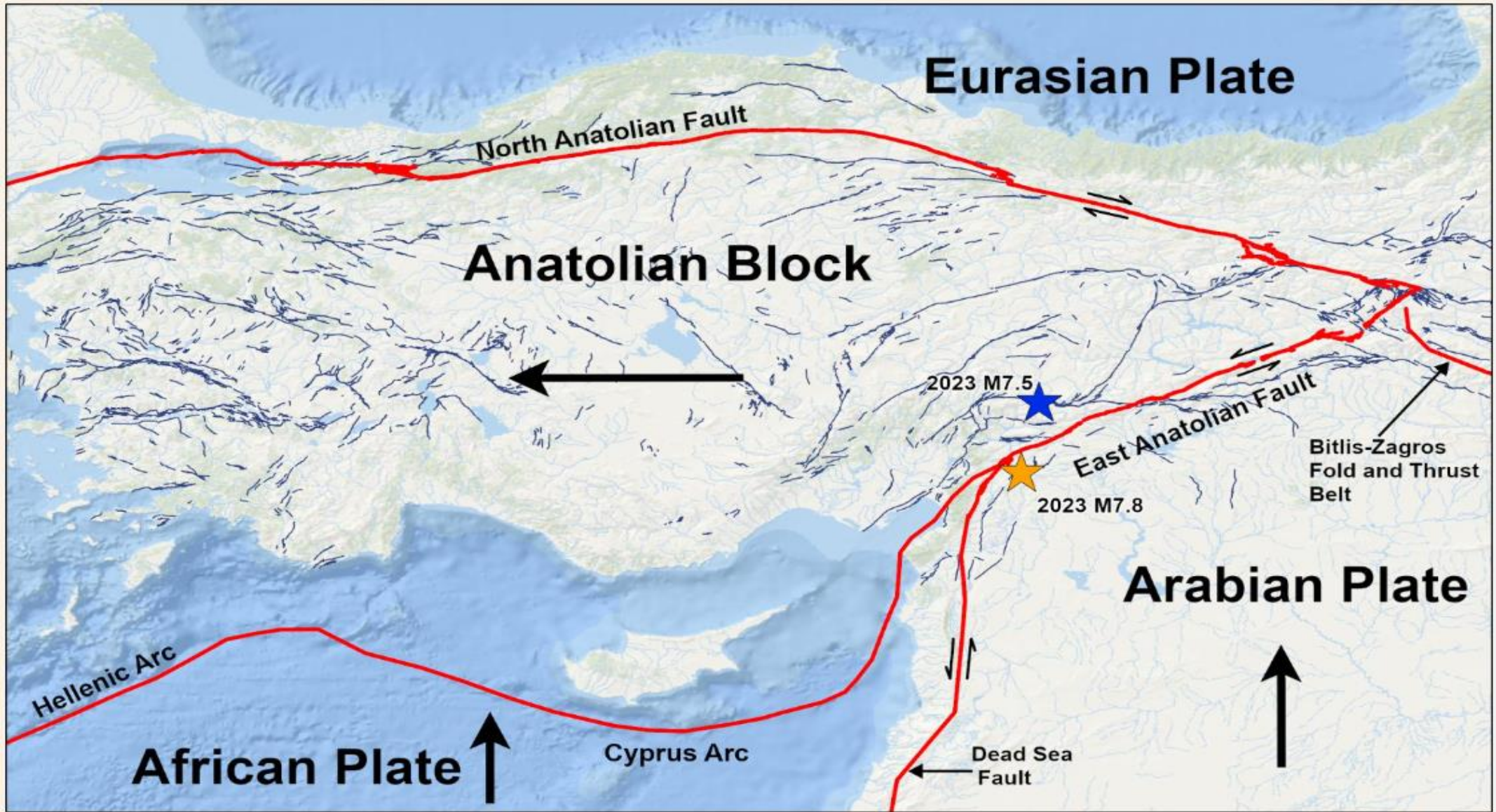
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