Afghanistan

Local Architecture Review

Key Findings on vernacular shelter designs, materials, and local building practices in Afghanistan

November 2020

Shelter Cluster Afghanistan
ShelterCluster.org
Coordinating Humanitarian Shelter

UNHCR
The UN Refugee Agency

REACH
Informing more effective humanitarian action

EXECUTIVE SUMMARY

After nearly 40 years of conflict and displacement, Afghanistan remains one of the world's most complex humanitarian crisis. Shelter needs of displaced, host, and shock-affected populations remain at the forefront of this crisis with over 6.6 million people in need of Emergency Shelter and Non-food Item (ES/NFI) assistance, according to the Humanitarian Needs Overview for 2021. Of these, 2.9 million are projected to be in need of emergency shelter assistance, 2.2 million in need of transitional shelters, and 5.8 million of shelter repairs or NFI assistance.[1]

Previous studies have highlighted how many emergency ES/NFI needs are linked to an overall lack of resilience and heightened vulnerability, where many poor families lack the resources to repair their homes following a major shock, often forcing homeowners into debt that limit their ability to recover.[2] The humanitarian community has taken note of this link, highlighting in the Humanitarian Response Plan that transitional shelter responses can play a critical role in building homeowner resilience and keeping them both out of debt and of other, broader needs.[3]

However, despite the clear recognition for more transitional and permanent shelter responses, there is still a lack of understanding of what types of responses would be most effective. Previous studies have noted than many transitional or permanent shelter responses use materials that are not accessible or affordable in the areas of response, or require skills or expertise not found within the beneficiaries' communities.[4]

While standard transitional and permanent shelter packages have been put together by a variety of organizations,[5] these have not always been designed with local shelter materials or regional nuances in mind. In order to strengthen the ES/NFI Cluster's coordination of transitional and permanent shelter responses, REACH conducted a detailed assessment of shelter types, building practices, and hazard mitigation measures across all 7 regions of Afghanistan. The assessment used a mixed-methods approach, combining structured individual interviews (IIs) and semi-structured focus group discussions (FGDs) with homeowners on their shelter types and local building practices, respectively, and detailed key informant interviews (KIIs) with local shelter experts, that catalogued shelter designs and bills of quantity (BoQs). All respondents were non-displaced and internally displaced person (IDP) homeowners, selected on the basis of their shelter types. The assessment, conducted between 1-30 November 2020, covered 26 different shelter type variations in 21 districts spread across 16 provinces. In total, 585 IIs, 64 FGDs, and 63 KIIs were conducted.

All findings are indicative, rather than representative. The final results paint a contextualized picture of local shelter types and their associated construction and repair methods, as well as climatic mitigation measures across Afghanistan. The following key findings are of note:

Key Findings

Shelter Construction

- Most interviewed homeowners preferred permanent brick **or pakhsa (packed mud) flat roof shelters**, mainly due to the ease of construction and access to materials and skilled labour needed to construct them. However, these shelters were reported to require materials that could only be found in markets and/or required special skills, suggesting that the skills and materials needed for these shelter types may not always be readily available in all areas of the country.
- Most interviewed homeowners and FGD respondents preferred shelters based on affordability and cost; while stone and curved roof shelters were noted to be more durable and provide better insulation than flat roof shelters, the expense and skills required made other, cheaper and less robust shelter types more desirable.
- Interviewed homeowners reported that tradition played a very strong role in the choice of shelter and its associated materials. This helped to inform the finding that shelter designs and materials used had changed little from the shelter types identified in secondary sources, many of which were published in the 1970s. The only major changes in construction materials were a shift from woven reed mats towards plastic sheeting, and the modest increased use of metal for construction purposes.
- Among tent dwellers, the use of cotton tents tended to be more urban, and associated with displacement or poverty. Black tents were more rural and often linked to nomadic or semi-nomadic cultural practices, though some displaced homeowners used them as well.

Winterization and Comfort

- Winter preparations were reported by most interviewed homeowners to have negative environmental and sociological effects. Gathering of wood and brush for fires cut down Afghanistan's few forests at an unsustainable rate, and children are often needed to search for plastic and other harmful materials to burn.
- Most interviewed homeowners were aware of the negative effects these practices had, but due to a lack of money felt they had no other options in order to prepare for winter.
- Cheaper masonry materials, such as pakhsa, sun-dried bricks, were reported by FGD participants to be better at providing insulation in the winter and keeping the shelter cool in the summer than more expensive fired bricks. The use of kaghil, a mud plaster, was also reported to improve insulation in shelters, regardless of the construction materials used.

1. UNOCHA, 2021, Humanitarian Needs Overview, November 2020.
2. REACH, Afghanistan: ES-NFI Assessment, 2019.
3. UNOCHA, Humanitarian Response Plan: Afghanistan, 2019 - 2021, December 2020.
4. Samuel Hall, Evaluation of UNHCR Shelter Assistance Programme, 2012.
5. UNHCR, Shelter and Settlement Section, Shelter Design Catalogue, January 2016.

Repair and Maintenance

- In addition to shelters themselves; most homeowners did not have the resources to repair their own shelters, suggesting that the loss of a permanent shelter was a major factor for homeowner vulnerability.
- Interviewed homeowners reported that most households, even those living in permanent shelters, to be highly vulnerable to major shocks, primarily due to a lack of financial resources to pay for shelter construction, repairs and winterization.
- Interviewed homeowners noted similar constraints to shelter repairs as for constructing shelters; adequate materials were often unavailable or very expensive, and many homeowners discussed having to choose between shelter repair and buying enough food to eat. Many homeowners described being one major shock away from being trapped in a cycle of poverty.

Hazard Resistance

- Hazard resistance was a large influence on shelter design and materials, and most interviewed homeowners connected stronger shelters with stronger protection from both natural hazards and other human beings. The preference for permanent shelters over temporary shelters like tents or huts was often connected to safety.
- Curved roof structures were associated with hazard resistance by FGD participants, and their thick walls and domed roofs were noted to provide greater comfort in summer and insulation in winter. In addition, these structures were also reported to be far more resistant to earthquakes, flooding, and other natural hazards. However, they were less preferred due to the skills and expenses needed to build them.
- Participants in FGDs clearly linked their shelter concerns to other sectors, primarily protection; poor shelter conditions were associated with protection concerns. This was due to both a lack of security measures and reported harassment from more well-off homeowners, due to cultural stigmas associated with poverty.
- Plinths tended to be used for permanent structures only, primarily in disaster-prone regions like the North, North-East, East, South-East, and West regions. KIs noted that plinths provided protection against both earthquakes and flooding, which were the most common natural hazards reported.

Plot Arrangement:

- The majority of interviewed homeowners reported that they had built their shelters in the only location available to them, either because they owned the land or were allowed to build there. At the same time, most were concerned about being too far from economic resources and public services.
- Most homeowners constructed more than one building on their plots, which were designed to serve multiple different purposes, including housing for separate genders, livestock, and storage. Nearly all homeowners reported also constructing a latrine or free standing kitchen.

Materials Used

- Interviewed homeowners noted that materials used came from a variety of different sources; most wood, fabric, reeds, rope, and other materials were purchased in markets, while masonry was found in nature. The use of particular types of each material varied considerably by region.
- Most homeowners reported using sub-standard materials for repair and winterization. This was primarily due to a lack of money; homeowners reported that they would buy better materials if they could afford it.
- Many homeowners reported that some of the materials that they used to build their shelters were inherited; many did not have the money or resources to procure new materials for new shelters or repairs. When a shelter or its materials were lost or damaged, homeowners reported that it was **often difficult to replace these items, diminishing their** resilience and increasing overall vulnerability.

Regional Variations

- According to interviewed homeowners, most differences in building practices and overall shelter needs tended to vary based on the shelter type, rather than specific regional differences. However, specific shelter type variations tended to be more prevalent depending on the surrounding environment, suggesting that location plays an indirect role in shelter needs. Specifically:
  - Curved roof shelters were more prevalent in the North and West due to an historic lack of access to sufficient lumber.
  - Flat roof shelters were more common in the East and South East due to better access to lumber.
  - Black tents were more common in the South and South East where temperatures were warmer; in northern regions, they were only used during the summer.
  - Stone shelter variations were more common in mountainous areas like the North East, South East, and Central regions, where stone is more common, and materials for bricks may be harder to access.
  - Cotton tents were mostly used in urban environments by poor homeowners who could not afford to live in permanent shelters.

Conclusions

Overall, the assessment findings suggest that current permanent shelter needs have multi-sectoral implications; a well-built, permanent shelter with secure land tenure and comfort addresses not only the shelter needs of a homeowner, but also supports in addressing some protection, livelihood, and food security needs as well. However, the prevalence and access to the materials, skills, and local knowledge to both construct and repair shelters vary considerably based on local markets, the environment, and the communities themselves. Moreover, the lack of resources and impoverished conditions that most Afghans face greatly constrains their abilities to meet these needs on their own. Any assistance aimed at alleviating these gaps for beneficiaries needs to be based on the local materials, building designs, construction practices, and local knowledge in order to be an effective durable solution that local communities will be able to take ownership of and ensure their long term impact.

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Interior of fired brick and timber beam curved roof shelter type variation, Kandahar District, Kandahar Province. Small arches made from fired bricks are supported by wood beams. This is a style of construction unique to Kandahar Province. Photo credit: REACH Initiative, November 2020.

About the ES/NFI Cluster

The Emergency Shelter and Non-Food Items (ES/NFI) Cluster supports the provision of basic lifesaving services by coordinating the delivery of emergency, transitional, and permanent shelter solutions, as well and winterization assistance. This helps to mitigate further protection risks and allows for safer and more dignified living conditions. The ES/NFI Cluster supports these efforts through the development of tools, management of assessments, and development of coordinated strategies to improve cooperation between humanitarian organization and government entities.

For more information please visit the Shelter Cluster Website or contact the ES/NFI Cluster directly at: coord.afghanistan@sheltercluster.org

About REACH

REACH is a joint initiative of two international non-governmental organizations - ACTED and IMPACT Initiatives -and the UN Operational Satellite Applications Programme (UNOSAT). REACH's mission is to strengthen evidence-based decision making by aid actors through efficient data collection, management and analysis before, during and after an emergency. By doing so, REACH contributes to ensuring that communities affected by emergencies receive the support they need. All REACH activities are conducted in support to and within the framework of inter-agency aid coordination mechanisms. For more information please visit our website: www.reach-initiative.org.

For more information, please visit the REACH Resource Centre or contact REACH directly at: geneva@reach-initiative.org and follow REACH on Twitter @REACH_info

Cover Photo: Village of cliff-side flat roof shelter types in the Panjshir Valley, Anawa District, Panjshir Province, November 2020.

GLOSSARY & ACRONYMS

Glossary

Biswa	Traditional unit of measurement, equivalent to 2,000 square metres
Biswaasa	Traditional unit of measurement, equivalent to 5 square metres
Bukhari	Simple stove used to produce heat in winter
Buria	Woven mat made of flattened reeds
Chegh	Reeds tied together with twine or rope to make a mat
Goraghil	Mud-based mortar for constructing shelters
Gypsum	Mortar mixture used to seal masonry structures
Jireeb	Traditional unit of measurement, equivalent to 40,000 square metres
Kaghil	Straw and mud mixture used to protect masonry from the elements
Municipality	Urban administrative district
Pakhsa	Compacted mud used for construction
Palas	Woven panels made of goat hair
Sandali	Device used for heating; a table and blanket are placed over a large bowl of charcoal. People sit under the blanket to stay warm
Tasadee	Government-owned company in construction sector
Waqf	Land donated for charitable purposes

Acronyms

ARAZI	Afghanistan Independent Land Authority
BOQ	Bill of Quantity
CAD	Computer Aided Design
CGI	Corrugated Galvanized Iron
ES/NFI	Woven mat made of flattened reeds
FGD	Emergency Shelter/Non-Food Items
IDP	Internally Displaced Person
KII	Key Informant Interview
MORR	Ministry of Refugees and Repatriations
MUDH	Ministry of Urban Housing and Development
ODI	Overseas Development Institute
NGO	Non-Governmental Organisation
PPE	Personal Protective Equipment
UNDP	United Nations Development Programme
UNHCR	United National High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WFP	World Food Programme

Exterior of Gumbazi curved roof shelter type variation, Bamyan District, Bamyan Province. The Gumbazi uses thick, sun-dried brick walls to support a roof made of specially designed sun-dried bricks. This structure is renowned for its durability and comfort, but its construction often requires materials and skills that most households cannot afford. Photo credit: REACH Initiative, November 2020.

Interior of Lacheq hut shelter type variation, Khulm District, Balkh Province. Wooden struts are tied tether and placed on top of wooden lattice walls to create a frame, over which felt and other fabrics are stretched. The construction is similar to how yurts are made. Photo credit: REACH Initiative, November 2020.

INTRODUCTION

After 19 years of continued crisis and nearly 40 years of displacement, Afghanistan remains one of the world's most complex humanitarian crisis. The shelter needs of displaced, host, and shock-affected populations reflect this complexity, as shown by the results of the Humanitarian Needs Overview (HNO) for 2021. Indeed, the HNO noted in 2021 that 6.6 million people in Afghanistan were in need of Emergency Shelter and Non-Food Item (NFI) (ES/NFI) assistance. Of these, 2.9 million were in need of emergency shelter assistance, 2.2 million were in need of transitional shelters, and 5.8 million needed shelter repairs or NFI assistance.[1]

However, these needs also link to broader socioeconomic issues involved with early recovery. Shelter is often the largest expense that a family has; a 2019 assessment by REACH found that for poor families, a shock that destroyed their shelter could often force a household into debt that limited their ability to recover.[2] The same study concluded that while materials are widely available, 64% of households are unable to afford materials to repair their homes[2] and many households often have to choose between purchasing shelter repairs and food.[2] As a result, shelter responses can have very large effects on alleviating multi-sector needs, particularly for poor households. The humanitarian community in Afghanistan has taken note of this, recently highlighting in the Humanitarian Response Plan (HRP) that a move to transitional [from temporary] shelter responses can help households in "building their resilience and preventing recovering communities from slipping back into humanitarian need."[3] Many organizations have already done this by developing detailed transitional and permanent shelter designs.

