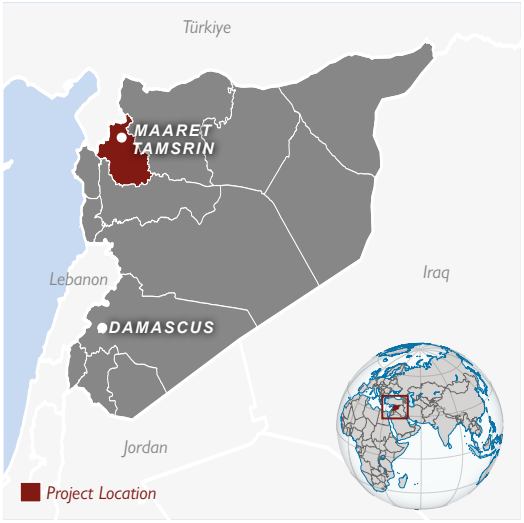
CASE STUDY

SYRIAN ARAB REP. 2023-2024 / COMPLEX/MULTIPLE

CONTEXT / SETTLEMENT | SHELTER TYPE | SUPPORT METHODS

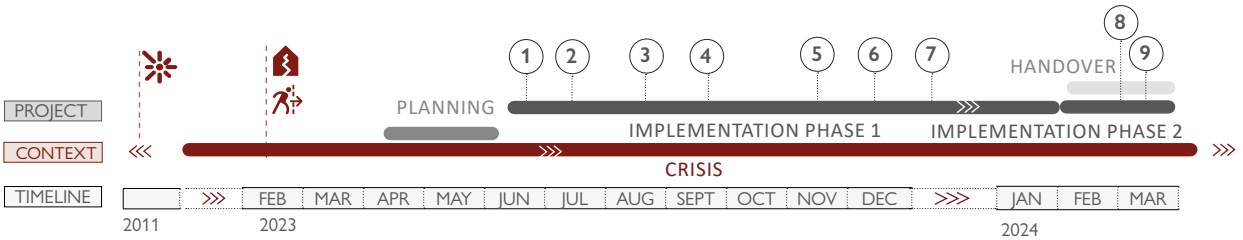
CRISIS	Syrian Crisis and 2023 earthquakes
PEOPLE AFFECTED	8.8 million people affected*
PEOPLE DISPLACED	2.8 million people displaced*
PEOPLE WITH SHELTER NEEDS	265,000 individuals* lost shelter 225,000 individuals* with moderate damage 632,000 individuals* with minor damage
PROJECT LOCATION	Shekh Bahr, Maaret Tamsrin subdistrict, Idlib governorate
PEOPLE SUPPORTED BY THE PROJECT	962 individuals (473 female, 489 male)
PROJECT OUTPUTS	200 shelter units installed Site level interventions include: 1 water station, 3,500m of network constructed, 1 ARP system/circulation pump installed, 800 m³ of solid waste desludged monthly, 30 m³ solid waste collected monthly, 40 garbage bins distributed.
SHELTER SIZE	45 m² First shelter 55 m² Second shelter
SHELTER DENSITY	9 m² per person based on the average HH size
DIRECT COST	USD 2,480 per household
PROJECT COST	USD 3,100 per household



PROJECT SUMMARY

The project delivered transitional shelter and essential services to earthquake-affected and displaced households in Northwest Syria, improving safety and living conditions in a fragile context. Insulated shelter units were installed alongside water networks, sanitation facilities, drainage systems, and solar lighting to create more functional and risk-aware settlements. The approach integrated household shelter with site-level services, addressing protection risks and supporting dignified living conditions beyond immediate emergency needs. Community engagement and coordination with local councils and clusters informed design, implementation, and handover, strengthening ownership and sustainability. The project demonstrated a practical model for bridging emergency shelter and recovery, combining risk reduction measures with adaptable solutions suited to high-density displacement settings.

* *HNRP 2024*



Feb 2023: Earthquake (while the Syrian crisis is still ongoing).