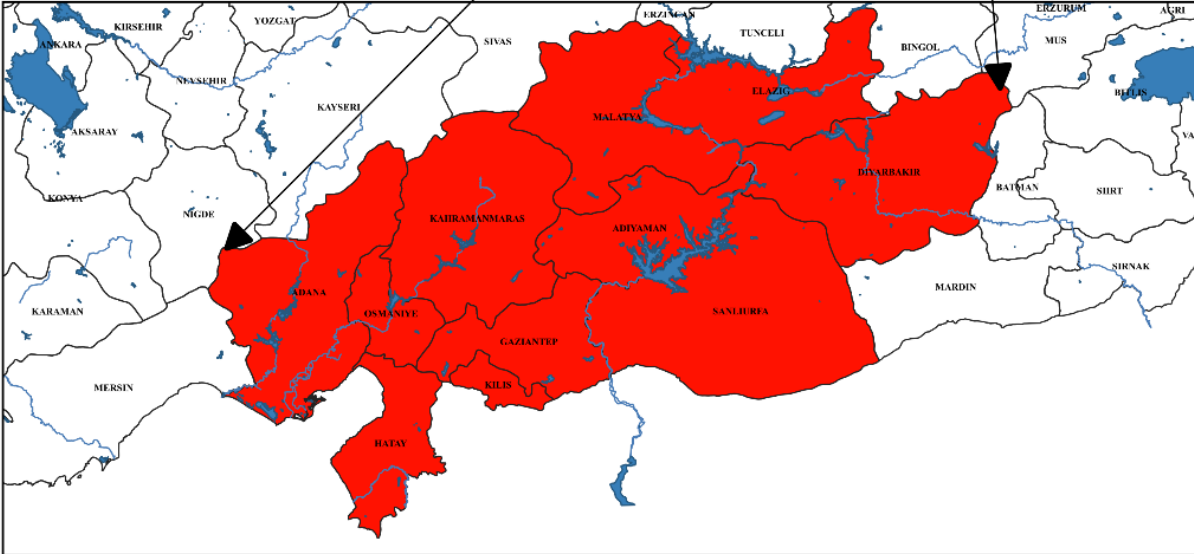
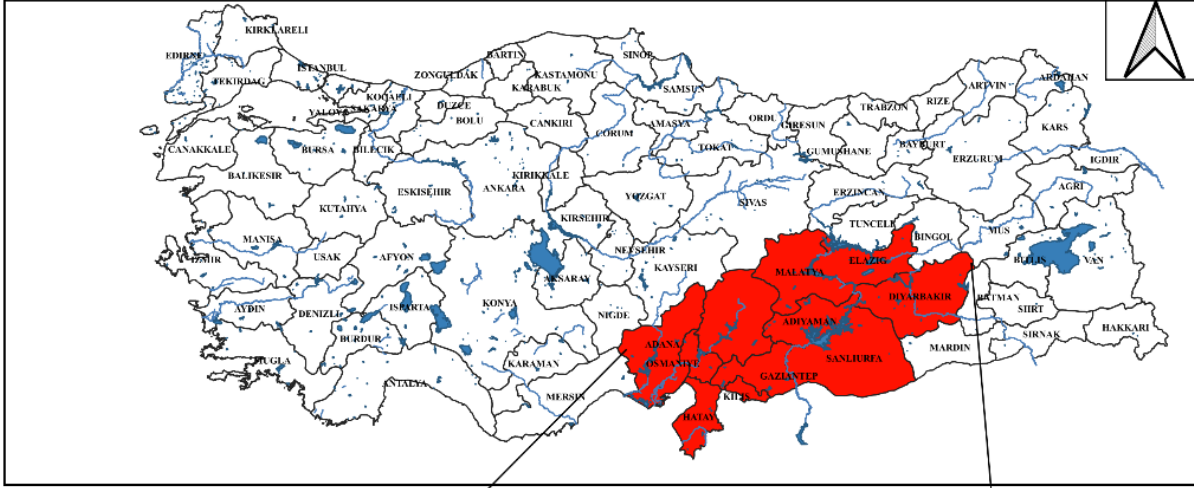