However, although the humanitarian community has recognized the need for more transitional and permanent shelter responses, there is still a lack of understanding of what types of responses would be most effective, and how cultural differences in materials, building practices, and preferences may play a role in the overall durability and use of shelters. Previous assessments of shelter responses have found that while shelter responses often provide many materials that are not always available, additional costs for local materials and construction often made the construction of new shelters difficult if not impossible for some beneficiaries.[4] While standard transitional and permanent shelter packages have been put together by a variety of organizations,[5] these have not always been designed with local shelter materials or regional nuances in mind.

Creating a holistic and more effective delivery of shelter assistance requires a greater understanding of existing local shelter architecture design and building techniques, which can be used to modify existing humanitarian and government response designs

Brick and wood frame walls flat roof shelter type variation, Asadabad District, Kunar Province. The style of shelter is designed to be earthquake resistant, and is also referred to as a "Kabuli" house. Although the shelter is associated with pre-war Kabul, it is found in many locations where earthquakes are common. Photo credit: REACH Initiative, November 2020.

to ensure that they are more sustainable. An evidence-based prioritisation combined with a contextualised response strategy will ultimately enable the ES/NFI Cluster to effectively address the complex and developing shelter needs in Afghanistan. To address this gap, REACH conducted a detailed review of vernacular architecture types and construction methods across all seven regions of Afghanistan. The findings from this research provides the ES/NFI Cluster with an inventory of local shelter types, the associated material and skill related costs that are required to construct them, and ultimately a guide on how to adapt the existing response strategy to better accommodate region-specific needs.

This report is structured into six sections. The first section details the research methodology and design used by REACH in this assessment of Afghanistan's shelter types. The second and third sections present the primary data collected in the assessment: The second section summarizes shelter types, building practices, and methods of hazard mitigation at a country-level. The third section details the variations in shelter types and building practices in each of the seven regions in Afghanistan. Following this, the fourth section uses secondary data to provide a brief country profile of Afghanistan's geography, demography, climate and the Afghanistan housing market's opportunities and challenges. The fifth section of the report compiles the findings into profiles of local shelter type variations, including designs and bills of quantity (BoQs). Finally, a series of annexes at the end present details on sampling and tools used in the assessment.

1. United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), 2021, Humanitarian Needs Overview, November 2020.
2. REACH, Afghanistan: ES-NFI Assessment, 2019.
3. UNOCHA, Humanitarian Response Plan: Afghanistan, 2019 - 2021, December 2020.
4. Samuel Hall, Evaluation of UNHCR Shelter Assistance Programme, 2012.
5. UNHCR, Shelter and Settlement Section, Shelter Design Catalogue, January 2016.

METHODOLOGY AND DESIGN

RESEARCH DESIGN

To address this knowledge gap, in coordination with the National ES/NFI Cluster, REACH conducted an in-depth assessment of local building practices, shelter designs, and materials across all seven regions of Afghanistan. Shelter experts were identified as Key Informants (KIs) and homeowners were interviewed by Individual Interviews (IIs) based on the shelter type variations that they lived in; KIs and homeowners were interviewed regardless of their displacement status. The assessment used qualitative and quantitative methods to capture the breadth of shelter types across Afghanistan while ensuring that the study findings are grounded in the community's experience. The following research methods were selected to allow a deeper insight into shelter practices across Afghanistan:

1) Secondary data review
2) IIs with homeowners
3) Shelter design interviews with shelter expert KIs
4) FGDs with homeowners

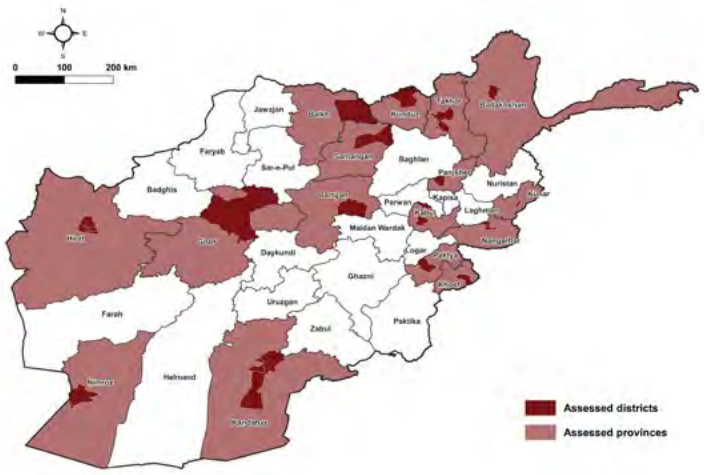
Secondary Data Review

To begin the study, from 1st – 15th October 2020, a review of existing literature was conducted. This focused on the different shelter types in Afghanistan, which regions they were present in, and their local building practices. A table indicating this information was created and used by field staff for validating whether these shelter types were still present, and can be found in Annex II. This review also assisted in identifying the appropriate methodology and design for the survey and FGD topic guide.

Three key sources informed this study:

- Albert Szabo and Thomas Jefferson Barfield, 1991. Afghanistan: An atlas of indigenous domestic architecture
- Oliver, P. ed., 1997. Encyclopaedia of vernacular architecture of the world (Vol. 3). Cambridge: Cambridge University Press
- The Encyclopædia Iranica

Map 1: Locations of primary data collection at district level



Sampling

The following seven primary types of shelters in Afghanistan were assessed, as identified by Szabo & Barfield (1991): caves, black tents, cotton tents, yurts, huts, curved roof permanent structures, and flat roof permanent structures. Using these sources, REACH devised a sampling frame of parent shelter types and the different shelter type variations of each, adopting the framework from Szabo and Barfield (1991). REACH then worked with its field teams to identify which districts shelter types from the secondary data review were still present in, and which were accessible for face-to-face data collection. The sampling frame was also updated with new shelter types identified by the field teams as well.

In total, REACH identified 26 shelter type variations, which were used as the unit of analysis for the KI and II tools. All KIs and homeowners were selected based on the presence of each shelter type variation in each region, which was based on the findings from the secondary data review in Annex II. After identifying the location, enumerators, led by a field engineer, would identify the shelter types and speak with their owners to conduct the IIs. A total of 9 IIs per shelter type variation per region were conducted to ensure data reliability and validity and the data was analysed as a proportion of all responses.

Table 1: Sampling Frame of Shelter Type for Data Collection

Shelter Types	# of Variations	East	South East	South	West	North	North East	Central
Black Tents	4	0	2	4	0	0	0	0
Cotton Tents	3	1	2	0	2	1	0	2
Yurts[6]	0	0	0	0	0	0	0	0
Huts	5	0	1	1	0	1	3	0
Cave	1	0	0	0	0	0	0	1
Curved roof Permanent	3	0	0	4[7]	1	2	0	1
Flat roof Permanent	10	7	6	3	4[7]	2	4	5
Total	26	8	11	12	7	6	7	9

6. Due to climatic conditions and nomadic movement, this shelter type could not be assessed.

7. Some shelter type variations were assessed more than once.

Due to the extensive workload involved in creating, formatting and processing design schematics, 1 shelter design interview was done per shelter type variation per region. These KIs were identified through conversation with community leaders, who identified shelter experts in their communities. In regions where a structure was only recorded as being present in one or two provinces, or security concerns prevented movement to certain provinces, additional IIs and shelter design KIIs were conducted from the same provinces to ensure robustness of results.

To ensure a limited number of FGDs, the parent shelter type was used as the unit of analysis. FGDs were arranged with local communities in which the shelter types were present, and homeowners of each shelter type were selected to participate. All discussions were disaggregated by gender. In total, one FGD was conducted per shelter type per gender per region.

In order to ensure a regionally diverse sample, REACH conducted a security assessment to identify which districts were safe to conduct fact to face data collection for each shelter type variation, while also ensuring that all shelter type variations identified in the sampling frame would be assessed. In total 21 districts in 16 provinces across all 7 regions were selected for assessment, ensuring a diverse coverage of indicative findings country-wide. The full table of these data collection locations is in Annex I.

Primary Data Collection

All primary data collection for this assessment was conducted in person between 1 – 30 November 2020. Verbal consent was obtained before participants took part in the research. Shelter types were assessed in-person. The shelter design KIIs included photography, drawing detailed architectural designs, while the FGDs and IIs were conducted with adult household members. Appropriate Personal Protective Equipment (PPE) was provided for in-person data collection and social distancing measures were adhered to in light of the COVID-19 pandemic.[8]

Regional field engineers were trained in Kabul between 18 – 20 October, and then returned to their field bases and trained the 88 enumerators, FGD facilitators and transcribers. Between 25 – 29 October, the field engineers trained staff in Central, South East, and East Regions. Between 1 – 5 November, engineers in North, West, North East, and South Regions trained the data collectors.

Table 2: Number of Interviews by Region

Region	Shelter Design Interviews	KIIs	FGDs
East	8	72	8
South East	11	99	8
South	13	117	8
West	9	81	10
North	6	54	10
North East	7	81	10
Central	9	81	8
Total	63	585	62

In total, 28 II Enumerators, 30 FGD Facilitators and 30 FGD transcribers for the FGDs were recruited for this assessment. All data for this assessment was collected in Dari or Pashto and translated into English by the respective transcriber or facilitator before being sent to the Assessment Officer for analysis.

PRIMARY DATA COLLECTION

The following primary data collection methods are described below in detail:

Focus Group Discussions (FGDs)

One facilitator and one transcriber were present at each FGD. Two semi-structured FGDs were conducted focusing on one of the seven shelter types per region with homeowners. FGDs were divided by gender. Each FGD lasted approximately one hour with 3-5 participants to allow for physical distancing. These discussions explored shelter building practices and resilience strategies and aimed to collected rich, detailed data which can provide context to the quantitative findings.

Table 3: Research Objective and Unit of Analysis per Method

Method	Focus Group Discussion	Individual Interviews	Shelter Design KIIs
# of Respondents	62 FGDs 3-5 people per FGD	585	63
Objective	Understand common shelter building practices and resilience strategies for shelter construction and repair	Identify common materials & techniques used and preferred for shelter construction and repair	Document design schematics, bills of quantities, and photos of each shelter type variation
Unit of Analysis	1 of 7 shelter types	Each shelter type per region assessed x3	1 structure per region
Sample Size	2 per shelter type per region 1 per gender	9 Is per shelter type per region	Design schematics: 1 KI per shelter type per region

8. REACH, SOPs for Data Collection during COVID-19,May 2018.

Shelter Design KIIs

A total of 63 shelter design interviews were conducted. One interview was conducted with one KI for each shelter type variation in each region. These structured interviews took approximately 90 minutes. Enumerators collected information on architectural designs, bills of quantity and design choices with pen and paper. This information was transcribed by the field teams into Computer Aided Design (CAD) designs, tabular Excel-based BOQs, and a catalogue of photos of each shelter type variation.

Individual Interviews (IIs) with Homeowners

A total of 585 structured interviews were conducted with homeowners to understand what materials and techniques were used and preferred during construction for their own shelter situations. Each interview took approximately 30 minutes and were conducted using a smart-phone based kobo tool. These interviews offered an insight into plot arrangement and the environmental and security conditions of the shelters that the communities live in. The interviews focused specifically on the choice and availability of materials, skills required, construction and repair techniques, plot locations, and if the shelter was the most preferred option and why. To ensure data validity and reliability, 9 IIs were conducted per shelter type variation per region and the median response was taken as the final response for each shelter type in the province. This quantitative data was used to provide breadth and complement the qualitative data collected in the FGDs.

Table 4: Software Used for Analysis

Method	Software
KIIs	R[9]
SD Interviews	R[9]
Shelter Designs & BOQ	AutoCAD[10] & Microsoft Excel
FGDs	NVivo 64[11]

Data Analysis

Data analysis took place between 2 December - 31 January. The quantitative data was cleaned from 1 - 21 December and FGDs were transcribed 1 - 23 December by the REACH data team. All design schematics and BoQs were drawn in CAD and entered into excel from 1 – 21 December by each region's field engineer. The designs and photos were checked by an engineering team in Kabul. The Assessment Officer coded the FGDs using NVivo and entered the data into a saturation grid from 17 – 30 January.

Limitations: Research Methods and Design

- While the data is very comprehensive, and REACH made sure to have as geographically diverse a sample as possible, the data is not representative. It should only be considered indicative of particular shelter types or shelter type variations in specific regions.
- Collecting data in November meant that some shelter types (particularly mobile shelters) had been moved or taken down for the winter season. As a result, no yurts, and several hut and tent shelter variations could not be assessed, or did not include the same geographic diversity as planned.
- Poor weather in the North East region of the country led to a number of flight cancellations, forcing the cancellation of a planned shelter design assessment in Kunduz, lowering the total shelter design KIIs to 63.
- Insecurity throughout the country limited data collection to relatively safe districts. Although the data is indicative of the overall country situation, it should also be taken into account that the views of populations living in hard to reach or otherwise highly inaccessible districts are not included.
- FGD facilitators often did not probe deeply on social or cultural meanings of specific responses, sometimes limiting the understanding of the particular contexts in which certain FGD responses were relevant.
- The transcription used for the FGDs by transcribers were summaries of the discussions, and did not include direct quotes. As a result, qualitative findings should not be taken as the exact statements from FGD participants.