1. **Jun 2023:** Preparatory stage and stakeholders/community outreach and authorities' approval.
2. **Jul 2023:** Housing and land property (HLP), and establishment of Community Representation Committee (CRC).
3. **Aug 2023:** Sites planning, technical design and study.
4. **Sep 2023:** beneficiary verification process.
5. **Nov-Dec 2023:** Site preparation began: levelling and graveling, drainage system, and lighting.
6. **Nov-Dec 2023:** Implementation works of WASH infrastructure.
7. **Dec-Feb 2024:** Implementation works of shelters.
8. **Feb 2024:** IDPs transition from tents to dignified shelters; hand-over signed.
9. **Feb-Mar 2024:** Operating and maintaining the water systems.

CONTEXT

By 2023 the Syrian Arab Republic (Syria) had entered a thirteenth year of crisis, marked by protracted displacement, economic decline, disrupted services and intermittent hostilities. The February 2023 earthquakes in Türkiye and northern Syria deepened this multi layered emergency. In Syria alone, almost 6,000 people were reported killed and more than 12,800 injured, while the wider impact compounded fragility across already overstretched systems.

Pre existing damage to infrastructure and public services limited capacity to absorb the shock. In the north, damaged roads, constrained healthcare, and degraded emergency systems made delivery of assistance more difficult. The earthquakes increased the scale and urgency of shelter and basic services needs in a region where livelihoods had already eroded and poverty remained extensive.

SITUATION BEFORE THE EARTHQUAKES

Before the earthquakes, Northwest Syria was characterized by severe humanitarian needs driven by the conflict. As of 2022, the country had around 6.8 million internally displaced people, with many living in overcrowded and makeshift arrangements, such as camps and unfinished or damaged buildings, with limited access to basic services. An estimated 53% of people had access to clean water, approximately half of health facilities were non functional, and close to 90% of the population lived below the poverty line. Many homes were unsafe or partially destroyed, with widespread damage to infrastructure and services compounding protection risks and food insecurity. The crisis left millions reliant on aid, including at least a fifth of the country's population in the northwest.

SITUATION AFTER THE EARTHQUAKES

Following the earthquakes, precarious housing units were destroyed or rendered uninhabitable, and large numbers of families were displaced into informal camps, public spaces and unfinished structures. The primary driver was safety: structural failure or the fear of collapse under aftershocks forced evacuations, while economic distress and disrupted markets further constrained options. Geographically, many movements remained local due to scarce safe alternatives; families frequently shifted within the same localities to informal sites and temporary shelters. In some cases, households returned briefly to salvage belongings or protect land rights, but dwellings were often unsafe for continued occupancy. The combined impact of earlier conflict and new earthquake damage sharply increased immediate shelter needs and underlined the urgency of risk aware, dignified solutions.

NATIONAL SHELTER RESPONSE

The response in Northwest Syria aligned with inter agency coordination through the Shelter/NFI (SNFI) and WASH clusters and with local councils, focusing on stabilization of living conditions, reduction of protection risks and integration of essential services. Coordination emphasized harmonized selection criteria, minimum standards for shelter and WASH, and settlement scale risk management (e.g., drainage, flood mitigation and safer siting). The response sought to deliver solutions feasible under constrained access and supply chains, while embedding participation in planning, delivery and handover.

Following the earthquakes, many homes had been destroyed or rendered precarious, and families found shelter in different locations, such as informal sites like this one, where the organization later implemented this project. Displaced people set up tents and makeshift structures and had little to no access to water and sanitation.

PROJECT STRATEGY

The project was designed to bridge immediate humanitarian shelter needs with safer, more habitable conditions at settlement scale. At its core were dignified, transitional household units made of insulated sandwich panels installed on concrete structures. This typology, developed within the SNFI cluster, balanced speed of delivery, thermal performance and durability relative to tents or ad hoc self builds. At site level, the shelter package was integrated with essential WASH and infrastructure services to create a safer, more functional environment. These included water networks and a station, septic tanks and latrine blocks, household sanitation facilities, drainage to reduce flood risk, surface water management and solar street lighting.

