Turkiye Earthquake Feb 2023
Lessons Learned, March 15, 2023

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WHAT HAPPENED?

Overview:
- 7.8 Richter scale earthquake (11.14 miles depth) on Feb 6, 2023 with damaging aftershocks.
- 17.9 M people affected & 2.7 M displaced.
- 214k buildings damaged/collapsed in Turkey
- $84 M estimated loss, $530.27 B infrastructure exposed, and 1.74 M Syrian refugee impacted.

Turkiye
- 50,227 Fatalities
- 105,599 Injuries
- 448,010 Evacuated
- 9,100,000 Need Assistance

Syria
- 5,791 Fatalities
- 10,041 Injuries
- 43 District affected
- 4,900,000 Need Assistance

Sources: UN OCHA & others, March 7, 2023
TURKIYE

Northern surface

Tepehan village

Olive grove

Source: Reuters

Fissure opened up by quake

Southern surface
RAPID INITIAL DAMAGE ASSESSMENT

Coordinate: 36.7983, 36.5331
Coordinate: 36.7236, 36.5172

Coordinate: 36.7236, 36.5172
RAPID INITIAL DAMAGE ASSESSMENT

Before and after images of damaged buildings at different coordinates:

- Coordinate: 36.5000, 36.3720
- Coordinate: 36.2575, 36.1797
- Coordinate: 36.5000, 36.3720
RAPID INITIAL DAMAGE ASSESSMENT

Coordinate: 36.0802, 35.9993

AFTER

BEFORE
RAPID INITIAL DAMAGE ASSESSMENT
INDONESIA RESPONSE

• Assistance requested by Turkish Embassy in Jakarta

• President Widodo instructed an international aid to Turkiye, and Syria.

• 47-member Medium Urban SAR and 119-member Field Hospital EMT led and coordinated by BNPB.

• Supporting Turkish National Disaster Management Agency was facilitated by Indonesian Ambassador in Ankara.

• Delegation include Tentara Nasional Indonesia (TNI) the Indonesian Military, Polisi Republik Indonesia (Polri) the Indonesian Police, Ministry of Health (MOH), and Non Government Organizations (NGOs).

• Arrived in Adana Feb 11, 2023, and directly conduct SAR operation in Hatay Province.

• Field Hospital started on Feb 14, 2023.

• National Disaster Preparedness Training Center supported the response in providing advice and information analysis.
TURKIYE EARTHQUAKE
FEBRUARY 2023

INDONESIA RESPONSE

A. INASAR – Indonesia Search and Rescue
B. Field Hospital – Emergency Medical Team
C. Logistic Support Warehouse/Kitchen
D. Coordination Center
E. Embassy of Indonesia in Ankara
2,043,472
Total Local and Migrant Population

1,327,308
Total Local and Migrant Population in Most Affected Sub-Provinces

774,483
Estimated Displaced Population*

*Estimated displaced population figures at province level are available as of 28 February, data is being recollected with national displacement figure on a daily basis. Figures are derived from administrative division population data and 1-5 damage severity scale, and are subject to change with evolving situation on the ground.

Temporary Settlement Centers

CAPACITY** (27,415)
- TAC*** (75%)
- Tent City (24%)
- Removal Center (1%)

**Temporary settlements where type and capacity is still being established are not included.
***TAC: Temporary Accommodation Centers

Sex Distribution of Local Population

50% Female
50% Male

Age Distribution of Local Population

- High Damage
- Middle-High Damage
- Middle Damage
- Middle-Low Damage
- Low Damage

0-4 27% 5-19 21% 20-34 21% 35-49 15% 50-64 8% 65+
INTER-AGENCY RESPONSE BY INDONESIA TEAM

National Disaster Management Agency (BNPB)
- Coordinate Indonesia’s Response

Ministry of Foreign Affairs
- Diplomacy communication with Turkiye Government in Jakarta and through Embassy in Ankara.