<https://storymaps.arcgis.com/stories/355bfc8b3c5941e683d4f258e8fb2dfa>



## 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 units) buildings were severely damaged or demolished

➤ Almost 5 million parcels





➤ 50.783 died

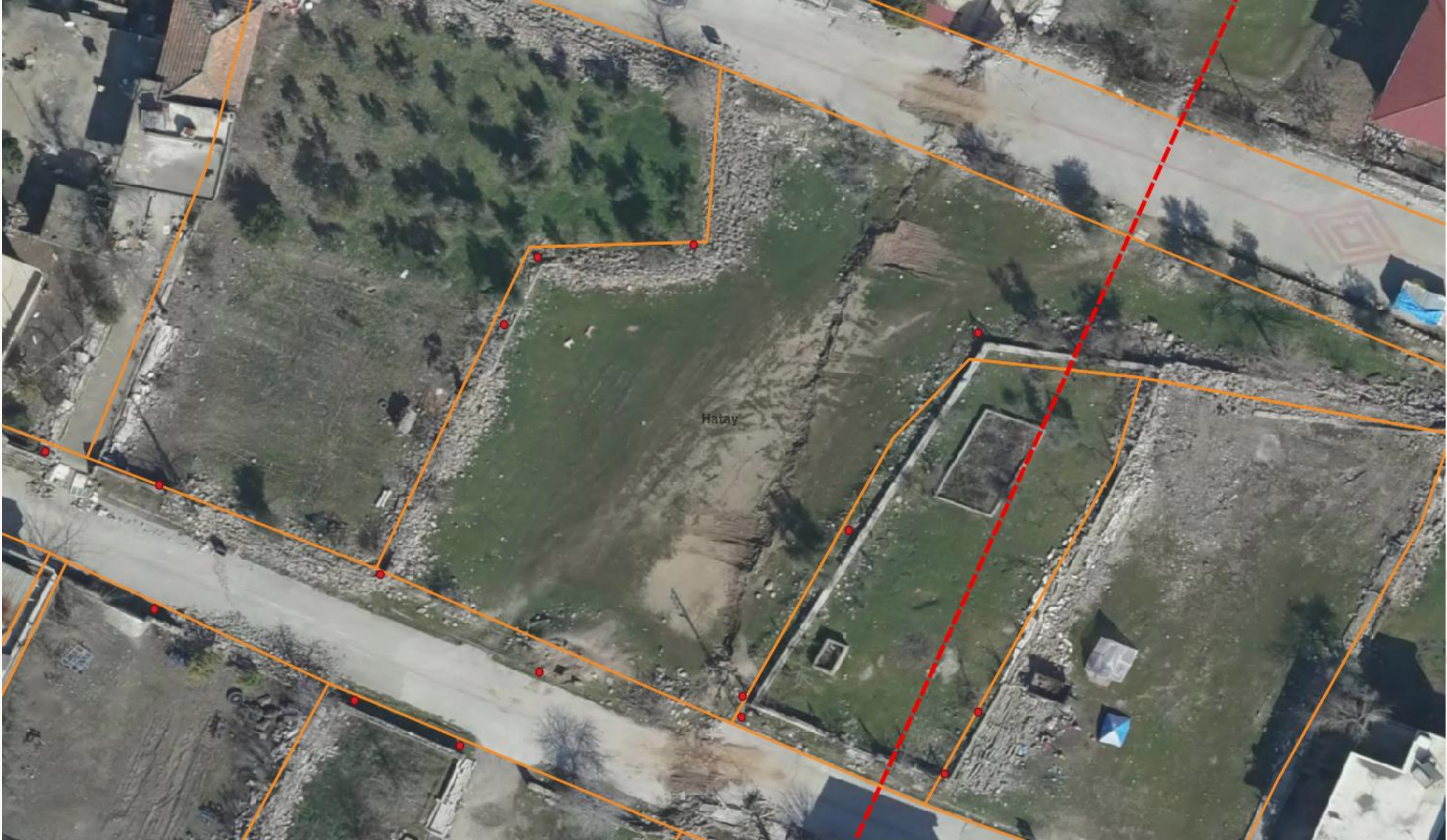
➤ 108.068 injured



























# 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**







## LEGAL ACTION DONE RIGHT AWAY FOLLOWING THE EARTHQUAKE



**A State of Emergency has been declared immediately 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. The deadlines for filing lawsuits and objections to cadastral work were also postponed.





