
War, Earthquake and Recovery Politics in Conflict-Affected Syria

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ABSTRACT

The impacts of the 2023 Turkey-Syria earthquake and the aftershocks magnified the recovery challenges faced by the Syrian communities already ravaged by over a decade of war. In Syria, where critical infrastructure and housing had been destroyed or neglected due to ongoing conflict; the earthquake exacerbated the damage exposing pre-existing vulnerabilities further complicating recovery efforts. The unique intersection of war and earthquake damage has been examined, providing clarification on how conflict-driven destruction and loss of social assets including fractured governance and conflicting political affiliations amplified the impacts of the earthquake. Through an analysis of the earthquake's destruction and the political dynamics of recovery in war-torn areas, barriers such as limited international aid, fractured governance, and politicised resource distribution have been analysed. Drawing on firsthand experiences and field observations, the authors explore the intricate interplay between disaster recovery and conflict recovery, offering insights into how overlapping crises reshape the trajectory of rebuilding efforts. By focusing on Syria's specific context, challenge to conventional earthquake recovery paradigms has been highlighted that emphasise the importance of tailored approaches for regions grappling with compounded crises.

Keywords: Syria, Earthquake Recovery, War Damage, Conflict-Affected Areas, Disaster Response, Recovery Politics, Humanitarian Aid, Post-Conflict Reconstruction.

1. INTRODUCTION

On 6 February 2023, a moment magnitude (Mw) 7.8 earthquake struck southern and central Turkey and northern and western Syria. Approximately nine hours later, a Mw 7.6 earthquake occurred north-northeast of the first event, in Kahramanmaraş Province (Zilio & Ampuero, 2023). In Syria, the earthquake primarily affected five governorates in northern and northwestern regions of Syria's 14 governorates, areas already devastated by war since 2011. The earthquake damaged or destroyed approximately 400,000 housing units across urban and rural Syria, where many residents were already living in war-damaged, overcrowded, and substandard housing or had been displaced from their original homes. The earthquake impacted approximately 8.8 million people and caused approximately 6,000 deaths (UNDP, 2023a). Among all sectors such as water supply and sanitation, infrastructure, health, housing and others, housing sustained the most significant damage. While it was difficult to proportion the damage caused by war from that caused by the earthquake, post-disaster recovery estimates suggested that the housing sector alone required more than US\$9.2 billion for recovery - out of a total estimated recovery cost of approximately US\$14.7 billion across the five affected governorates (UNDP, 2023b).

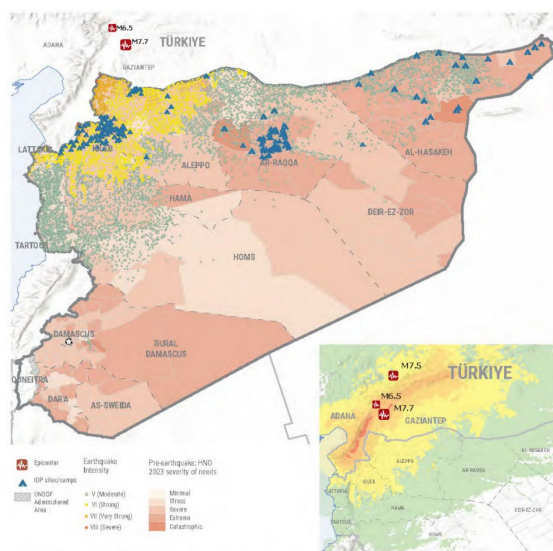


Figure 1. Earthquake affected areas (source: (UNDP, 2023a))

These earthquake-affected regions, largely controlled by opposition forces, lacked the presence and support of the central government. The earthquake exacerbated pre-existing vulnerabilities, further straining the already fragile housing, social, and infrastructure sectors. Syria's prolonged conflict had devastated essential infrastructure, displaced millions, and eroded institutional capacity, leaving the country ill-equipped to respond to a disaster of this magnitude. While the earthquake was a natural disaster, it also acted as a multiplier of existing vulnerabilities, exposing weaknesses in governance, aid delivery, and recovery mechanisms (UNDP, 2023b).