Interior of jat cotton tent shelter type variation, Aybak District, Samangan Province. Originally named after the Jat people, who used modified prefabricated tents from Pakistan, the shelter type now refers to any home-made tent in Afghanistan. Photo credit: REACH Initiative, November 2020.

9. R is a programming language and software environment for statistical computing and graphics

10. AutoCAD is a computer-aided design and drafting software application

11. NVivo is a qualitative data analysis computer software package

FINDINGS

Above: Baluch black tent shelter type variation, Kandahar District, Kandahar Province. Photo credit: REACH Initiative, November 2020.

Below: Herati cotton tent shelter type variation, Injil District, Herat Province. Photo credit: REACH Initiative, November 2020.

SHELTER CONSTRUCTION

Construction Responsibility

80% of interviewed homeowners reported that they constructed their shelter themselves

This proportion was slightly lower for homeowners with permanent curved or flat roof shelters, who reported needing additional financial and labour support, particularly from people with special skills for construction.

Construction Skills

% of interviewed homeowners reporting that the following shelter types required people with special skills to help construct them:[1]

Cave	100%
Curved Roof	100%
Hut	96%
Flat Roof	88%
Black Tent	76%
Cotton Tent	42%

% of interviewed homeowners reporting that special construction skills were required, by entity who provided the required skill:[1]

Member of the village or community	70%
Friend or family member	57%
A local business in the village	13%
A business in the province centre	13%
Sourced from outside the province	2%
A business in the district centre	4%
NGO support	1%

- IIs with permanent shelter and hut owners noted that special skills were more likely to be needed to construct their shelters. These skills were usually provided by another member of the village or community, or a family member or friend. Despite the close relation, homeowners still needed to provide money and resources for construction.
- Many FGD participants reported experiencing a lack of money and resources, which prevented them from constructing new shelters beyond those they already had, and that unless their economic situation changed, they could not afford to maintain another shelter type. As a result, few FGD participants reported having a particular shelter preference, as they would not be able to afford it anyway.
- Some FGD participants in black tents noted that their tents were a part of their migratory livelihoods and culture, which required them to be mobile, such as herding cattle. They were concerned that if they moved to a permanent house, they would lose their livelihood. These participants also noted that these tents required less money for repairs, and could be taken with them if they needed to flee.
- Many participants living in tents, particularly cotton tents in urban areas, explained they could not afford rent for permanent shelters.

Brick or pakhsa (rural) flat roof shelter type variation, Behsud District, Nangarhar Province. Photo credit: REACH Initiative, November 2020.

Reason for Shelter Choice

- Many participants reported preferring whatever shelter types they could afford, which was often determined by what materials could be acquired for free, either through foraging, home production, or inheriting materials and building practices for their shelters
- FGD participants living in tents reported preferring tents to permanent brick shelters. Many FGD participants highlighted structural poverty and livelihoods constraints that prevented them from changing shelters. Permanent shelters were often associated with homeowners with means or were inherited, while those in tents often could not afford a permanent shelter due to a lack of resources.
- The high cost of materials was a decisive factor in all FGDs in determining shelter choice. Many FGD participants were widows, unemployed, disabled or returnees and had no stable income. They constructed their shelter with whatever materials they could salvage for free, which were often substandard and poor.
- For those who had the financial means to choose their shelter type, most preferred flat roof permanent shelters and based their decisions on the shelter's ability to withstand extreme weather (e.g. rain, wind, dust and snow) and to stay cool in the summer.
- Nomadic FGD participants living in mobile shelters highlighted the importance of moving the shelter in times of crisis or hazardous weather as the reason for preferring a mobile shelter.
- Participants living in permanent shelters explained that their shelters protected them from harassment and provided privacy that others could not. This included the presence of women's only spaces.

1. Respondents could select multiple options.

Shelter Preference

- FGD participants preferred the tents provided by UNHCR and NGOs because they were reportedly larger and the plastic material protected them from the rain and snow. Participants preferred mobile shelters due to the conflict, evictions, and hazardous weather.
- Many FGD participants who preferred permanent shelters preferred them to be made of **stronger materials like steel and fired brick** to protect families from threats including thieves, animals, and hazardous weather, and associated these materials with safety and stability.
- If participants owned their land, they usually preferred **flat roof shelters** as the preferred shelter, highlighting the importance of land in providing social and economic stability. If they did not own their land, most FGD participants preferred mobile shelters that could be moved in case of eviction.
- Cotton tents were reported by FGD participants to be most commonly used by IDPs in urban settings. These participants preferred to have permanent shelters, and were only living in a tent because they couldn't afford a permanent shelter.
- Many FGD participants reported that they were hosting family members who were displaced. For this reason they preferred larger shelters than they presently had to prevent inter-household conflicts.
- Most displaced FGD participants were not willing to return to their place of origin. One participant explained that they felt safe from conflict and supported by the host community.
- FGD participants living in **flat roof permanent** shelters chose these shelter types as they were warmer than the other shelter types they could afford. However, both II and FGD participants noted that these shelters require extensive maintenance, including thatching roofs and reinforcing the ceiling with plastic and iron sheeting, to prevent the ceiling from collapsing from the moisture damage caused by rain and snow. This often required skills that homeowners' household members did not have, and could often be expensive.

Permanent Flat Roof Shelter Preference

82% of interviewed homeowners reported that, regardless of shelter type, they preferred a flat roof permanent shelter type

The main reason that they did not construct this shelter type was a lack of money to afford the materials for construction and the associated skills required to construct the shelter.

Lacheq hut shelter type variation, Khulm District, Balkh Province. Shelters like this are typically used in the summer months, and then abandoned for permanent shelters in the winter. Photo credit: REACH Initiative, November 2020.

According to interviewed homeowners, permanent flat roof shelters were preferred for the following reasons:[1]

1	It is safer/more secure	97%
2	It lasts longer	85%
3	It protects against the climate better	72%

Permanent flat roof shelters were preferred for the following reason:

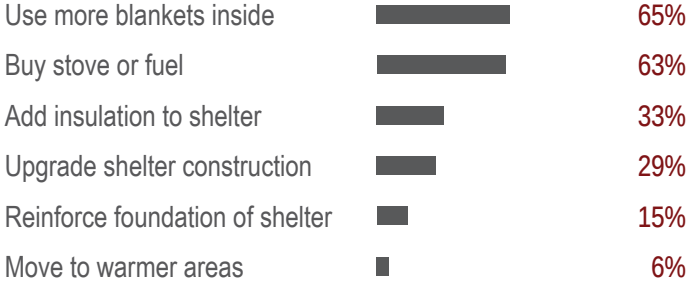
- Most FGD participants identified **flat roof shelters** as their preferred shelter choice. This was both because of the social and environmental protection that they provided, and how common they were across the country. Participants noted that it was easy to find construction and repair materials in markets, as well as to find the skilled labour needed to construct them.
- Several FGD participants noted that curved roof structures were more durable and offered better security and protection from the elements than flat roof shelters. However, these shelters were too expensive both due to materials and the specialized skills required to construct them. As a result, they preferred cheaper and easier to construct flat roof shelters, suggesting that flat roof shelters constituted something of a balance between a robust and cost-effective structure.

1. Respondents could select multiple options.

WINTERIZATION AND COMFORT

Methods of Winterization

% of interviewed homeowners reported using the following preparations to prepare their shelters for winter:[1]



- Most interviewed homeowners reported **either using more individual insulation, like blankets, or buying fuel to prepare for the winter;** improvements to the shelter were likely more effective in improving insulation and resilience to the elements, but were less likely reported, probably due to their overall cost.
- A majority of FGD participants noted challenges in keeping warm in the winter. People often relied on **scavenging materials for fuel** and trying to **reinforce walls with mud insulation** to keep warm.
- Many participants reporting having **no clear coping mechanisms for winterization,** and reported praying for safer shelters, and protection from hazardous weather.
- FGD participants reported that parents often relied on their children to support in winter preparations. It was commonly reported that children worked in neighbour's houses in exchange for old cloths and tarpaulin to burn. Other FGD participants noted that in urban environments, **children often collect garbage in the streets to burn for fuel.**
- Many FGD participants noted that poor people did not have the resources to prepare ahead of time for summer or winter, and were constantly struggling to find food and deal with their immediate needs, which prevented any kind of preparations for winter. Other FGD participants noted that they **did no winterization due to a lack of money.**
- FGD participants that were able to save for winter noted that **as much as a third of their income was needed** in order to purchase fuel to heat their homes in winter.
- IIs with hut, black tent, and cotton tent homeowners showed that **additional blankets were more likely to be used,** either by occupants or to make a thicker wall.
- Permanent shelter owners were more likely to report improving the shelter and buying fuel as a winterization method. This was less common for curved roof owners, likely because curved roof shelters were often constructed to be better insulated to begin with, and therefore needed fewer upgrades.
- Regardless of shelter type, most interviewed homeowners reported **needing additional stoves and fuel** to survive the winter.

Winterization by Shelter Type

Shelter Type	Primary Winterization Measures Reported by Respondents, by Shelter Type[1]		
Black Tent	Blankets	67%	• Insulation of tent with additional blankets and clothes. • Heat the shelter at night using a Sandali and burning animal dung. • Migrate to provinces close to Pakistan border annually; many FGD participants noted that many homeowners migrate as their shelters and animals are not suited for the cold weather.
	Upgrading Shelter Construction	63%	
Cotton Tent	Blankets	73%	• Heat the shelter at night using a Sandali.* • Increase insulation of tent with blankets, and use additional blankets at night. • Collect garbage for fuel. • Migrate to nearby, warmer provinces on an annual basis.
	Buying Stove & Fuel	57%	
Curved Roof	Buying Stove & Fuel	49%	• Thicken walls with mud and insulate with plastic sheeting. • Burn fuel to keep the shelter warm at night. Most homeowners prefer wood; those without money burn coal, which was reported by FGD participants to cause asphyxiation due to the smoke created.
	Upgrading Shelter Construction	47%	
Flat Roof	Buying Stove & Fuel	69%	• Bukharis† are used to burn fuel at night. • Cover door with a cotton blanket for insulation. • Build a plastic room green house inside the house for warmth. • Purchase fuel; this sometimes required going into debt or borrowing from family members. • Move into one room for body heat and to prevent the spread of cold air.
	Blankets	68%	
Hut	Blankets	74%	• Use insulating materials like felt as exterior insulation material; this was reported to be warmer than other materials. • Participants in rural areas reported having more access to wood for fuel and wool for insulation, which could be foraged and did not need to be purchased from markets.
	Buying Stove & Fuel	64%	

1. Respondents could select multiple options.
* Similar system to 'Kotatsu' in Japan and 'Korsi' in Iran.
† Bukhari is a traditional space heater

REPAIR AND MAINTENANCE

Shelter Repair Ability

% of interviewed homeowners reporting that they would be able to repair their shelter if it was damaged, by shelter type:

% of interviewed homeowners reporting that special skills were needed to repair the shelter if damaged, by shelter type:

% of interviewed homeowners reporting the main reasons they would be unable to repair their shelter if it was damaged:[1]

Requires special skills the household does not have	78%
No money to repair the shelter	69%
The materials are difficult to find	29%
If the shelter is damaged it is no longer safe to live in	25%

- While most interviewed homeowners reported that they would be able to repair their shelter if it was damaged, similar to construction, this was much lower for curved roof and flat roof shelter owners. Special skills, particularly regarding roof repair, were reported to likely be required to repair both permanent shelter types.
- Although homeowners reported that huts required special skills to repair, these skills were likely to not be needed to repair the hut. This is likely because the main skill needed was weaving, which is commonly found in Afghan communities.
- Although tent homeowners reported that repairing tents would likely require special skills, particularly for roof construction and the design of the shelter, the relatively simple design meant that homeowners were more likely to be able to repair their shelters themselves.
- FGD participants explained they were unable to repair shelters in the winter due to the hazardous weather. Instead, many reported moving in with relatives until they could repair their shelters in the summer.
- FGD participants noted that the materials needed to repair damaged shelters were usually substandard materials, which often deteriorated easily due to the materials' quality. A homeowner could not often afford to buy the materials or construction skills needed for a complete shelter repair.
- FGD participants living in cheaper shelters like huts and tents reported that they were able to buy cheaper materials from the bazaar for repairs. However, it was also noted that these shelters also needed to be repaired many times a year.
- Cotton tents were reported by FGD participants to often be used until they fell apart. Homeowners would weave the damaged sections together over and over again. If the shelter was completely destroyed, they would be unable to buy a new tent.
- Many FGD participants in permanent shelters noted that the price of repair materials has increased, over time, making them less affordable. They explained they would likely go into debt over repairs or offer food to family members in exchange for support in repairing their shelters.
- Nearly all FGD participants in permanent shelters noted that damage that went unrepaired would only get worse. Often, eroding walls would leave space for mice & insects to enter the shelter causing both illness and further damage to the walls.
- Nearly all FGDs noted that the main challenge to repairing shelters was the lack of access to quality shelter materials, and a lack of money to afford even sub-standard materials for repair. Shelter repairs often had to be delayed due to the need to pay for other necessities, most notably food forcing poorer homeowners to choose between their shelters and other necessities.

Table 5: % of interviewed homeowners reporting that special skills are needed to repair shelter if damaged, by shelter type:[1 2]

Special skills	Black Tent	Cave	Cotton Tent	Curved Roof	Flat Roof	Hut
Design of shelter repair	71%	75%	82%	63%	77%	56%
Weaving chegh/buria/thatching	21%	0%	6%	14%	35%	78%
Construction of shelter foundation/walls/frame	46%	63%	41%	31%	57%	7%
Making mortar, pakhsa, or bricks	32%	13%	6%	18%	47%	4%
Roof construction	54%	63%	59%	96%	77%	40%
Finding shelter materials	36%	13%	24%	12%	17%	24%

1. Respondents could select multiple options.
2. Special skills: Skills for constructing shelters that not every household would normally have, and for whom a shelter specialist, either in the community or a business, would need to perform. Respondents could select multiple options.