Risk reduction and environmental measures were embedded in the approach. Site selection and preparation aimed to avoid or mitigate flood prone conditions; land leveling, surface water control, and durable construction for critical components supported safer occupancy. Solar lighting reduced reliance on diesel generators and improved safety in shared areas.

PROJECT IMPLEMENTATION

Implementation occurred in phases, delivered by contracted firms and overseen by a specialized technical team comprising civil, architectural, electrical and WASH engineers. The team finalized shelter designs and site layouts, aligned targeting and standards with the SNFI and WASH clusters, and secured agreements with local councils. Works were sequenced for safety and efficiency: site preparation and environmental risk mitigation came first (e.g., leveling, drainage, access routes), followed by installation of shelters, WASH infrastructure, solar lighting and solid waste systems.

Supply chains and access were managed adaptively. Cross border dependencies, route disruptions and market volatility were addressed by diversifying suppliers, staging deliveries, and re sequencing construction activities to align with windows of access and material availability. Security incidents and weather also affected productivity; the team adjusted schedules and staffing, increased engineering oversight, and worked through local partners to sustain implementation.

200 shelter units were installed following site planning and infrastructure works.

The project commenced with large grading and levelling works.

Sewer pipes where installed along the main roads of the new settlement.

Water and sanitation services were installed to make the site habitable.

Shelter units and sanitation blocks were installed following site preparations.

The units had a standard design and versions adapted for people with special needs. The standard unit included two rooms and and external courtyard to access the bathroom area. The portion hosting the two rooms was built using insulated prefabricated sandwich panels, which allowed speed of implementation.

TARGETING

The project prioritized households with acute shelter needs attributable to earthquake damage and displacement, in alignment with cluster guidance and local council coordination. The primary groups were families in temporary settlements (camps, reception and collective centers), families in damaged buildings without the means to repair, and households in unsafe or informal conditions with limited income. Vulnerability based prioritization further weighted female and child headed households, large families, persons with disabilities or chronic illness, older persons, and pregnant or lactating women.

COMMUNITY ENGAGEMENT

A Community Representation Committee (CRC) was established to link households, the project team and local authorities, providing a channel for preferences on shelter layout, siting, service locations and site rules. Community engagement also included information sessions on shelter use, sanitation and risk awareness, and supported local authority capacity to manage and maintain infrastructure after handover. This participatory approach strengthened trust, informed practical adjustments during implementation and ensured ownership of shared facilities.

COORDINATION

The project's delivery relied on alignment with SNFI and WASH clusters, local councils and operational agencies in the same locations. Coordination harmonized targeting and standards, reduced duplication, and ensured that shelter and WASH interventions were mutually reinforcing at site level. Joint situational awareness on access, security and logistics supported realistic planning and adaptive delivery, helping maintain pace despite periodic disruptions. Coordination also facilitated handover arrangements consistent with agreed occupancy terms and local site management capacities.

DISASTER RISK REDUCTION

DRR was integral to siting, design and material choices. In addition to avoiding flood prone areas where feasible, land shaping and drainage were used to limit waterlogging and erosion. Concrete was specified for critical components such as latrine blocks, and insulated panel envelopes reduced exposure to heat and cold, diminishing reliance on unsafe, ad hoc modifications. Together with household sanitation and on plot facilities, these measures reduced protection risks associated with shared infrastructure and improved resilience relative to tents or substandard shelters.

ENVIRONMENTAL IMPACT

The project applied a practical environmental lens to settlement design. Solar powered street lighting substituted for diesel powered lighting, cutting fuel use while improving night time safety. Drainage and surface water control limited runoff and contamination of living areas, complementing safe water and sanitation layouts. Solid waste collection and bin distribution reduced environmental health risks, while durable components lowered maintenance burdens over time. These measures aimed to reduce the settlement's environmental footprint and contribute to safer, healthier occupancy.