Syria's ongoing war had already led to extensive destruction of both urban and rural infrastructure, including hospitals, schools, housing, and roads, many of which had been systematically targeted or neglected. Communities had endured prolonged displacement, economic hardship, and loss of essential services, leaving them particularly vulnerable when the earthquake struck. The disaster compounded an already dire humanitarian crisis, further deteriorating living conditions in the affected areas. It is estimated that the war displaced approximately seven million Syrians internally (UNCHR, 2023), out of a pre-war population of approximately 22 million (Wikipedia, 2025).

The intersection of war damage and earthquake destruction is investigated, focusing on the compounded challenges they present for recovery. The manner in which ongoing conflict influenced disaster recovery mechanisms is explored and the role of how political dynamics shaped the distribution of aid and reconstruction resources is discussed. It is also highlighted how political instability can intensify the impact of natural disasters, further complicating recovery efforts in conflict-affected regions.

2. BUILDING TYPOLOGIES

From an urban planning perspective, buildings in Syria can broadly be classified into two categories: i) Formal buildings – constructed in designated zones regulated by central government or provincial planning authorities and subject to the official building permit process and ii) Informal buildings – constructed in rural or unplanned areas, often in a haphazard manner, without adherence to zoning regulations or building codes (Figure 2). Formal areas are designated for residential development through structured planning mechanisms. Since the 1970s increasing rural-to-urban migration has been driven by economic opportunities and has outpaced the capacity of formal settlements. The lack of policy intervention to address this issue led to the proliferation of informal settlements on agricultural land, wasteland, and other non-residential zones. These unplanned settlements typically follow lower construction standards and have fewer urban services than formal areas. However, mostly in major cities, basic infrastructure such as water, gas, and electricity supply were provided in the informal settlements.



Buildings in formal area

Buildings in informal area

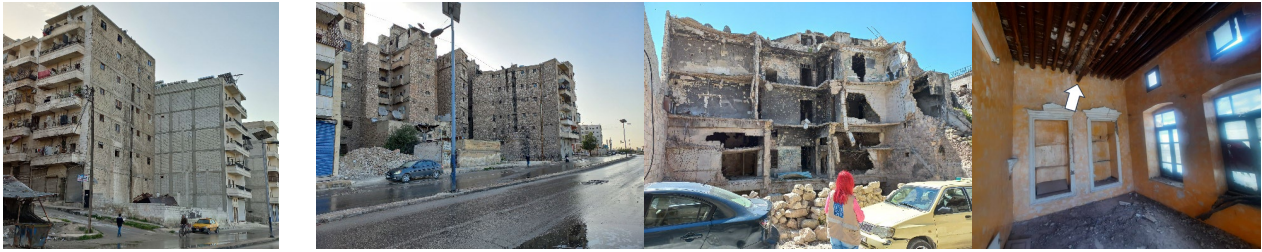
Buildings in old historic centre of Aleppo, a world heritage site

Figure 2. Houses in formal and informal areas

From socio-economic perspective these informal areas are significantly more deprived than their formal counterparts. The deprivation and lack of basic services in these areas contributed to severe grievances, making them a breeding ground for insurgency and war. These areas suffered far more effect of the war than the formal areas.

The main building typologies in Syria include private apartments, dense popular housing, countryside houses, traditional Arabic houses and isolated family homes. In the earthquake-affected areas, building types vary widely, including:

- Reinforced concrete (RC) frame buildings
- Hybrid structures (combining RC and masonry)
- Concrete block masonry buildings
- Stone masonry structures
- Adobe/mud buildings



RC frame buildings with concrete block masonry infill-cement-sand mortar

Stone masonry buildings in

A concrete block masonry building damaged by war

A traditional building with flexible floor

Figure 3. Building typologies

In northern Syria, where the terrain is hilly and stone is abundant, older buildings are predominantly constructed of stone masonry. Since the 1950s, reinforced concrete and concrete block masonry have become the dominant construction materials in urban and rural areas. However, historic city centres and rural settlements still feature older stone masonry buildings. The cladding and partition walls are typically made of stone and concrete block masonry in reinforced concrete buildings with most concrete construction being cast-in-place.