HAZARD RESISTANCE

Hazard Frequency

92% of interviewed homeowners reported that natural hazards were common in their area

% of interviewed homeowners reporting the most common hazards:[1]

Sandstorm	61%
Flooding	59%
Earthquake	37%
Blizzard	36%
Landslide	8%

Seasonal challenges reported across shelter types in Afghanistan:

Spring	Rain causes the roof to collapse
Summer	Dust causes illness
Winter	Snow causes illness

Natural hazards were reported by homeowners to be highly frequent across Afghansitan. However, the type and seasonality of different varied considerably by region.

Jugi cotton tent shelter type variation, Jalalabad District, Nangarhar Province. The tent is named after the Jugi, a nomadic people who used this unique style of tent. Photo credit: REACH Initiative, November 2020.

Hazard Mitigation

- Participants in FGDs often preferred brick shelters as they don't require as much maintenance to resist environmental hazards as other materials like pakhsa.
- Participants who lived in curved roof and flat roof shelter types preferred mud walls and large windows to allow for ventilation in the summer heat. Despite their thick walls, the sun-dried mud brick construction of curved roof shelters was reported to do a better job at keeping occupants cool in the summer and warm in the winter than other shelter types.
- A primary theme in the coping strategies participants used for hazards was to work with nature, particularly among those who were living in mobile shelters, including cotton tens. FGD participants reported building shelters into mountains or on flat lands to avoid damage from natural hazards. Homeowners of mobile shelters also reported migrating to warmer climates, using the breeze to cool their shelter and rotating the shelter to face different directions based on the positions of the sun and wind in different seasons.
- Permanent shelters tended to be built to better resist natural hazards, but were still constructed in locations where the damage from natural hazards would not be as strong.
- IIs with homeowners showed that permanent shelters tended to include hazard mitigation as part of the shelter construction, including both the design of the shelter and the use of materials. This was particularly true for curved roof shelters, which were reported to be built to be more resilient to natural hazards.
- Tent owners were more likely to report mitigating hazards by reinforcing the existing structure or trying to locate the shelter is less disaster-prone areas. Tent owners also reported designing their shelters and using disaster-resistant materials to mitigate damage to shelters as well.
- Cave homeowners reported not making any major modifications to their shelters, or trusting the design of the overall shelter to protect them.

% of interviewed homeowners reporting their most common hazard mitigation methods, by shelter type:[1]

Hazard Mitigation	Black Tent	Cave	Cotton Tent	Curved Roof	Flat Roof	Hut
Design shelter to resist disasters	57%	50%	41%	76%	60%	61%
Reinforce foundation of shelter	61%	0%	1%	23%	25%	13%
Move shelter to less disaster-prone areas	23%	0%	37%	9%	23%	33%
Use disaster-resistant shelter materials	54%	0%	26%	41%	37%	52%
Dig drainage ditches	0%	0%	6%	0%	0%	0%
No preparation is done	2%	50%	32%	11%	18%	2%
Other	0%	0%	2%	0%	0%	0%

1. Respondents could select multiple options.

Damage Resistance from Hazards

These practices of strengthening shelters were described by participants in FGDs.

Reported techniques to strengthen shelter infrastructure and prevent damage from hazards[3]

Hazard	Techniques
Earthquake	• FGD participants living in permanent shelters made from clay, mud and pakhsa noted that their shelters could not withstand wind and earthquakes, and were easily destroyed in earthquakes. • When building the shelter, FGD participants living in permanent shelters noted that they often constructed thicker walls, and used very thick wooden beams in the roofing. • Corner braces were reported to be used in the construction of permanent shelters to improve the shelter's overall resilience against earthquakes. • FGD participants living in tents reported digging the tent's pillars deep into the soil to increase stability. It was also noted that tents are easy to reset if the shelter collapses.
Blizzard	• FGD participants living in permanent shelters built with mud use thatching in the roof to prevent the mud cracking from snow build up. • A common method for improving insulation in permanent shelters reported by FGD participants was to cover the shelter with kaghil*, which helped trap heat in. • Interviewed homeowners reported that flammable materials were collected throughout the year to be burned during the winter. • FGD participants reported they regularly remove snow from the roof before it can build up and cause damage to the shelters, and also add salt to the roof hourly to prevent build up.
Sandstorm	• FGD participants living in tents build a meter high wall from stone around the tent to protect it from wind blown particles. • Many FGD participants noted the importance of growing vegetation to protect their shelter from the wind.
Flooding	• All FGD participants highlighted that living on flat land was crucial to prevent damage caused by flooding. • FGD participants who lived in tents reported digging walls around their tent to prevent flooding. • Many FGD participants dug canals to redirected water away from their shelter to prevent flooding. • FGD participants who lived in a curved roof shelter type reported adding a kaghil to the shelter's foundation and walls to make the shelter more resistant to heavy rain. • During construction, FGD participants detailed digging the foundation at least 50cm into the ground to stabilize the shelter.

Preferred Location

- There was consensus across FGDs that **flat land was the most favorable** for plot location. This was mainly to avoid damage from natural hazards, including landslides, avalanches and flooding.
- Community support was noted to be very important for identifying the right locations for shelters. Participants explained that their **neighbours were often the first responders after a disaster,** and that when a sudden disaster, such as earthquakes or flooding, occur it can take aid organisations as much as a week to deliver support.

Vegetation

- FGD participants noted that growing vegetation, such as trees and bushes, was a common strategy to strengthen the land the shelter was built on and protect the shelter occupants from natural hazards, as well as the elements more generally.
- FGD participants who did not own their own land often reported that the landowner would not allow for vegetation to be grown.
- Growing vegetation was not realistic for many FGD participants as they could not commit to caring for it. Tent dwellers, many of whom were displaced, noted that at any moment they may have to leave the area due to weather, security or eviction from the land, and that there often wasn't enough space to plant vegetation. Many FGD participants noted that their areas did **not have sufficient water** supply for growing crops.
- Cutting trees down was considered by most FGD participants to be bad for the environment, because they provide protection from the elements and pollution. However, participants also noted that due to a lack of resources, they often had no choice but to cut down the few available trees in order to survive, particularly to get fuel during the winter.
- In some locations, participants reported trees to be a critical part of both the natural and social ecosystem, including growing trees to provide food, fuel, shelter construction materials and food for livestock.

3. Techniques described by participants in focus group discussions.

* Mud and straw mix

Land Type

% of interviewed homeowners reported constructing their shelters on the following land types:

69% Field or flat land	6% Top of hill
19% Hillside or slope	6% Next to river in valley

% of interviewed homeowners reporting the reasons for choosing their plot of land:[1]

Only land available	66%
Protected from rain or wind	30%
Resistant to hazards	27%
Inherited	26%
Near to market	4%
Cheapest land available	0%

- Most interviewed homeowners reported constructing their shelters on a field or flat land; a large minority also constructed shelters on hillsides or slopes; however, the top of a hill or in valleys was rare. This was primarily done to mitigate the risk of damage from natural hazards like flooding or earthquakes.
- Most homeowners constructed their shelters on the **only land available.** Secondary factors were all related to hazard mitigation.

Sharing Plots

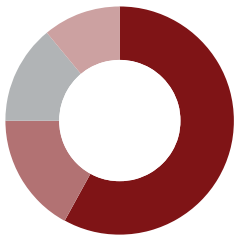
- Many FGD participants reported that they did not share their plots with other families as **conflicts would occur**.
- Plot sharing was almost always linked to displacement; many FGD participants explained that they would only **share their plot if the family was displaced** and had nowhere else to stay. Many FGD participants, including those living in tents, reported sharing their plot with family members at that time.
- FGD participants explained that it is not deemed acceptable for females to share a plot with men they are not related to. For this reason, people **primarily share plots with their relatives.**
- Some FGD participants noted that they would **host their neighbors as guests** for a few nights if there was a social event; many compounds were constructed with an extra guest house for visitors.
- Most FGD participants across all shelter types explained they kept their shelters **close to one another for security** as their shelters often don't have any security measures in place and are exposed to threats. This positioning acts as a community watch and allows households to look out for one another. Closer shelters also protected from wind and helped to increase warmth in the area. Only a small number of participants commented on preferred distance between shelters; all those who did suggested a space of approximately 3 meters between shelters as ideal.
- A small number of FGD participants living in cotton and black tents said that they built their shelters away from others. They explained they needed to **keep a low profile to prevent being evicted.**

Plot Preference

% of interviewed homeowners reporting the types of other buildings that are located on the shelter's plot of land:[1]

Toilet/Latrine	84%
Kitchen	69%
Water Source	43%
Guest House	39%
Animal Housing	36%
Separate Shelter for Women/Men	30%
Storage Building	21%
Separate Shelter for Adults/Children	9%
None	1%

% of interviewed homeowners reporting how close shelters are built to one other plots of land:



58%	Next to other plots
17%	Connected to other shelters on the same plot
14%	Between plots of land
11%	Far away from other plots

- Nearly all homeowners interviewed reported a compound-like set up for their shelters with additional buildings for specific purposes. The most common buildings were **toilets/latrines, kitchens, and water sources.**
- Most homeowners constructed their shelters in **plots next to one another;** this increased the overall security of the household.
- Many FGD participants clarified that it often wasn't possible to invest in a permanent shelter unless they owned the land, as they could be **forced to flee or be evicted at any time.** This highlights the importance of land ownership in having a safe, permanent shelter. Most participants would otherwise prefer their own land and permanent shelter if they could afford it.
- Livelihood access was also reported to be a key component for plot location; farmers explained that a permanent plot **needed to be suitable for their livestock** throughout the year to be used for inhabitation.
- Plots were preferred if they were **closer to services and economic opportunities;** these most important were noted as the following:
  - Water for drinking
  - Vegetation to mitigate natural hazards
  - Close to schools, employment opportunities and hospitals
- Separate kitchens were important to many FGDs as they **prevented smoke inhalation.**

1. Respondents could select multiple options.

PLOT ARRANGEMENT

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to Wind	68%
Exposed to Cold & Blizzards	56%
Prone to Flooding	51%
Exposed to Sun & Drought	30%
Earthquakes are Common	30%
None	4%

- Environmental concerns over the plot of land from homeowners tended to reflect the common hazards in their region. **Wind, cold/ blizzards, and flooding** were most commonly reported.

Environmental Safety

- FGD participants reported that children are often sent by their parents to salvage waste (mainly plastic) for fuel or shelter construction. Most participants were aware that the burning of this waste caused toxic fumes, but did not have the resources to buy less hazardous materials.
- FGD participants repeatedly noted their lack of resources for winterization. Due to their lack of money, they reported mainly gathering heating materials from the surrounding environment, such as salvaging wood from trees. Participants noted that they were **trading short term benefits in heat for long term livelihood losses** due to deforestation, as well as increased risks of disasters like flooding, but did not see any other alternative.
- The concerns over deforestation were heightened by the need for trees for shelter construction, which many FGD participants could not afford to buy from the market.
- Many FGD participants noted the issue of insect infestations that eat wood, which could destroy shelters in the summer. Some FGD participants used stones and clay during construction to prevent pests.
- FGD participants agreed that the poverty they are experiencing is the root cause of their social and environmental concerns. The lack of livelihood opportunities left homeowners without enough money to buy basic goods from markets. Almost everyone interviewed reported being reliant on markets for goods. There was a belief that if there were more employment opportunities, participants could buy land, stronger materials, and have a safe home for their family. This would prevent environmental degradation and improve their community's safety.
- FGD participants noted that digging mud from the ground to build shelters created potholes. Many communities were reported to use

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Lack of access to services	48%
Poor economy	47%
High crime	33%
No concerns	29%
Conflict	12%

- Social concerns tended to be fairly consistent countrywide, regardless of the region; lack of access to services and markets **were highest, followed by criminality or conflict.** A sizable minority reported no concerns at all.

Social Safety

- Most FGD participants interpreted the concept of safety to mean 'economic security'. This meant having a stable income for basic resources in the immediate and foreseeable future. When asked whether they felt safe, participants noted that as long as they are living in poverty, they do not feel safe.
- Safety was defined as the following:
  - Safety as land ownership
  - Safety as economic security
  - Safety as protection from wildlife
  - Safety as the community you live in respects you
  - Safety as protection from humidity
- Most FGD participants described feeling unsafe from the social abuse they were subject to in their communities. This was often verbal harassment, which was often prompted by a societal prejudice against impoverished households. Participants linked their poverty to a lack of social respect and dignity; living in a permanent shelters was often linked to social respect and credibility, that also protected households from the aforementioned abuse.
- FGD participants attributed the many security threats they faced to a lack of permanent shelters. These included the threat of theft from people addicted to drugs, as well as concerns about kidnapping. These concerns were worse for tent dwellers, who often lacked basic security features such as doors or locks.

Brahui black tent shelter type variation, Kandahar District, Kandahar Province. The Brahui are a nomadic minority group in southern Afghanistan. Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.

MATERIALS USED

The following section details the prevalence and use of different types of materials in the construction of shelters in Afghanistan. It is divided into two sections: First, the regional prevalence of shelter materials, where they are acquired, and the reasons for their usage reported in interviews and FGDs with homeowners is shown. Second, FGD responses detailing building practices, material preferences, the use of materials, and seasonal variations are explored. As most homeowners reported using whatever materials were available to construct their homes, the usage of materials can give an indication of how difficult they were to obtain.