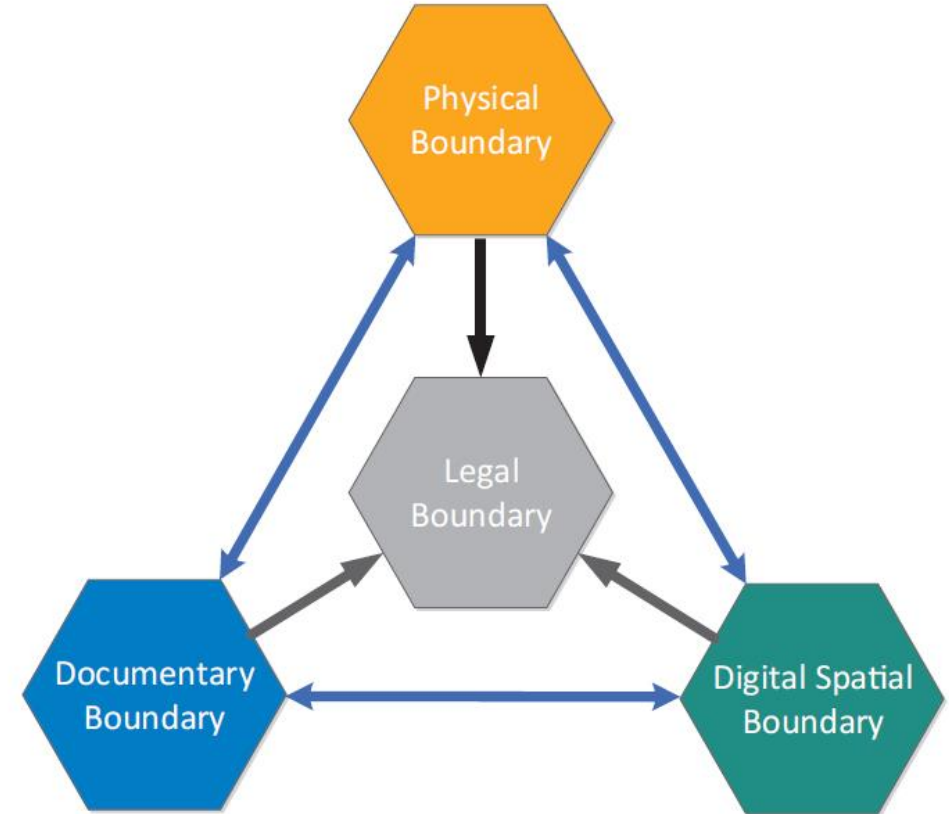
# CADASTRE'S AND LAND REGISTRY'S ROLE IN DISASTER MITIGATION



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.







# BASIC PRINCIPLES OF THE LAND REGISTRY



- **Responsibility of the State**
- **Registration requirement for acquisition of real rights**
- **Causality**
- **Request**
- **Accessibility**
- **Reliability**