Despite Syria being prone to earthquake hazard, earthquake-resistant design and construction practices have not been widely adopted. Post-2023 earthquake field inspections of both damaged buildings and those under construction revealed that earthquake-resistant provisions were not consistently followed, even when buildings were structurally designed for seismic forces. Furthermore, construction quality in informal settlements was notably inferior to that in formal areas, further increasing their vulnerability to earthquakes.

3. DAMAGE AND DESTRUCTION TO BUILDINGS

The 2023 earthquake caused widespread damage and destruction across five northern and north-western governorates of Syria: Aleppo, Latakia, Hama, Idlib, and Tartous. The destruction was notably more severe in informal settlements compared to formal areas, highlighting the inferior quality of construction in these informal zones. In addition to the substandard construction, it is important to note that buildings in informal areas sustained significantly greater damage than those in formal areas because many of the buildings in these informal areas had already been weakened by the war explosions, as these areas were hotspots for conflict and insurgency. As a result, many buildings in these areas were severely damaged, partially collapsed, or destroyed when the earthquake struck (Figure 4). These differentiated impacts are likely to widen the gap in living standards between formal and informal areas.



RC frame buildings damaged by war and exacerbated by earthquake	RC frame building damaged by earthquake, note puncture of the roof slab	Modern stone masonry building	Stone masonry building damaged by war and earthquake in a historic centre
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Figure 4. Building damage

Modern buildings constructed of materials such as cement and steel with some compliance to the prevailing building code showed much better seismic performance as compared to the buildings constructed of similar materials but lacking quality control or constructed of concrete block and stone masonry. For example, buildings in the informal parts of historic Aleppo (particularly the eastern sections) and the old stone masonry structures in the historic areas of the city experienced significant damage. In contrast, the buildings in the western parts of Aleppo city which contained mostly formal areas suffered minor to negligible damage.

4. POST-EARTHQUAKE RECOVERY PLANNING

Following the 2023 earthquake, the Post-Disaster Needs Assessment (PDNA) was completed as part of the recovery planning process. The PDNA is a comprehensive, government-led process used to evaluate the impact of disaster impact across various sectors, estimate recovery needs, and develop strategies for reconstruction and resilience-building. PDNAs provide a structured and coordinated framework for disaster recovery and serve as the basis for mobilising international funding and support. This process was initially developed by the United Nations (UN), the World Bank, and the European Union (EU) to guide post-disaster recovery (EU, 2013). Typically conducted with the support of these international organizations, the PDNA for Syria was instead completed by UN agencies due to political and logistical reasons, resulting in the report being titled Syria Earthquake Recovery Needs Assessment (UNDP, 2023b).

The impact of the earthquake, including both damage (total or partial destruction of physical assets due to a disaster) and losses (decline in economic activity and income due to disaster-induced disruptions), was estimated at approximately US\$8.9 billion across 12 sectors, including Housing, Land, and Settlement (HLS); infrastructure; water and sanitation (WASH); education; nutrition; and others. The total estimated recovery cost was approximately US\$14.7 billion across the 12 sectors, with over US\$9.2 billion allocated to the HLS sector alone (UNDP, 2023a).

The PDNA identified people-centred recovery in the HLS sector as a central priority. The recovery strategy aimed to enhance housing accessibility, facilitate the safe return of displaced populations, and foster social cohesion. Particular attention was given to vulnerable groups such as women-led households, the elderly, conflict-displaced individuals, and communities suffering from extensive damage. The strategy employed a dual approach: addressing immediate housing needs for displaced populations and those residing in damaged buildings, while also laying the groundwork for a long-term, sustainable framework for housing recovery (UNDP, 2023b).