National SAR Agency (BASARNAS)
- Provide Urban Search & Rescue in supporting Turkiye’s National Disaster Management Agency (AFAD) in coordination with INSARAG of UN

Ministry of Health (Health Crisis Management Center)
- Coordinate Field Hospital Service

Muhammadyah Disaster Management Center
- Provide & coordinate medical team in Emergency Management Team.

Indonesian Police (POLRI)
- Provide Disaster Victim Identification team support and medical team

Indonesian Military (TNI)
- Provide medical team support

Non-Government Organizations
- Support Indonesian Assistance Efforts from people of Indonesia

National Disaster Preparedness Training Center – Univ of Hawaii
- Provide Technical Advice for BNPB
LESSONS LEARNED

A. COMPREHENSIVE COLLABORATIONS

UN OCHA (2020)

Individuals
Communities
Local
National
Regional
International

The Private Sector
The Public Sector
The Citizen Sector

Civil Society

Source: Copernicus EMS (2023)

LESSONS LEARNED

B. COMMUNITY RESILIENCE & RULES ENFORCEMENT

RESILIENCE:
The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

UN DRR (2022)
C. ACCESS TO QUALITY BASIC QUALITY SERVICE

LESSONS LEARNED
LESSONS LEARNED

D. ALL-HAZARD APPROACH IN MITIGATION

Source: Lemieux et al., 2016
**SYRIA**

- 12 year after civil war: Bombardment, displacement, isolation, drought, economic meltdown, and now earthquakes
- 12.1 M people, (>50% population) food insecure
- 2.9 M are at risk of sliding into hunger
- 13x food inflation in 3 years (2x in 12 months)
- 28% stunting in children
- 25% maternal malnutrition in north-east Syria.
- self-sufficient in food production => top 6 in food insecurity now
- 25% wheat production capacity in 2023

Source: WFP, 2023
References


TURKEY-SYRIA EARTHQUAKES – WHY WERE THEY SO BAD?

David Sanderson, UNSW
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APRU, 16 March 2023
The Turkey/Syria earthquakes
February 2023

- 7.8 and 6.3 magnitude earthquakes
- Thousands of aftershocks
- Over 50,000 dead
- 26 million people need assistance (WHO)
- Ongoing conflict in Syria
Tragically, the scale of loss is nothing new
Indonesia earthquake
November 2022

Over 334 dead, 2,000 injured, over 100 children killed

Source: AFP
Szechuan earthquake
May 2008

Nearly 90,000 people killed, over 5,300 children killed, ‘the bulk of them students attending classes’ - Britannica
A natural disaster?

'This is a crime scene'
Disaster = hazard x vulnerability
The Progression of Vulnerability

1. Root Causes
2. Dynamic Pressures
3. Unsafe Conditions

Disaster → Hazard
The Progression of Vulnerability

1. Root Causes
2. Dynamic Pressures
3. Unsafe Conditions

Collapsing buildings

Disaster

Hazard
Almost 53,000 schools in earthquake-prone regions - about 60 million students at risk

‘Contractors choose economic profit over safety’

- Widjojo Prakoso, professor of engineering, University of Indonesia
Szechuan - ‘An unequal disaster’

BBC: ‘China earthquake brings faulty school design to the fore’

‘Why is it that only the schools collapsed?’

‘China has "fairly rigorous building codes. The problem is implementation”’

"You can buy the building inspector ... you can't buy off the earthquake."

Source: BBC
Party secretary Jiang Guohua with parents of children killed in the Fuxin No. 2 Primary School in Mianzhu.
Turkey earthquake: Why did so many buildings collapse?

‘There's very little enforcement of building standards on new builds’

- David Alexander, February 2023
Turkey’s earthquakes show the deadly extent of construction scams

The death toll has now reached 42,000, making the quakes the most lethal in the country’s modern history

• More than 50% of buildings (almost 13 million) built illegally
• Government ‘construction amnesties’ for structures built without the safety certificates
• Up to 75,000 buildings across the earthquake zone have construction amnesties
The Progression of Vulnerability

1. Root Causes
2. Dynamic Pressures
3. Unsafe Conditions

Corruption  Collapsing buildings  Disaster  Hazard
The abuse of entrusted power for private gain

- Transparency International
‘The global cost of corruption ... more than 5% of global GDP (US$2.6 trillion) with over US$1 trillion paid in bribes each year’

-Wickenbeg, 2013
Crises, construction and corruption.