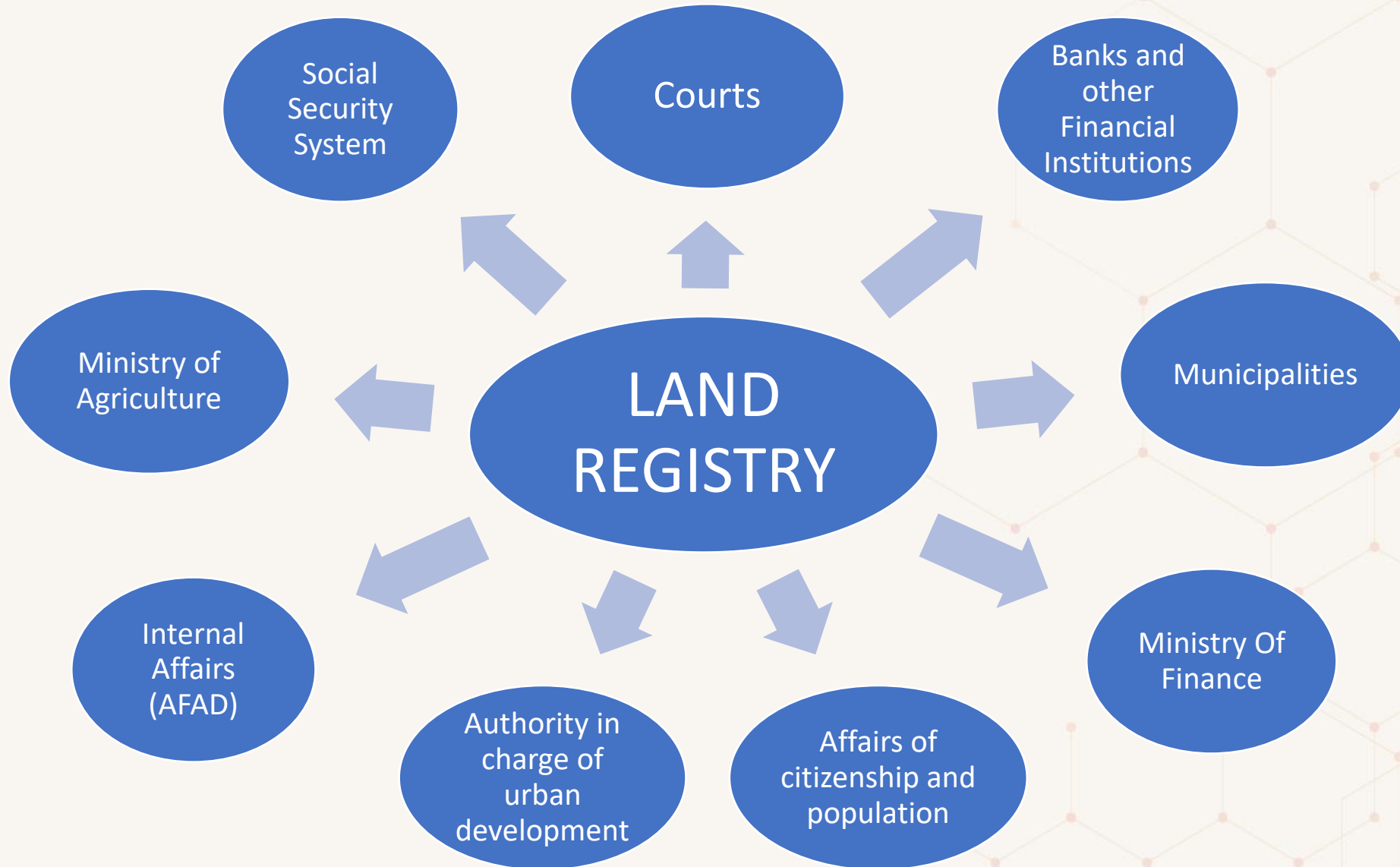
## HOW WAS RECOVERY AIDED BY LAND REGISTRY?



- **Land Books**
- **Applications Ledger**
- **Deeds Archive**
- **Additional historical records pertaining to the property and its owner**