A participatory, people-centred approach was seen as crucial for recovery in war-torn Syria. A gender-sensitive framework was deemed essential to address disparities in homeownership, inheritance, and financial inclusion. Conflict-sensitive reconstruction practices were also emphasised to safeguard Housing, Land, and Property (HLP) rights, contributing to long-term peace and stability. The strategy prioritised owner-driven reconstruction, policy reforms for informal settlements, and resilient urban development to accommodate rapid urbanization. Sustainable building practices, such as reusing construction materials and adopting low-carbon technologies, were strongly encouraged. Furthermore, economic regeneration efforts focused on creating local employment, fostering entrepreneurship, and strengthening the construction sector.

through vocational training and microfinance initiatives to ensure the recovery efforts led to lasting socio-economic benefits (UNDP, 2023b).

The SERNA outlined specific implementation strategies for recovery across all sectors, emphasising that HLS recovery must reflect the complexities of housing ownership and usage. The definition of housing included individually owned homes, multi-unit buildings with multiple owners, and informal settlements where ownership was unclear or untraceable. The recovery approach identified the need for clear, inclusive, conflict-sensitive, and gender-responsive policies that prioritise sustainability and meet community needs. The SERNA also emphasised the importance of establishing policies that addressed ownership rights, created regulatory frameworks for informal settlements, and implementation mechanisms for decision-making in multi-owner housing buildings. These measures were vital to ensure a resilient and equitable rebuilding process (UNDP, 2023b).

5. CHALLENGES TO RECOVERY

The ongoing conflict, fragmented governance, absence of central government authority in affected areas, and restricted international access have created formidable challenges for recovery efforts in Syria. These complexities have given rise to political, logistical, and legal barriers that severely hinder the effectiveness of earthquake recovery initiatives.

Political dynamics of recovery: Reconstruction efforts in Syria have been highly politicised. In government-controlled areas, recovery initiatives were often tied to political allegiance rather than humanitarian need, while opposition-held territories faced bureaucratic and logistical obstacles in receiving aid. Resources and assistance became tools of political influence, aggravating regional inequalities and fostering deep mistrust. The Syrian government imposed stringent restrictions on aid distribution, further complicating efforts to ensure an equitable recovery (HRW, 2019).

International humanitarian aid and geopolitical barriers: The availability of international aid was significantly constrained by sanctions and geopolitical considerations. Without a central coordinating body, aid distribution was fragmented as the earthquake-affected areas were controlled by various factions with conflicting political affiliations. Sanctions, border controls, and mutual distrust between stakeholders severely limited the scope and effectiveness of any humanitarian interventions (Beaujouan, 2023).

Fractured governance structures: The division of Syria into multiple territories of control complicated recovery efforts. Earthquake-affected areas were governed by different factions with competing agendas, differing affiliations with diverse priorities, creating inefficiencies and duplication of efforts (Beaujouan, 2023). These factions often lacked the resources to support the recovery process, further exacerbating the situation.

Overlapping crises: The simultaneous recovery from war and earthquake placed immense strain on already limited resources. Efforts to repair earthquake-damaged housing and infrastructure had to contend with widespread war-related destruction leading to resource shortages, delays, and rising tensions among stakeholders.

Restricted access to affected areas: Security concerns and regulatory barriers severely limited access to earthquake-affected regions in Syria. Many of these areas, under opposition control, were inaccessible from government-held territories, with entry permitted only from Türkiye. However, individuals who accessed these areas from Türkiye were subsequently denied visas to enter government-controlled regions. Even within government-held areas, access to earthquake-affected areas was severely restricted and required special permits, leading to significant delays and logistical difficulties.

Prohibitions on permanent reconstruction: In conflict-affected areas, permanent reconstruction was explicitly prohibited by the humanitarian donors to maintain status quo, allowing only for the repair of residential housing buildings damaged by both the war and the earthquake. This restriction has further complicated long-term recovery efforts, leaving many communities in a state of prolonged vulnerability.