Annual Judith Neilson Lecture
UTZON Lecture Series 2020

Professor George Ofori
and
Professor David Sanderson

“\textit{It is estimated that about 30\% of the money that governments spend on infrastructure is lost through corruption, mismanagement, and through clear stealing. It costs the taxpayer money, which could have otherwise been used as a real investment in the infrastructure or jobs.}”

Professor George Ofori. Photo: Supplied.
‘83% of all deaths from building collapse the last 30 years occurred in [more] corrupt countries’

- Ambraseys and Bilham, Nature Journal
How did corruption contribute?

Corruption Problems

- Abuse of power
- Blackmail
- Bribery
- Clientelism/Patronage
- Collusion/Cartel/Price Fixing
- Conflict of Interest
- Corruption
- Cronyism
- Election Fraud
- Embezzlement
- Facilitating Tax Evasion
- Facilitation Payment
- favouritism
- Forging
- Fraud
- Fraud/False Accounting
- Gift Giving
- Illegal Lobbying
- Illicit Political Contribution
- Inefficiency/Red Tape
- Kickback
- Lack of Transparency
- Mismanagement of Public Funds
- Misuse of Insider Information
- Misuse of Public Position
- Money Laundering
- Nepotism
- Peddling influence
- Revolving Door
- Sexual Favours
- Tax Evasion
- Tax Fraud
- Theft
- Trafficking
- Trafficking of Influence
- Vote-buying
- Welfare Fraud
- Whistleblower Retaliation
- Whistleblowing
- Withholding of Public Information

Why did this happen?

- People living in dangerous places
- The amount of poverty
- Disaster preparedness that should have been better
- Building and after: collapse that shouldn’t have
- Resilience that could have been stronger

List source: EU taxonomy of corruption, 2016
Corruption and disasters in the built environment: a literature review

David Sanderson, Sonny S. Patel, Martin Loosemore, Anshu Sharma, Kelsey Gleason, and Ronak Patel

This paper presents the findings of a review of academic literature concerning the degree to which corruption worsens disasters triggered by natural hazards in the built environment. The research employed a 'systematic literature review' methodology to analyze leading academic databases, resulting in a detailed analysis of 59 peer-reviewed, published papers. It found that while much of the literature focuses on earthquakes (relating to building and infrastructure collapse), the quality of governance, and the drivers of corruption, there is presently very limited scholarship on the general scope, reach, and scale with respect to how disasters are worsened by corruption. It is notable that the Sendai Framework for Disaster Risk Reduction 2015-2030 and a number of other high-level reports fail to mention corruption. The paper argues that this serious gap in understanding and expressing how corruption increases vulnerability in the built environment within disaster studies potentially supports the furtherance of corruption in worsening disasters.

Keywords: built environment, corruption, transparency

Introduction

It is well known that there is no such thing as a 'natural disaster'. The natural hazard—earthquakes, floods, or windstorms, for instance—is only half the picture. Disasters occur when the natural hazard meets vulnerability, which in the case of the built environment is largely human-made. Decisions that affect vulnerability within the built environment, such as where to site a settlement and how to manage it, are within the purview of societal choice. And so too is the design of the infrastructure and the buildings within that settlement and the way that they are built and subsequently maintained.

Vulnerability itself is a complex and contested term. Developments in disaster response and recovery, as well as pre-disaster mitigation and preparedness, have led to evolution of the significance of the social and political dimensions of vulnerability, alongside physical (such as site location and construction) and economic aspects. The social dimensions of vulnerability include the impacts on people and societies of, among other things, culture, wealth and poverty, access to services (such as healthcare) and employment, and discrimination. The importance of the social dimensions of vulnerability and risk are well recognised, notably in the Sendai Framework for Disaster Risk Reduction 2015-2030...

Disasters

‘The research found that .... there is presently very limited scholarship ... on how disasters are worsened by corruption’.
Thanks

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