# ORGANIZATIONS SUPPORTED BY THE LAND REGISTRY







## 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.**



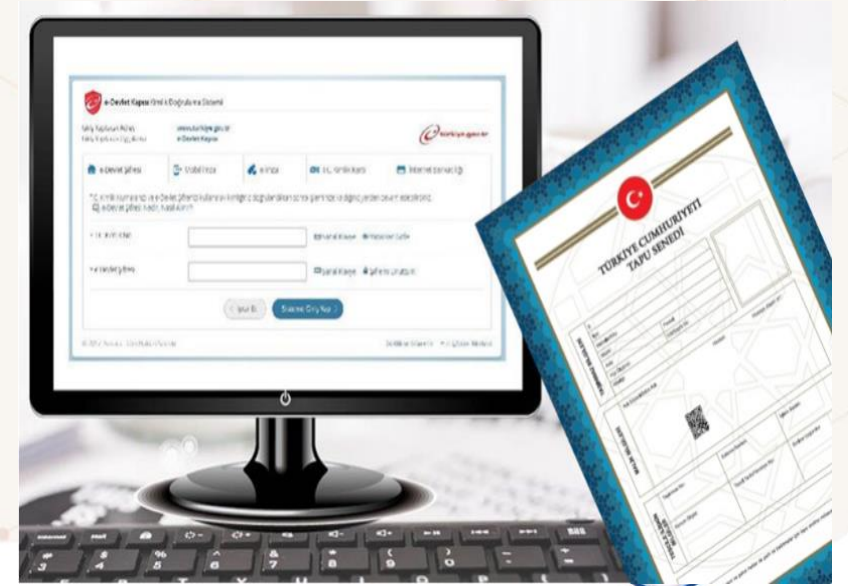
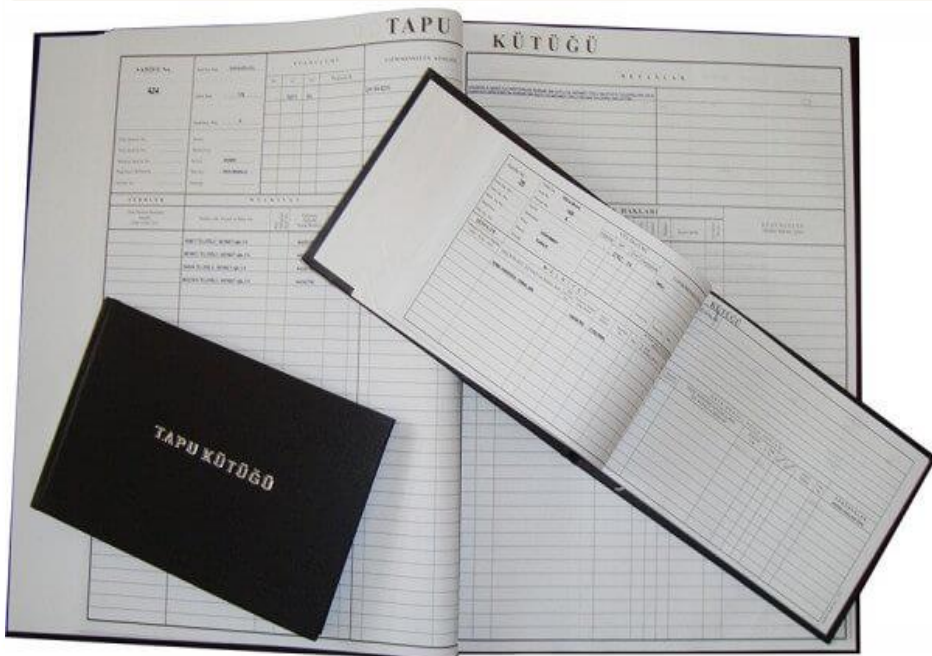


## LESSONS LEARNED



- ✓ 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.

Documents related to land registration and cadastre were buried under the rubble after the earthquake. **Thus, it is crucial to protect documents.**





## LESSONS LEARNED



- After the earthquake 1999 Gölcük, a mandatory earthquake insurance program designed for homes which inside municipal boundaries is put into place in Türkiye.
- After the earthquake 2023 Kahramanmaraş, in certain cases, the mandatory earthquake insurance program for buildings insufficient to cover all 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.
- ✓ Apply a land use model designed specifically for disaster areas.

([https://www.land-links.org/wp-content/uploads/2016/09/USAID\\_Land\\_Tenure\\_Disaster\\_Issue\\_Brief\\_012915-1.pdf](https://www.land-links.org/wp-content/uploads/2016/09/USAID_Land_Tenure_Disaster_Issue_Brief_012915-1.pdf))



Thank you for listening...

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