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Fabric	Tarpaulin / Plastic Sheet	86%	93%	94%	44%	96%	61%	82%	94%
	Canvas / Cotton Cloth	47%	59%	45%	0%	18%	81%	63%	48%
	Felt Mat	16%	0%	1%	57%	23%	28%	20%	17%
	Goat Hair (Palas)	15%	0%	4%	7%	36%	33%	18%	6%

53% of interviewed homeowners used fabric

Reported method of aquisition[1]

Purchased in market	92%
Inherited from family	36%
Collected in nature	20%
Specially imported	12%
Other	0%

Reported reasons why materials were used[1]

Safety/Security	74%
It is part of our culture	61%
Protects against climate	55%
It requires less repairs/maintenance	51%
It lasts a longer time	50%
It is mobile	34%
It is less expensive	1%

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Wood	Wood Pole	65%	36%	78%	64%	90%	34%	75%	89%
	Wood Plank	53%	80%	27%	17%	89%	11%	63%	78%
	Wood Beam	48%	39%	67%	50%	32%	48%	75%	21%
	Bamboo Pole	22%	0%	37%	3%	1%	64%	2%	19%
	Tree trunk	19%	15%	0%	0%	20%	37%	0%	47%
	Wooden boughs	18%	7%	19%	28%	20%	34%	12%	6%
	Wood Lattice Frame	10%	12%	13%	0%	6%	6%	30%	0%
	Tent Pole	11%	9%	9%	14%	7%	10%	14%	14%
	Forked / T-bar pole	8%	0%	28%	11%	0%	1%	19%	3%
	Wood struts	3%	6%	0%	3%	9%	2%	4%	0%

87% of interviewed homeowners used wood

Material Type[1]

Purchased in market	92%
Collected in nature	40%
Inherited from family	31%
Specially imported	4%
Other	0%

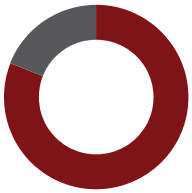
Reported reasons why materials were used[1]

Safety/Security	76%
It lasts a longer time	62%
It is part of our culture	56%
Protects against climate	54%
It requires less repairs/maintenance	45%
It is mobile	24%
It is less expensive	2 %

1. Respondents could select multiple options.

MATERIALS USED (CONTINUED)

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Masonry	Mud	72%	41%	81%	69%	89%	74%	84%	77%
	Packed mud (pakhsa)	55%	63%	26%	75%	53%	72%	46%	50%
	Kaghil	54%	63%	25%	47%	53%	32%	78%	84%
	Sun-Dried Bricks	49%	40%	41%	72%	60%	43%	48%	60%
	Stones	40%	51%	68%	39%	38%	9%	73%	17%
	Mud (mortar)	37%	41%	35%	0%	60%	26%	49%	44%
	Clay Mortar	19%	0%	26%	0%	0%	35%	51%	0%
	Cement	14%	28%	42%	11%	0%	1%	0%	17%
	Sand	14%	28%	42%	6%	0%	1%	0%	14%
	Concrete Blocks	12%	0%	53%	0%	0%	0%	53%	0%
	Gypsum mortar	6%	29%	3%	0%	0%	0%	3%	4%
	Fired Bricks	4%	13%	0%	6%	0%	1%	4%	1%



81% of interviewed homeowners used masonry

Material Type[1]

Collected in nature	78%
Purchased in market	58%
Inherited from family	20%
Specially imported	3%
Other	0%

Reported reasons why materials were used[1]

Safety/Security	71%
Protects against climate	71%
It lasts a longer time	58%
It is part of our culture	50%
It requires less repairs/maintenance	42%
Mobility	8%
It is less expensive	1%

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Reeds	Reed Mats (Buria)	39%	31%	2%	25%	99%	26%	14%	11%
	Straw	39%	0%	81%	0%	1%	3%	62%	100%
	Woven Reeds (Chegh)	38%	63%	40%	83%	39%	49%	24%	13%
	Tamarisk mats	22%	19%	9%	0%	25%	26%	43%	26%
	Reed Thatching	16%	6%	4%	0%	3%	41%	38%	24%
	Loose Reeds	12%	0%	0%	0%	15%	44%	0%	2%
	Bundled Reeds	8%	0%	0%	0%	17%	15%	5%	0%

43% of interviewed homeowners used reeds

Material Type[1]

Purchased in market	90%
Collected in nature	49%
Inherited from family	24%
Specially imported	3%
Other	0%

Reported reasons why materials were used[1]

Safety/Security	68%
Protects against climate	67%
It is part of our culture	62%
It lasts a longer time	60%
It requires less repairs/maintenance	51%
Mobility	17%
It is less expensive	1%

1. Respondents could select multiple options.

MATERIALS USED (CONTINUED)

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Rope	Guy Rope	73%	63%	48%	17%	83%	98%	68%	79%
	Twine/Cotton String	56%	47%	72%	10%	54%	57%	54%	62%
	Wool tension band (roof)	30%	0%	12%	90%	83%	15%	27%	15%
	Wool tension band (wall)	16%	0%	4%	60%	43%	2%	19%	9%

35% of interviewed homeowners used reeds

Material Type[1]

Purchased in market	92%
Inherited from family	30%
Collected in nature	21%
Specially imported	13%
Other	0%

Reported reasons why materials were used[1]

Safety/Security	82%
It lasts a longer time	64%
It is part of our culture	56%
It requires less repairs/maintenance	45%
Mobility	45%
Protects against climate	38%

Material Group	Material Type	Region							
		National	Central	East	North	North East	South	South East	West
Other Materials	Nails	67%	20%	63%	100%	100%	48%	71%	92%
	Rain Gutter (metal)	54%	40%	77%	18%	0%	58%	50%	40%
	Glass (Window)	47%	50%	77%	50%	0%	32%	67%	17%
	Steel pins	43%	20%	55%	27%	11%	48%	47%	20%
	Tent stakes	30%	0%	20%	73%	67%	33%	40%	0%
	Steel Pole	30%	0%	20%	73%	67%	33%	40%	0%
	Steel I-beam	12%	20%	21%	9%	11%	4%	7%	16%
	Leather thongs	8%	0%	4%	0%	11%	19%	9%	0%
	CGI from Iron Sheets	5%	0%	15%	0%	0%	0%	0%	0%
	Corner Brace	3%	0%	2%	0%	44%	0%	2%	0%

36% of interviewed homeowners used 'other' materials

Material Type Examples[1]

Purchased in market	96%
Inherited from family	21%
Collected in nature	15%
Specially imported	10%
Other	0%

Reported reasons why materials were used[1]

Safety/Security	89%
It lasts a longer time	77%
It is part of our culture	53%
It requires less repairs/maintenance	48%
Protects against climate	36%
It is less expensive	0%

1. Respondents could select multiple options.

MATERIALS USED (CONTINUED)

Material Group	Reported prevalence	Reported method of acquisition	Reported reason why materials
Fabric	• Tarpaulin/plastic sheeting was the most commonly used material in most regions; the only exception was the South, where canvas/cotton cloth was more commonly used. • Felt was most common in the North, where it is used for huts and yurts.	• The vast majority of fabrics, primarily tarpaulin and canvas, were purchased in the market. • About a third of interviewed homeowners inherited their fabrics from their family, while another fifth obtained them from nature.	• The main reasons for using tarpaulin and canvas were its safety, security, durability, and the protection it offered compared to more traditional, homemade fabrics.
Wood	• Wood poles and planks were used throughout the country for many different shelter types. They were less common in the South, where smaller wooden boughs and bamboo poles were more common. • Larger wood beams were more common in the East and South East, where lumber is more available.	• Nearly all interviewed homeowners had obtained wood from markets. This is likely due to the lack of adequate forests outside of the East and South East regions. • Collecting in nature and inheritance were also common, likely due to wood's cost, and its plentifulness in certain regions.	• Wood poles and planks were typically used because they were strong frame materials, which offered protection, lasted a long time and didn't require much maintenance.
Masonry	• Pakhsa and mud were common materials for construction in all regions, likely due to the ubiquity of the flat roof shelter • Stones were very common in the East, South East, and Central regions, but not common anywhere else, suggesting their use in construction to be localized.	• Most masonry was collected in nature, either through digging of mud, collection of bricks, or mining of stone. • Most remaining masonry was purchased in the market. These were usually fired bricks or specialty materials, such as the roof bricks for curved roof shelters.	• Particular masonry choices were most commonly made for safety/security protection against climate, or durability reasons. This sometimes lead homeowners to purchase different items based on their preferences; fired bricks were stronger, while sun-dried bricks provided better insulation.
Reeds	• The use of reeds for shelter construction has fallen due to the introduction of plastic sheeting by humanitarian organisations. • Buria and chegh were still commonly used in the North, North East, and Central regions. In the East, South East and West, straw was still commonly used.	• Most interviewed homeowners purchased reeds in the market, although about half of homeowners using reeds reported that they had been collected in nature. • Despite the degradable nature of reeds, some homeowners reported that their reeds had been inherited.	• Homeowners were more divided about their use of reeds than other building materials. Similar proportions of homeowners reported that reeds both provided protection, and that also their use was a part of the local culture of shelter construction.
Rope	• Rope was the least used construction material. • The use of different types of rope was highly regionalised. Wool bands were common in the North and North East, while twine was common in the East and West. Traditional guy rope was most commonly used everywhere else.	• Nearly all rope used in construction was purchased in the market. • Inheritance of rope and collection in nature were also reported, but were far less common. • Rope was the material type most likely to have been imported from abroad.	• The type of rope selections was mainly based on the safety and security and durability of the item. However, the regionalised usage of different types of rope suggests a preference based on shelter type and tradition, as well.
Other Materials	• Most other materials used in construction were metal, a recent introduction to shelters in Afghanistan. • Steel beams for roofing was uncommon in the Central and East regions, and barely used elsewhere. • Corner braces were most commonly used in the North East.	• Most other materials were reported to have been purchased in markets. A small minority was inherited from family, scavenged, or specially imported.	• Most other materials were reported to have been used because of the safety and security they provided, and their durability. These newer materials provided ways to strengthen old designs, largely by replacing wood in regions where it was scare or expensive.

CONTEXT OF MATERIAL USE

The following practices regarding materials, choice, and methods of use for construction and repairs were described by participants in FGDs that took place across Afghanistan:

Reasons for use	• FGD participants in temporary shelters such as black tents, cotton tents and huts reported migrating every year as a winterization coping strategy. Lightweight materials like wood were used to make the shelters easier to transport. • Interviewed households and FGD participants reported constructing the same shelter design with the same materials over generations. These shelters were designed by their ancestors to suit the climate and their livelihoods. • This study found the materials to be almost the same as those used in previous studies conducted in the 1970s (Szabo and Barfield 1991), except for an increased use in plastic over woven reeds and the increased use of metal. When asked why they chose the materials, FGD participants explained that these are the materials used to build this shelter type, and the designs had not changed.
Preferences	• FGD participants reported that a lack of economic opportunities and structural poverty prevented most homeowners from building safer shelters that they would prefer to live in, and the materials they chose tended to be the only ones that they could afford. • Most decisions on materials were driven by a lack of money and resources. When they are forced to choose between spending their money on preferred materials to improve their shelters and being able to buy food in the market, they will purchase food.
Sources	• IIs and FGDs found that many key shelter materials were obtained without cost, either being inherited, foraged from in nature, salvaged from garbage, were homemade, or were borrowed or gifted. Very few interviewed homeowners or FGD participants reported that humanitarian assistance played a role in providing shelter materials. • Most FGD participants who migrated from rural to urban environments noted that it was harder to make repairs or construct shelters due to the cost of items in the market, which in rural areas could be found in nature. In rural areas, most materials could be collected or foraged, such as wool for keeping water cool in the summer and insulating their shelters in winter, collecting wood, reeds and animal dung for fuel in the winter. • FGD participants made clear that the inability to afford shelter materials was one of many broader challenges that IDPs and migrants from rural areas faced in trying to meet their needs through markets where they had previously met them without cost through nature.
Drawbacks	• FGD participants from rural areas reported that they relied on cleaner materials made from animal products used by their ancestors. This was because they could forage these at no cost and they were more durable. For example, animal dung, when used for fuel is less of a pollutant than plastic or debris and wool is a better insulation for warmth than cotton or plastic sheet. These materials are available in rural areas and most participants living in urban areas were unable to access these. • While NGO tents were well liked, and FGD participants explained that they had worked well, wear and tear over time caused them to wear out and become unusable. • The need for additional materials which homeowners cannot afford has pushed many homeowners to strip the environment of trees and other key resources in order to meet present shelter needs.
Benefits	• FGD participants identified the benefit of recycling materials for their shelter construction and fuel. Yet, children were often sent by their parents to salvage this plastic, rope and carton, which were highly unclean materials. They were likely exposed to many security and sanitation risks in this time and may be missing education as a result. • The intergenerational re-use of materials, while driven mainly by poverty, reduced the overall level of environmental degradation.
Improvements	The following improvements were the most frequently raised in FGDs by participants: • Participants across all shelter types and regions explained that if their economic circumstances improved they could buy more durable materials that could protect people and their shelters from insects. • Planting more trees was reported to decrease desertification and the hazardous weather which was reported to destroy shelters.

REGIONAL PROFILES

Above: Gumbazi Curved Roof shelter type variation, Bamyan District, Bamyan Province. Photo credit: REACH Initiative, November 2020.

Below: Timber and Stone Walls Flat Roof shelter type variation, Matun District, Khost Province. Photo credit: REACH Initiative, November 2020.