Lack of access to financing: House or property insurance in Syria is uncommon, and reconstruction financing through insurance is unavailable. Due to the ongoing conflict, humanitarian funding has been strictly allocated to life-saving interventions and, in rare cases, Early Recovery programs. The Unilateral Coercive Measures (UCMs) imposed on Syria by the US, the EU, and the UK have hindered economic recovery, restricted humanitarian aid delivery, and blocked international financing channels necessary for reconstruction under any modality (ESCWA, 2024). Although data on the situation remains inconsistent, it is evident that the prolonged conflict, coercive measures, and fragmented governance have left approximately 70% of Syrians in need of humanitarian assistance, with 90% living below the poverty line making access to private financing extremely difficult (WB, 2024) (UNCHR, 2024). Therefore, without assured access to international funding and the import of construction materials, any meaningful earthquake recovery program in Syria is unlikely to commence.

Human resources: Syria is currently suffering from the extreme shortage of construction workers. The conflict in Syria has resulted in a significant loss of the working-age population due to death, injury, and both internal and external displacement. Since 2011, over 14 million Syrians have fled their homes in search of safety. Currently, more than 7.4 million Syrians remain internally displaced, while approximately 5.5 million refugees reside in the neighbouring countries of Syria - Türkiye, Lebanon, Jordan, Iraq, and Egypt. Germany hosts the largest number of Syrian refugees outside the region, with over 850,000 individuals (UNCHR, 2024). The massive displacement of population has led to a severe shortage of skilled professionals, including engineers, academics, and business experts, critical for post-conflict recovery. The loss of university faculty and researchers has weakened training institutions and universities responsible for producing construction professionals. Additionally, technical institutes that once trained engineers and builders have suffered from both brain drain and physical destruction of facilities, further exacerbating the shortage of expertise needed for reconstruction efforts.

A portion of the conflict-affected building stock is located within the walled city of Old Aleppo, a UNESCO World Heritage Site (Figure 3c). In the conflict area, there are many habited and uninhibited historic sites (Soufan, 2018). The recovery, repair, and retrofitting of these historic buildings pose unique challenges as they must comply with stringent UNESCO guidelines that prevent alterations to their character, construction materials, and structural integrity. This requires specialised expertise in conservation and restoration rather than conventional earthquake-resistant reconstruction and repair (UNESCO, 2018). The challenge is further compounded by the limited availability of professionals with the necessary specialized knowledge and skills.

Recovery modality and governance structure: As Syria is strongly governed by the central governance structure, it lacks effective local bodies, citizen groups, and public institutions to drive recovery programs at the local level. However, the war-weakened central government lacks both the will and capacity to lead a centrally governed recovery process. An alternative recovery approach could be owner-driven housing reconstruction (ODR), where homeowners take the lead in rebuilding their houses with financial, socio-technical, and material support from governments, NGOs, or international agencies. This approach contrasts with contractor-driven or government-led reconstruction models. While ODR is cost-effective, fosters community empowerment, enables faster decision-making, and stimulates the local economy (UNDP, 2021), it holds less appeal other than in rural areas. The lack of appeal is primarily due to the historical reliance on centralised control, a lack of decentralisation in authority and decision-making, and the weakness of public institutions in Syria. Consequently, it is unlikely that ODR could serve as a universal governance model for

recovery. Additionally, since insurance is not common in Syria, any insurance-driven recovery is not feasible. The situation is further complicated by extensive urban destruction, which presents a highly complex challenge for recovery for any recovery model, particularly because of the fractured governance structure in Syria.

6. CONCLUSION

The 2023 Turkey-Syria earthquake highlighted the urgent need for a context-specific approach for earthquake recovery in the conflict-affected regions of Syria. Traditional recovery frameworks, designed for politically stable environments was considered ineffective in the face of fractured governance and complex political landscape in Syria. A more tailored strategy is required, one that considers the interplay of domestic and international political dynamics, the resilience of local communities, and the sensitivity to ongoing conflicts. Future recovery efforts must not limit itself to the immediate damage caused by the earthquake but also focus on resolving long-term structural vulnerabilities exacerbated by the war, ensuring a recovery process that is both inclusive and sustainable.

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