MATERIALS AND SUPPLY

Shelter units combined concrete (for stability and durability of critical elements) with insulated sandwich panels (for thermal performance and speed of assembly). Procurement balanced quality, price and availability through local and cross border suppliers. Given the context of disrupted routes and variable stock levels, deliveries were staged and work packages sequenced to keep construction progressing despite partial shipments. This adaptive procurement strategy was essential to meeting timelines without compromising quality.

The site was planned with major roads following the natural slope of the land. Units of different sizes (45 or 55 sqm) hosted a total of 200 families.

CROSS CUTTING ISSUES

Protection and inclusion were mainstreamed in the design of units and services. Household level sanitation (latrine, washing area and cooking space) improved privacy and safety, while solar lighting enhanced safety in communal spaces after dark. Targeting criteria and community validation addressed the needs of female and child headed households, large families, older persons and persons with disabilities or chronic illness. The CRC and two way information channels enhanced accountability and supported informed occupancy and maintenance.

MAIN CHALLENGES AND ADAPTATIONS

Operational delivery faced a convergence of constraints. Material flows were delayed by cross-border issues and route closures; market volatility forced quick price changes and substitutions; security and weather disruptions caused scheduling delays. The team mitigated these through diversified suppliers, re sequencing of activities, recruitment of additional engineering capacity and tighter contractor management.

Targeting presented challenges amid overwhelming needs, requiring careful coordination with local councils and partners to balance vulnerability criteria and geographic coverage.

Environmental hazards at selected sites necessitated added earthworks and drainage before shelter installation. Despite these hurdles, an integrated shelter and services package proved feasible and replicable within the operational envelope.

HANDOVER

Handover included technical inspection of completed works, documentation for site management and a site level MoU that granted beneficiaries a five year, rent free right to reside. The MoU framed mutual responsibilities for use and care of units and services and provided a clear reference for dispute resolution. Handover timing and procedures were coordinated with the CRC and local councils, and support focused on aligning site management responsibilities with local capacity. The settlement layout, concrete works and services were conceived to allow potential future upgrades when resources and security conditions improve.

OUTCOMES AND WIDER IMPACTS

By completion, families had transitioned from tents or unsafe structures to insulated, dignified household units integrated with functioning WASH services, drainage and solar street lighting. CRC engagement and collaboration with local councils helped institutionalize stewardship of infrastructure, while site level risk reduction measures supported safer occupancy over time. The project demonstrated a workable bridge from emergency tents to more durable, transitional conditions that can be sustained for several years.

The intervention also contributed to practice in complex, high density, multi hazard settings. It showed how household level shelter of adequate size and performance can be paired with settlement scale services to improve habitability and reduce protection risks. Documented procedures and occupancy agreements (including a five year rent free right to reside) provided predictable tenure during recovery and set a baseline for future upgrades as conditions permit.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

√ **Strong planning and vulnerability-based targeting improved relevance and equity.** Clear criteria, community validation and coordination helped prioritize households affected by earthquake damage and displacement, while balancing pre-existing vulnerabilities and protection concerns.

√ **Public land allocation enabled rapid siting, formal agreements and more predictable tenure.** Working with local councils helped secure land use approvals and occupancy arrangements, and supported planning for infrastructure development, operation and maintenance.

√ **Specialized technical capacity and contractor oversight safeguarded quality and safety standards.** Engineering, WASH and protection inputs strengthened designs and sequencing, including early site preparation and durable concrete components alongside insulated panel units.

√ **Adequate resources and adaptive procurement supported timely delivery and durable outputs.** Reliable funding, materials and staffing reduced delays and enabled completion of both household units and essential services, despite periodic access and market disruptions.

√ **Integrated shelter, WASH and site infrastructure improved safety, dignity and settlement functionality.** Coordinated implementation with the SNFI Cluster, WASH Cluster and other actors reduced duplication and supported a more functional, risk-aware settlement environment.