REGION: CENTRAL

Hazard Frequency

80% of interviewed homeowners reported that natural hazards were common in their area

Of these homeowners, the most commonly reported disasters were:[1]

Blizzard	74%
Flooding	54%
Earthquake	49%
Sandstorm	46%
Landslide	19%

A wide variety of hazards were reported to be common in this region. **Concerns over blizzards, flooding, and earthquakes** tended to drive shelter decisions.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from roads or markets	37%
Exposed to criminals/crime	25%
Far from public services	17%
No social concerns	40%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to cold/blizzards	63%
Exposed to wind	48%
Prone to flooding	43%
Earthquakes are common	38%
Exposed to sun/drought	32%
Exposed to avalanche	3%
No environmental concerns	17%

- Social concerns were lower in the Central Region than in many other regions, and tended to balance a need to access roads and markets with protection from criminality.
- Reflecting the variety of environmental hazards, environmental concerns were spread across a wide range of issues, but primarily revolved around keeping the shelter protected from the cold and flooding.

Methods of Coping with Hazards

- FGD participants reported the prevention of landslides was not possible and they would often need to evacuate the shelter. They explained they carefully choose a location on hard ground before construction as digging into loose soil can causes landslides.
- Most FGD participants reported that mountains protected them from sandstorms or wind hazards.
- FGD participants in curved roof shelters considered its design to be more resistant to natural hazards than others. Designs in this region also included sand to strengthen cement in construction.

Methods of Winterization

- A samoch is a traditional type of cave built inside the mountain. All participants who lived in this shelter type reported that they were warm throughout the winter from ground heat.
- Small rooms made from glass or plastic were constructed in front of flat roof shelters to act as greenhouses that retained heat for warmth.
- In order to reduce problems from humidity, participants reported thatching their roofs.

Methods of Coping in the Summer

- FGD participants reported that tents and permanent shelters made of mud stayed cooler during summer months.
- FGD participants reported removing the added insulation placed on the shelter in the winter months for ventilation in the summer.

Samoch cave shelter type variation, Bamyan District, Bamyan Province.
Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.

REGION: EAST

Hazard Frequency

90% of interviewed homeowners reported that natural hazards were common in their area

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Earthquake	69%
Flooding	64%
Sandstorm	49%
Landslide	20%

Earthquakes and flooding were the most common hazards reported in the East Region. In this warmer region, sandstorms were also a reported concern.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from public services	51%
Far from roads or markets	47%
Exposed to criminals/crime	22%
No social concerns	51%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Prone to flooding	56%
Earthquakes are common	53%
Exposed to cold/blizzards	47%
Exposed to wind	46%
Exposed to sun/drought	32%
No environmental concerns	10%

- Social concerns were relatively low, though most interviewed homeowners were concerned about being too far from markets and public services.
- A wide variety of environmental concerns were reported, particularly more violent hazards including flooding and earthquakes. Cold and wind concerns were also common, but primarily in mountainous areas, such as Kunar Province, rather than the region as a whole. Homeowners in this region were most concerned with their homes being destroyed by natural hazards.

Methods of Coping with Hazards

- FGD participants who lived in flat roof houses on the side of valleys build walls using sand, cement and steel to protect from landslides.
- FGD participants noted that trees were used to protect from sandstorms and helped to protect their flat roof shelters.
- FGD participants relied heavily on community support to help mange hazards and repair their shelters when damaged.

Methods of Winterization

- FGD participants explained the process of 'Sandali', a method used for keeping warm across the country.[2] Charcoals are added to a pot and a table and blanket are placed on top. This offers a warm space for the family to eat and heats the shelter.
- The Eastern Region typically has milder winters than other parts of the country, making it easier to meet winter heating needs.
- FGD participants reported that heating shelters often strains a household's ability to meet other basic needs, including having enough food for the family. A participant summarized that poor people are often not thinking about how to keep warm or cool, they are only thinking about how they can get food for their children.

Methods of Coping in the Summer

- FGD participants reported making a canopy, called a 'Sapara', with a grass ceiling which their children sit under in the yard to keep cool during the day.
- FGD participants explained that they build their shelter to face the sunrise to avoid exposure to midday heat.

Timber Beams and Stone Walls Flat Roof shelter type variation, Asadabad District, Kunar Province. Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.
2. Similar system to 'Kotatsu' in Japan and 'Korsi' in Iran.

REGION: NORTH

Hazard Frequency

100% of interviewed homeowners reported that natural hazards were common in their area

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Flooding	81%
Sandstorm	68%
Blizzard	33%
Earthquake	29%

Flooding and sandstorms were the most common hazards in the North Region. The milder climate lowers the likelihood of blizzards.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from public services	43%
Far from roads or markets	41%
Exposed to criminals/crime	0%
No social concerns	43%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to wind	82%
Prone to flooding	74%
Exposed to cold/blizzards	35%
Earthquakes are common	19%
Exposed to sun/drought	9%

- As the North Region is historically less affected by conflict than many other regions, social concerns were mainly associated with being close enough to public services and markets to access them.
- Environmental concerns reported by homeowners closely reflected the most common natural hazards in the North Region; **exposure to wind and flooding were the greatest concerns** that most homeowners had when selecting a plot for their shelter.

Methods of Coping with Hazards

- FGD participants living in curved roof shelters explained that the design is more resistant to earthquakes.
- Plinths were commonly used as a method to prevent flood damage.

Methods of Coping in the Summer

- Some participants reported covering their doors and windows to prevent dust entering the shelter. Others reported opening the windows and doors for ventilation if the area isn't prone to dust storms.
- FGD participants in curved roof shelters constructed mud bricks into very thick walls that both keep heat in winter and repel it in summer.
- FGD participants who lived in tents explained they needed large windows to stay cool in the summer. The windows had 3 layers and were reportedly covered it with 'Namad'' to be comfortable in all seasons.

Methods of Winterization

- Participants agreed that people who can afford wood would burn it in bukharis for warmth. Those who could not afford wood used coal,
- For warmth, homeowners living in huts used felt as insulation, and covered the outside of the shelter with sheep or goat's wool for additional warmth.

Tazar Curved Roof shelter type variation, Khulm District, Balkh Province.
Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.
* Felt mat

REGION: NORTH EAST

Hazard Frequency

96% of interviewed homeowners reported that natural hazards were common in their area

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Earthquake	37%
Blizzard	85%
Sandstorm	100%
Landslide	21%
Flooding	60%

Flooding, sandstorms, blizzards, and earthquakes were all common in the North East Region, which remains one of the most hazard-prone.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from public services	57%
Far from roads or markets	56%
Exposed to criminals/crime	44%
Exposed to conflict	36%
No social concerns	7%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to wind	98%
Exposed to cold/blizzards	89%
Prone to flooding	61%
Exposed to sun/drought	54%
Earthquakes are common	38%
Exposed to avalanche	10%
No environmental concerns	0%

- Interviewed homeowners expressed a variety of social concerns in plot selection, highlighting the isolation of many north eastern communities from services and exposure to criminal elements.
- Environmental concerns by homeowners reflected the mountainous environment in the North East Region; homeowners sought to **mitigate against cold, flooding, wind, and earthquakes** when selecting a plot location.

Methods of Coping with Hazards

- FGD participants described the region as **vulnerable to flooding.**
- Many FGD participants explained they would migrate to a safe place if there was heavy rain and flooding.
- FGD participants living in flat roof houses reported constructing a stone plinth as part of the foundation during construction, and also added sand to the soil when building bricks for the walls to withstand earthquakes and flooding.
- Many participants added iron and metal to the roof of their shelter to increase protection against rain.

Methods of Winterization

- This region remains one of the coldest in Afghanistan, and FGD participants were more likely than others to report collecting fuel in preparation for the winter.
- FGD participants explained that huts and tents are unsuitable for using gas. People living in these shelter types use a sandali for heat.[2]

Methods of Coping in the Summer

- Many FGD participants reported sprinkling water on the sides of black tents, which cooled the tent as the water evaporated.
- Many FGD participants reported using extra cloth next to the shelter to create shade to sit in to stay cool.
- This region is reported to have very mild summers.

Chapari (w/out centrepole) Hut shelter type variation, Chal District, Takhar Province. Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.
2. Similar system to 'Kotatsu' in Japan and 'Korsi' in Iran.

REGION: SOUTH

Hazard Frequency

97% of interviewed homeowners reported that natural hazards were common in their area.

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Flooding	65%
Sandstorm	63%
Earthquake	4%
Blizzard	2%
Landslide	1%

Flooding and sandstorms were the only two major hazards commonly reported in the region.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from roads or markets	54%
Far from public services	46%
Exposed to criminals/crime	36%
Exposed to conflict	12%
No social concerns	28%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to wind	80%
Prone to flooding	52%
Exposed to cold/blizzards	44%
Exposed to sun/drought	31%
No environmental concerns	0%

- Interviewed homeowners expressed a variety of social concerns in plot selection; the most important was being close to markets or services, though **concerns about crime and conflict were higher than in most other regions.**
- The South Region is warmer than other parts of Afghanistan, and environmental concerns by homeowners reflected the desert environment; **protection from wind and flooding were the greatest concerns** when selecting a plot location.

Methods of Coping with Hazards

- FGD participants reported collecting **sticks, grass, paper and sometimes plastic and waste for fuel.** They noted that this helps to keep their environment clean, despite its toxicity.
- Many participants living in tents built a 0.5 meter Pakhsa wall around the tent to protect the tent against the wind, sand and rain water.
- Insects were reported by FGD participants to be a major problem destroying shelters in the summer.

Methods of Winterization

- FGD participants living in flat roof shelters reported making **plastic curtains for doors and windows for insulation.**
- This region typically has **mild winters.**

Methods of Coping in the Summer

- Many FGD participants reported using electric fans, either powered by the network from Iran or by solar power.

Brick or pakhsa (urban) flat roof shelter type variation, Kandahar District, Kandahar Province. Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.

REGION: SOUTH EAST

Hazard Frequency

84% of interviewed homeowners reported that natural hazards were common in their area.

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Earthquake	87%
Blizzard	35%
Flooding	12%
Sandstorm	6%
Landslide	0%

Earthquakes were the most common hazard reported in the South East region, followed by blizzards.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Exposed to criminals/crime	55%
Far from roads or markets	42%
Far from public services	39%
Exposed to conflict	11%
No social concerns	31%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to cold/blizzards	71%
Earthquakes are common	68%
Exposed to wind	34%
Prone to flooding	6%
Exposed to avalanche	1%
Exposed to sun/drought	0%
No environmental concerns	2%

- More than any other region, exposure to criminality was the largest concern reported by interviewed homeowners in the South East. This was followed by concerns about being too far from markets or services.
- The South East Region is both cold and earthquake prone; environmental concerns by homeowners reflected this, with plot location being guided by mitigating cold and damage from earthquakes as much as possible.

Methods of Coping with Hazards

- FGD participants living in flat roof shelter types explained they usually have to pay experts to repair their shelters when they are damaged by hazardous weather.
- The South East is a mountainous region, and most FGD participants reported building their shelters on flat land to be more resistant to earthquakes.
- FGD participants explained they reinforced the walls of their flat roof shelters with soil and grass to prevent strong winds from damaging walls.

Methods of Winterization

- During winter, homeowners who could afford permanent shelters stayed in their areas, while tent dwellers typically moved to Khost province in the South East where it is warmer.
- Homeowners living in flat roof shelters explained people needed to clear snow from the roof three times a day so the roof doesn't collapse from the weight of the build-up.

Methods of Coping in the Summer

- Many FGD participants reported using electric fans, either powered by the network from Iran or by solar power.

Ghilzai Black Tent shelter type variation, Gardez District, Paktya Province. Photo credit: REACH Initiative, November 2020.

2. People add Charcoals to a pot and a table and blanket are then placed on top. Families tuck their legs under the table for warmth.

REGION: WEST

Hazard Frequency

100% of interviewed homeowners reported that natural hazards were common in their area.

Of these interviewed homeowners, the most commonly reported disasters were:[1]

Sandstorm	94%
Flooding	85%
Blizzard	41%
Earthquake	23%

Flooding, sandstorms, and blizzards were all common hazards in the West Region, and tended to vary based on the province.

Social Concerns

% of interviewed homeowners reporting social concerns about their shelter's plot of land:[1]

Far from public services	86%
Far from roads or markets	51%
Exposed to criminals/crime	31%
No social concerns	7%

Environmental Concerns

% of interviewed homeowners reporting environmental concerns about their shelter's plot of land:[1]

Exposed to wind	89%
Prone to flooding	84%
Exposed to sun/drought	48%
Exposed to cold/blizzards	37%
No environmental concerns	0%

- The **importance of services was emphasized by most interviewed homeowners,** as nearly all homeowners reported this was an issue in plot location. Market access and crime were also highly reported.
- Environmental concerns reported by homeowners closely reflected the most common natural hazards in the area; **exposure to wind and flooding were the greatest concerns.** Extreme cold and heat were also concerns as well.

Methods of Coping with Hazards

- To prevent flooding, FGD participants living in flat roof shelters reported **placing carpets between the houses to absorb rain.**
- FGD participants agreed it is important that shelter doors **faced away from the wind** to prevent storm damage.
- **Repairs could take a long time,** including four months to mine the stones with pickaxes needed to stone walled shelters in Ghor Province.

Methods of Winterization

- FGD participants reported that they had built shelters on **stone plinths to improve warmth and durability** of the shelter.
- In Ghor Province, all shelters were designed with a hallway to trap warmth in the shelter.
- FGD participants reported that they **needed fuel for six months of the year** to stay warm during the winter.
- Weather in the West can be harsh, and most FGD participants living in flat roof shelters reported needing to make extensive repairs every three years due to damage from rain and snow.
- Participants reported sprinkling salt on the roof to melt snow to prevent buildup and prevent the roof from collapsing.

Methods of Coping in the Summer

- FGD participants noted a lack of shade to stay cool as **there were very few trees** in the region, and relied on shelter materials, like kaghil, to keep the shelter cool.
- Participants living in tents reported **rotating the door** of their tent to face the wind and **removing the layers of cloth** that they had added for winter.

Shervani Roof Flat Roof shelter type variation, Herat District, Herat Province. Photo credit: REACH Initiative, November 2020.

1. Respondents could select multiple options.

COUNTRY HOUSING PROFILE

Above: Massive Stone Walls Flat Roof shelter type variation, Asadabad District, Kunar Province. Photo credit: REACH Initiative, November 2020.

Below: Durrani Black Tent shelter type variation, Kandahar District, Kandahar Province. Photo credit: REACH Initiative, November 2020.

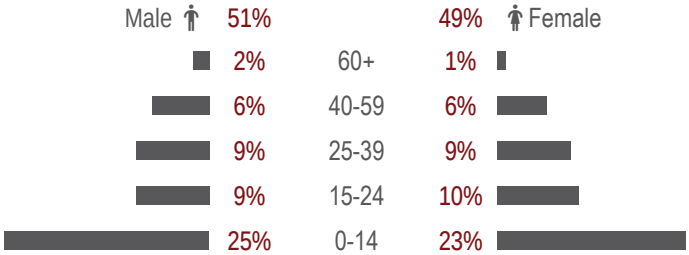
COUNTRY PROFILE

POPULATION

Official Name:	Islamic Republic of Afghanistan[1]
Date of Independence:	1919[1]
Capital:	Kabul[1]
Provinces:	Afghanistan has 34 provinces[2]
Districts:	419 administrative units; 34 provincial centres and 24 temporary districts[2]
Ethnic Diversity:	Afghanistan's constitution officially recognizes 14 ethnic groups: Pashtun, Tajik, Hazara, Uzbek, Baluch, Turkmen, Nuristani, Pamiri, Arab, Gujar, Brahui, Qizilbash, Aimaq, and Pashai. There is a high level of bilingualism in Afghanistan. Afghans reported speaking Pashto (46%) and Dari (77%), which are the official languages. Afghanistan's Constitution notes that all other languages are "official" in the areas in which they are spoken by most of the population[1]
Population:	37,466,414[1]
Rural – Urban Ratio[3]	• Rural areas 71.2% • Urban areas 23.8% • Nomadic / Kuchi 5%

Map 2: Provinces of Afghanistan

Table 5: Estimated Population of Afghanistan 2016[2]



Jat Cotton Tent, Gardez District, Paktya Province. Photo credit: REACH Initiative, November 2020.

Socio-economic Indicators

Exchange Rate		1 USD = 77.62 AFN[4]
GDP (2019)		19.291 (+3.9%)[5]
GNI Per Capita (2019)		530 USD[5]
Statistical Capacity Score (2019)		50
Unemployment Rate (2017)		23.9% (estimate)[5]
Poverty Rate (2017)		54.5% (estimate)[5]
Life expectancy	Male	63 years[5]
	Female	66 year[6]
	Total	64.5 years[6]
Mortality Rate (<5 years)		60%[7]
Primary School Completion Rate		54%[7]
Primary School Attendance Rate		64%[7]
Youth Literacy Rate (15-24)		65%[7]
Fertility Rate, Total		4.5 per woman[5]
CO_2 emissions per capita		0.245 metric tons[5]
Labour force (by occupation)	Agriculture	Agriculture: 44%[4]
	Industry	Industry: 18%[4]
	Services	Services: 38%[4]

Populations in Need[8]

Conflict	IDPs (Total)	2,993,000
	New (2019)	461,000
Disaster	IDPs (Total)	1,198,000
	New (2019)	117,000
Returnees		714,000
Refugees		72,000

1. CIA, World Factbook: Afghanistan, 2020.
2. (OCHA) Afghanistan, CSO Population Estimates for 2016 to 2017
3. MUDL, Afghanistan Land Administration System Project, February 2019.
4. Da Afghanistan Bank: Exchange Rates (28 February 2021).
5. World Bank Data: Country Profile Afghanistan
6. The World Bank: Life expectancy at birth, total (years) - Afghanistan
7. UNICEF: Country Profile Afghanistan
8. IDMC, Afghanista: Country Information, 2020.

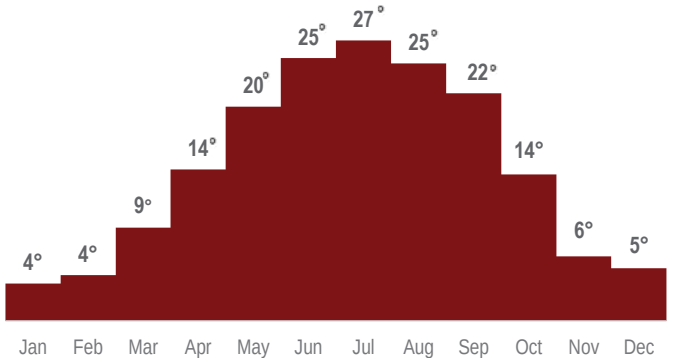
GEOGRAPHY

Afghanistan's climate fluctuates between extremes, featuring both very cold winters and hot summers, which is typical of a semi-arid steppe climate. Yet there are many regional variations. The mountainous areas in the North West have a sub-Arctic climate with dry, cold winters, while the mountainous areas in the East near Pakistan are very hot and have seasonal monsoons.[10] The country's terrain is very rugged, and the elevation ranges from 150 to 8,000m, averaging 1,100m above sea level. There are five major river basins. Average annual temperatures have increased by 0.6°C between 1960 and 2008. About half of the annual precipitation occurs in winter (January to March), much of which falls as snow in the central mountainous areas.[11]

Table 5: Climate Patterns in Afghanistan

Temperature	Afghanistan has a continental climate, with temperatures ranging on average from 30°C in summer to -20°C in winter [12]
Water	Although Afghanistan has a semi-arid environment, it is rich in water resources, mainly because of the high mountain ranges such as Hindu Kush and Koh-i-Baba, which are covered with snow[13]
Elevation	Most of Afghanistan lies between 2,000 and 10,000 feet (600 and 3,000 metres) in elevation[13]

Graph 1: Average Monthly Temperature in Afghanistan, 2016[14]



PROTECTED AREAS

The Government of Afghanistan acknowledges that the country faces many challenges. In their 'National Protected Area System Plan' (2009) the National Environmental Protection Agency recognises that land protection may not initially seem like a crucial area of attention. However, it is also noted that land preservation and ensuring the distribution of equitable resources is important in creating social and economic development. The World Database on Protected Areas lists 15 areas of Afghanistan that are designated or are in the process of being designated as protected area status.[15]

Table 6: Protected Areas in Afghanistan[15]

No.	Name	Designation	Area	Status	Status Year
1	Nuristan		5,733	✓	2020
2	Ab-i-Estada		282		N/A
3	Hamun-i-Puzak		442		N/A
4	Dasht-i-Nawar		375	✓	2020
5	Wakhan National Park		10,910	✓	2016
6	Hamun-i-Hilman (Sistan Lakes)		837		N/A
7	Band-i-Amir National Park		606	✓	2009
8	Ragistan Desert		22,040		N/A
9	Darqad (Takhar)		627	✓	2020
10	Kol-i-Hashmat Khan		2	✓	2017
11	Imam Sahib (Kunduz)		581	✓	2020
12	Northwest Afghanistan		8,379		N/A
13	Hamun-i-Saberi		113		N/A
14	Koh-e Baba (Shah Foladi)		342	✓	2019
15	Bamyan Plateau		0	✓	2019

Designation	
Waterfowl* Sanctuary	
Protected Landscape	
Wildlife Reserve	
National Park and Wildlife Reserve	
No Designation	

Status	
Designated	✓
Not Designated	
Proposed	

*Waterfowl are birds that are strong swimmers with waterproof feathers and webbed feet e.g.ducks

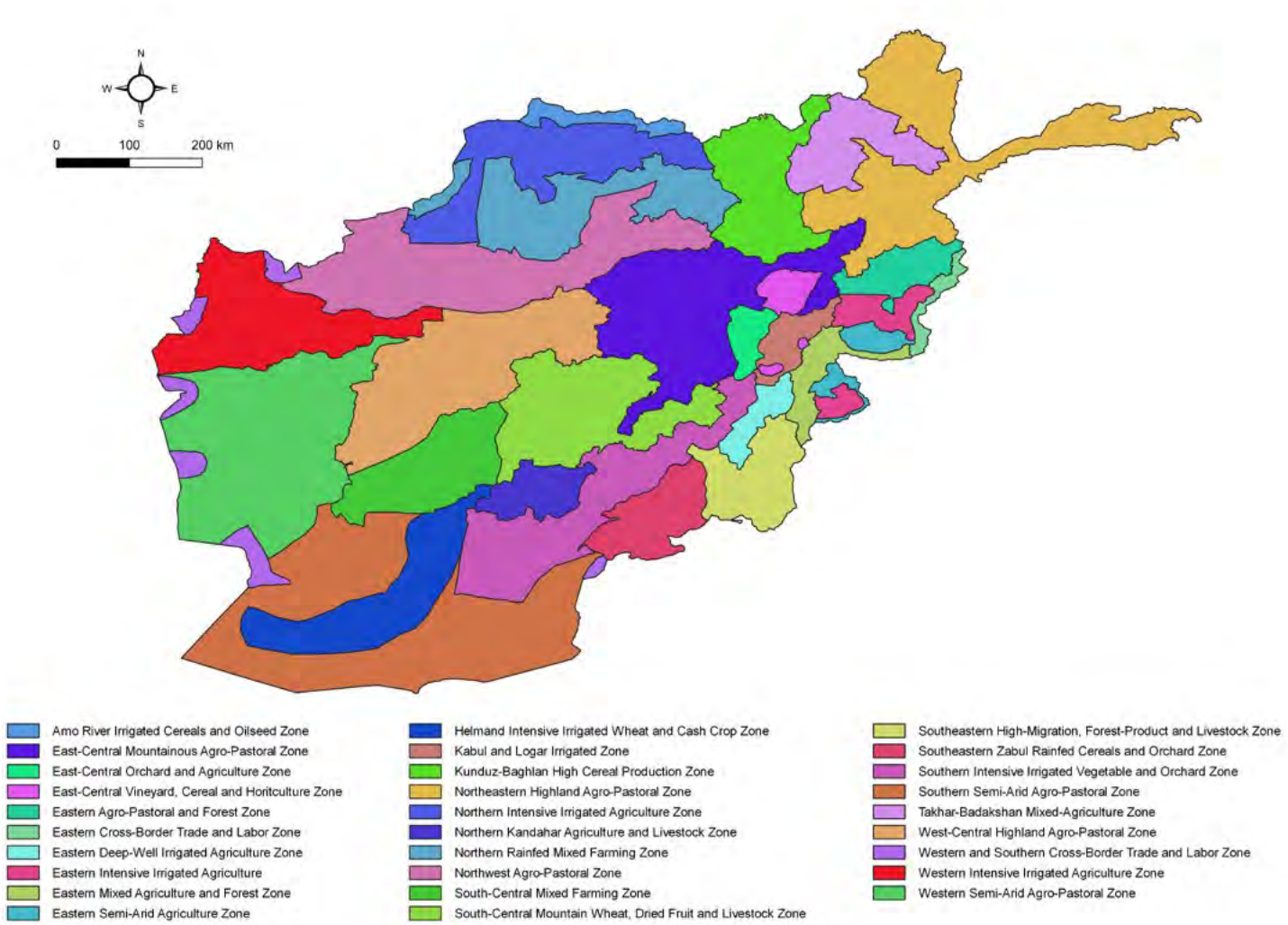
9. OCHA, 2021, Humanitarian Needs Overview, November 2020.10. FAO. 2012. AQUASTAT Country Profile – Afghanistan. Food and Agriculture Organization of the United Nations (FAO). Rome, Italy
11. Climate Knowledge Portal: World Bank. Country: Afghanistan
12. UNDP Climate Change Adaptation: Afghanistan
13. FAO. 2012. AQUASTAT Country Profile – Afghanistan

LIVELIHOODS

Afghanistan features a highly diverse climate, necessitating a diversity of livelihoods depending on the area of the country. Livelihoods are defined as a the sum or ways in which households are able to meet their needs to live.[16] While about 15% of the country labour force works in industry, and there is a large and growing portion of the labour force working in services, a plurality of Afghans are still mainly employed in agriculture, and achieve their main livelihoods in this way. These livelihoods are extremely diverse depending on the surrounding environment. Food security and livelihoods actors have identified 29 separate zones, in which agricultural livelihoods vary, which is shown in Map 3 below. Each zone represents a different set of climatic conditions, within which the population pursues different planting and harvesting patterns, crop types, market access, and environmental shocks. An overall description of each livelihood zone is found in the map legend.

Interior roof of Gumbazi curved Roof shelter type variation, Bamyan District, Bamyan Province. Photo credit: REACH Initiative, November 2020.