WEAKNESSES

× **Compressed timelines increased pressure on staff and contractors.** Fast delivery requirements limited contingency time for procurement and sequencing, increasing workload peaks and reducing flexibility when access, weather or markets shifted.

× **Some infrastructure components lagged behind shelter installation.** Delays in connecting the water network and completing drainage reduced functionality during the initial occupancy period and required additional follow-up to reach minimum service levels.

× **Sandwich panel shelters raised long-term durability concerns.** While quick to assemble and thermally efficient, the units may require more frequent maintenance and monitoring under Northwest Syria's harsh seasonal conditions to preserve performance.

× **Multi-stakeholder coordination was uneven at times.** Working across local authorities, clusters and other actors occasionally led to misaligned timelines and slower decisions, creating minor disruptions to sequencing and handover arrangements.

× **Targeting still left some highly vulnerable households underserved.** Given the scale of needs, selection criteria and communication could have been further refined using feedback and complaints data to better capture overlooked vulnerability profiles.

Compared to their previous accommodations during the emergency, the shelter units represented a dignified solution for families impacted by the earthquake.

Household activities such as cooking and washing were taken into account and incorporated in the design of the units. Privacy was also an essential feature.

LESSONS LEARNED

- **Engage beneficiaries early and consistently through a representative structure.** Using the Community Representation Committee and two-way communication channels helped validate priorities, incorporate practical site-layout preferences, and strengthen trust and accountability. Regular feedback checkpoints also supported quicker course-corrections during implementation.
- **Offer diversified shelter typologies to match household size and specific needs.** Applying multiple unit designs (e.g., two-room, three-room and accessible options) improved fit and reduced the need for risky, ad-hoc extensions. Future programming should also plan for the maintenance and performance limits of sandwich panels over time, including clear user guidance on safe modifications.
- **Design for seasonal extremes and longevity, not only rapid delivery.** Material specifications and detailing should anticipate harsh winter and summer conditions (insulation, weatherproofing and ventilation) to keep shelters viable for several years. This includes budgeting for routine upkeep and defining minimum technical checks before handover.
- **Continuously refine targeting to reduce exclusion errors in high-need contexts.** Harmonized, transparent criteria—combined with community validation and analysis of feedback/complaints—can help identify overlooked vulnerability profiles and improve perceived fairness. Where feasible, periodic re-verification can account for changing household circumstances and new displacement.
- **Clarify coordination, roles and decision-making early to protect sequencing.** A shared implementation plan with clear roles, communication channels and timelines across local authorities and clusters can reduce handover friction and keep shelter and infrastructure delivery aligned. Simple joint milestones (e.g., "site ready", "water on", "drainage complete") help prevent shelters being occupied before services are functional.

Solar panels and water tanks were installed over the sanitation blocks of the units. Site level interventions also included a water network and waste bins.

Shelter units were installed over concrete plinths. This typology balanced speed of delivery, thermal performance and durability.

RECOMMENDATIONS MOVING FORWARD

- Adapt shelter designs and site planning to better support larger households and privacy, including adequate living space, slightly increased distances between units, and integration of green areas, trees and child-friendly spaces.
- Allocate more time for detailed site technical studies before finalizing layouts, covering ground stability, flood risk and seismic considerations to reduce rework and improve long-term safety of shelters and infrastructure.
- Explore sustainable wastewater solutions to support greening and reduce operating costs, including treated wastewater for irrigation and solar-powered pumping where feasible.
- Plan shared community facilities and essential services from the outset, including a covered community space and basic service points (e.g., education, health and small shops) to strengthen social cohesion and access to daily needs.

FURTHER READING ON SHELTER PROJECTS

On responses to the Syrian crisis: SP 8TH ED. / A.23-26

On site planning: SP SITE PLANNING: 16 CASE STUDIES

On earthquake response: SP 10TH ED. / A.12 / AFGHANISTAN; SP 2010 / A.04-A11 / HAITI 2010.