Map 3: Afghanistan's Livelihood Zones[16]



14. Climate Knowledge Portal: World Bank. Country: Afghanistan
15. UNEP-WCMC (2021). Protected Area Profile for Afghanistan from the World Database of Protected Areas
16. FEWSNET, Livelihood Zones of Afghanistan: Updating and partners

HOUSING SECTOR

Context Overview

Rapid urbanisation is a challenge faced in cities across Afghanistan. A recent report by UN-HABITAT noted that 50% of residents are projected to be living in cities by 2060.[17] At present, there is insufficient safe long-term housing for Afghans including IDPs, returnees, and host communities, and many live in informal urban settlements; indeed, as much as 70% of inhabitants in cities could be classified as living with informal housing arrangements, and as many as 86% could be classified as living in 'slum' housing. Notwithstanding, home ownership is significantly high, as UN-HABITAT reported that home ownership in Afghanistan is as high as 97% and three quarters (73%) in urban areas.[17]

Afghanistan has a variety of local shelter types that are constructed by households using local knowledge. These shelter types are most common in rural areas, and do not require formal engineering training or special, imported materials in order to build them. There are 7 distinct shelter types in Afghanistan, according to Szabo and Barfield 1991, which each have different distinct variations. A summary of each shelter type category is in table 7 below:

Table 7: Primary Shelter Types Found in Afghanistan[18]

Shelter Type	Description
Black tent:	Collapsible tents made of woven goat hair panels, sometimes supported by woven reed mat walls. They are commonly used among nomadic peoples (kuchi).
Cotton Tent:	Canvas tents are pre-manufactured or made by stitching pieces of cloth together and supported with poles.
Yurt:	Mobile shelters made of cloth or animal hide stretched over a wooden frame of interlocking wood pieces. Roofs are either domical or conical shaped.
Hut:	Mobile shelters made of woven reed or tamarisk mats held by poles.
Curved Roof Permanent:	Permanent shelters made of packed mud or bricks. The roof of the shelter is made of brick and is shaped like a dome or arch.
Flat Roof Permanent:	Permanent shelter with mud, brick, or stone walls, and wood-supported flat roofs. These shelters are constructed with stone, timber, bricks, pakhsa, or a combination thereof.
Cave:	Permanent shelter made from a natural void in the side of a hill, mountain, or cliff-face.

Current Challenges

Due to years of conflict, both access and security of land remain a cause of tension within Afghan communities. Disputes surrounding land are often either a cause of, or a result of, decades of armed conflict. Many IDPs and returnees don't have access to shelter or land due to the destruction of property or land grabbing. Land grabbing has become a common practice in Afghanistan, in which wealthy land owners or developers are able to take land from poor households with little to no compensation, and take water sources, agriculture, or pasture land.[17]

Definition of Land Grabbing: Land grabbing is broadly defined as the, "control of land by any means for purposes of extraction, resource control or commodification at the expense of peasant farmers, as well as agroecology, land stewardship, food sovereignty and human rights."[19] The Centre for Economic and Social Rights has noted that land grabbing threatens people's economic, social and cultural rights. They explain that land access is integral to a person's right to food, housing, self-determination and participation in cultural life.[20]

Land Management

There are over thirty laws, documents, policies, and bodies governing land rights in Afghanistan, of which the central law is based on the Constitution of Afghanistan.[17] The main laws are shown in Table 8, below:

Table 8: Policies and Laws Governing Land Management[19]

Name	Year Enacted
Land Tax Law	1976
Civil Code	1977
The Universal Islamic Declaration of Human Rights	1981
Survey and Cadastre Law	1988
Land Management Law	2000
Municipal Law	2000
Law on Pastures and Mara'a	2000
Presidential Decree 99	2002
Presidential Decree 83	2003
Income Tax Law	2007
The National Land Policy	2007
Law on Managing Land Affairs	2008
Land Expropriation Law	2009
Forest Law	2012
Mineral Law	2015
Land Governance Assessment Framework	2017

participation, July 2017.

17. UN-Habitat, Ministry of Urban Development and Housing, Afghanistan: Housing Profile, 2017.

18. Albert Szabo and Thomas Jefferson Barfield, Afghanistan: An atlas of indigenous domestic architecture, 1991.

19. Baker-Smith, Katelyn, What is Land Grabbing? A critical review of existing definitions. Eco Ruralis, 2016.

Land Management

Land Acquisition

There are three institutions involved in land management in Afghanistan. The Afghanistan Independent Land Authority (ARAZI) manages state land and provides support to municipalities. Provincial municipalities allocate urban municipal land for housing construction and maintain residential zoning areas. In addition, the Ministry of Refugees and Repatriation (MoRR) provides land for displaced households.

Table 9: Key Institutions Governing Land Management[21]

Land Management Institutions	Role
Afghanistan Independent Land Authority (ARAZI)	Responsible for managing state-owned land and provides support services to Government bodies investors and individuals
Ministry of Refugees and Repatriation (MoRR)	Responsible for the land distribution programme for eligible returnees and IDPs
Municipalities	Responsible for land allocation for housing construction and maintenance

The process of registering land and obtaining title deeds in Afghanistan is expensive. Due to the cost of registering land, only 10% of land transactions are estimated to actually go through the official registration procedures. Moreover, Afghanistan ranks 184 out of 189 in ease of registering property.[21] As a result, UN-HABITAT estimated that only 10% of rural and 30% of urban land has a legal deed.[21] To ease land access, the Government has developed two schemes: 1) The 'State Land Distribution Scheme,' which allocates land to low-income public servants, IDPs and returnees, and 2) the 'Land Allocation Scheme' (2005) which supports the allocation of land to IDPs and returnees in particular.

Land Ownership and Tenancy in Afghanistan

A key challenge for Afghanistan is to create an equitable land management system amidst ongoing conflict and increasing land degradation caused by climate change. The Afghan Government has divided land management into nation-wide and municipal level. They established a third institution which aims to support returnees and IDPs in accessing land for livelihoods and housing.

Table 10: Overview of Land Ownership[21]

Type of Land Ownership	Description
Public	Land allocated for public use
Private	Collectively or individually held land with or without recognised state documentation
State	Land either registered as state land, or unregistered public land
Waqf	Land donated for charitable purposes
Common	Community land for grazing

Land Tenure Types

Afghanistan has three primary types of land ownership; private, public and state. These forms of land ownership have their own respective laws for transferring land, which can often complicate the provision of services if the occupants are not allowed to modify the land in any way. Furthermore there are three forms of law which govern land which all define land differently; Statutory law, Shar'ia law and customary law and practice. The table below is reproduced from the UN-HABITAT and Ministry of Urban Development and Housing study and explains the different forms of land tenure under which land can be managed in Afghanistan.[21]

Table 11: Types of Land Tenure[21]

Type of Tenure	Description
Ownership	Either based on formal or customary law. Under the 2008 Law on Managing Land Affairs, all land not proved to be private is deemed to be state land.
Leasehold	The 2008 Law on Managing Land Affairs permits leasing between private parties, subject to written leases.
Agreed Rights of Access	The Law on Managing Land Affairs states that pasture land is public property that neither the state nor any individual can possess (unless declared otherwise by Shari'a). This land must be unoccupied for the public to use. Individuals can get access through customary use and deeds.
Occupancy Rights	In urban areas, landholders in formal settlements generally have formal rights to the land. Occupants of informal settlements usually have some type of informal rights based on principles of customary law. The 2007 Land Policy permits the regularization of rights to informal settlement holdings, but implementing legislation has yet to be enacted.
Mortgage	Formal and customary law recognize two types of land mortgage: 1) Debt secured by the land. 2) Lender takes possession of the land until the borrower repays the debt

20. The Centre for Economic and Social Rights, Land Grabbing and Its Implications for Economic, Social and Cultural Rights.

CONSTRUCTION SECTOR

Size and Scope

The construction sector in Afghanistan employs approximately 106,300 people. The three Ministries with largest construction budgets are the Ministry of Economy, the Ministry of Defense and the Ministry of Interior Affairs. These three Ministries employed approximately 800 people in construction in 2017.

The Ministry of Urban Development and Housing (MUDH) has three construction Tasadees [Government owned companies]: 1) Housing, 2) Banaee, and 3) Afghani. These tasadees employ approximately 600 people, of which there are 75 construction engineers. The market value of the industry was approximately $15.2 million USD in 2017, and constructed 1.5 million housing units between 2002 and 2017.[22]

Current Projects

There was a total of 1,039 official construction projects in 2017, and approximately 10,000 projects have been completed in the 10 years previously. Many projects are similar to the 'Housing Construction Enterprise' project, where the government partnered with private company, to secure prefabricated housing and build 1,200 apartments, 250 schools and 250 Government offices. Recently the Government of Afghanistan, through MUDH, has obtained the commitment of China, the United Arab Emirates, and Qatar to support the construction of 22,000 housing units in the country.[29]

Land Regulation

Afghanistan has seven land regulation authorities:[23]

1. The Ministry of Commerce and Industries issues the company license for construction
2. The Municipality provides construction permits
3. The Makhzan provides the land deed
4. The Ministry of Urban Development and Housing prepares the township Master plan
5. The Ministry of Finance manages all tax concerning construction
6. The National Procurement Authority evaluates the contracts
7. The Ministry of Economy awards the relevant public sector contracts

There is an estimated 35,000 housing shortage per annum. Since 2001, a total of 83,000 formal apartment units have been built, of which, the state built 27,000 and private sector built 55,000 units. The total amount of loans disbursed since 2010 has significantly dropped by 85% from 7,412 million AFN to 1,090 million AFN in 2017.[24]

Steel frame and metal sheet flat roof shelter type variation, Jalalabad District, Nangarhar Province. Photo credit: REACH Initiative, November 2020.

Affordable Housing

UN-HABITAT/MUDH has identified that by the end of 2014, the housing deficit was approximately 1.5 million units. The limited supply of housing has pushed the cost of buying a home out of reach for many Afghans. The World Bank defines affordable housing as costing 30% or less of total household gross income. The same report explains that an Afghan on an average salary would spend 85% of their income to rent a typical urban housing unit. Conflict, frequent natural hazards, and supply bottlenecks related to land acquisition, building materials and financing have led to an almost total absence of affordable housing within the country.[25] The table below displays the inputs and constraints in Afghanistan's affordable housing sector.

Table 12: Inputs and Constraints in Afghanistan's Affordable Housing Sector [25]

Inputs	Constraints
Land	Land grabbing; Limited access to appropriate housing for middle-income households; Inefficient use of land; Tenure insecurity in informal settlements
Infrastructure	Inadequate sanitation, water and electricity services
Building Materials and Construction Processes	Most materials imported; Limited skilled labour; Low construction quality enforcement
Financing	Limited lending suppliers; primarily upfront cash payments for construction and repairs

21. UN-HABITAT, Ministry of Urban Development and Housing, Afghanistan: Housing Profile, 2017.
22. Office of the Senior Economic Advisor, Construction Sector: Sector Overview, 2017.
23. UN-Habitat, Ministry of Urban Development and Housing, Afghanistan: Housing Profile, 2017.
24. Office of the Senior Economic Advisor, Construction Sector: Sector Overview, 2017.

Mortgages

Key challenges facing those seeking a mortgage include:[26]

- Non-supportive banking laws.
- Lack of capital.
- Difficulty in repossession of property in case of default.
- Difficulties in tracking individuals due to the lack of identification and postal addresses.

Challenges facing the sector include:[26]

- A lack of corporatization which prohibits companies from building capital
- The low-level salaries in comparison to industry discouraging a skilled workforce.
- The only state-owned mortgage and reconstruction bank has folded. Citizens are now reliant on the private secure for reasonable mortgage rates.

UNITS OF MEASUREMENT

While the metric system is primarily used across urban Afghanistan, traditional units continue to be used for area and weight in rural areas. The units of measurement for area are biswaasa, biswa, and jireeb. Table 13 explains the conversions of these measurements to the metric and imperial systems below:

Table 13: Traditional Units of Measurement in Afghanistan[27]

Traditional Units	Metric System	Imperial
1 Biswaasa	5 sq meters	6 square yards
20 Biswaasa	100 sq meters	119 yards
1 Biswa	2,000 sq meters	2,329 yards or 1.3 miles
1 Jireeb	40,000 sq meters	9.9 acre

Sun-dried brick dome and vault (Gumbazi), Zaranj District, Nimroz Province. Photo credit: REACH Initiative, November 2020.

NATIONAL DISASTER RISK REDUCTION STRATEGY

The Sendai Framework for Disaster Risk Reduction (DRR) (2015–2030) is the most influential strategy for DRR used in Afghanistan currently. While signing this strategy, Afghanistan developed the Strategic Framework 2018–2028 and the Afghanistan DRR National Strategy, which are the two primary policies governing DRR currently in place. Unfortunately, a lack of human and economic capital has resulted in the inability to fully implement these strategies.[28] A 2019 Open Development Initiative report noted that Government representatives acknowledged these limitations. This report also identified that the Government of Afghanistan documented the challenges they experienced when implementing DRR in the Natural Disaster Mitigation Policy of Afghanistan, and that conflict-related reasons had limited the Government's ability to coordinate DRR effectively. Large portions of Afghanistan are beyond state control due to conflict-related reasons, and there are few actors that have the capacity to implement DRR activities effectively. Those that have the capacity, including international NGOs, have been hesitant to officially partner with the Government as it may impact their neutrality.[28]

Table 14: Households in Afghanistan by Tenancy Status and Residence Type[26]

Residence	% Inheritance	% Purchased	% Constructed	% Tenant	% Charity	% Other
Urban	29%	27%	15%	21%	2%	6%
Rural	60%	7%	26%	1%	2%	4%
Kuchi [47]	16%	31%	24%	0%	8%	21%
Total	51%	13%	23%	6%	3%	5%

25. UN-Habitat, Ministry of Urban Development and Housing, Afghanistan: Housing Profile, 2017.

26. UN-Habitat, Ministry of Urban Development and Housing, Afghanistan: Housing Profile, 2017.

27. Traditional Measurement Units, Qazi, Abdullah. 2018

28. ODI, Mena, R. Hilhorst, D and Peters, K., Disaster risk reduction and protracted violent conflict: The case of Afghanistan, 2019.

HAZARD FREQUENCY

Afghanistan is prone to earthquakes, flooding, drought, landslides, and avalanches. Throughout 2020, an estimated 104,470 people were affected by natural hazards throughout Afghanistan, and populations in all 34 provinces were reported to have experienced some form of natural hazard during the period.[29] The protracted conflict, vulnerability to climate change, and chronic underinvestment in DRR measures across Afghanistan has left its citizens without much resilience to regular shocks from natural hazards.[30] On average, natural hazards affect 200,000 people a year.[31]

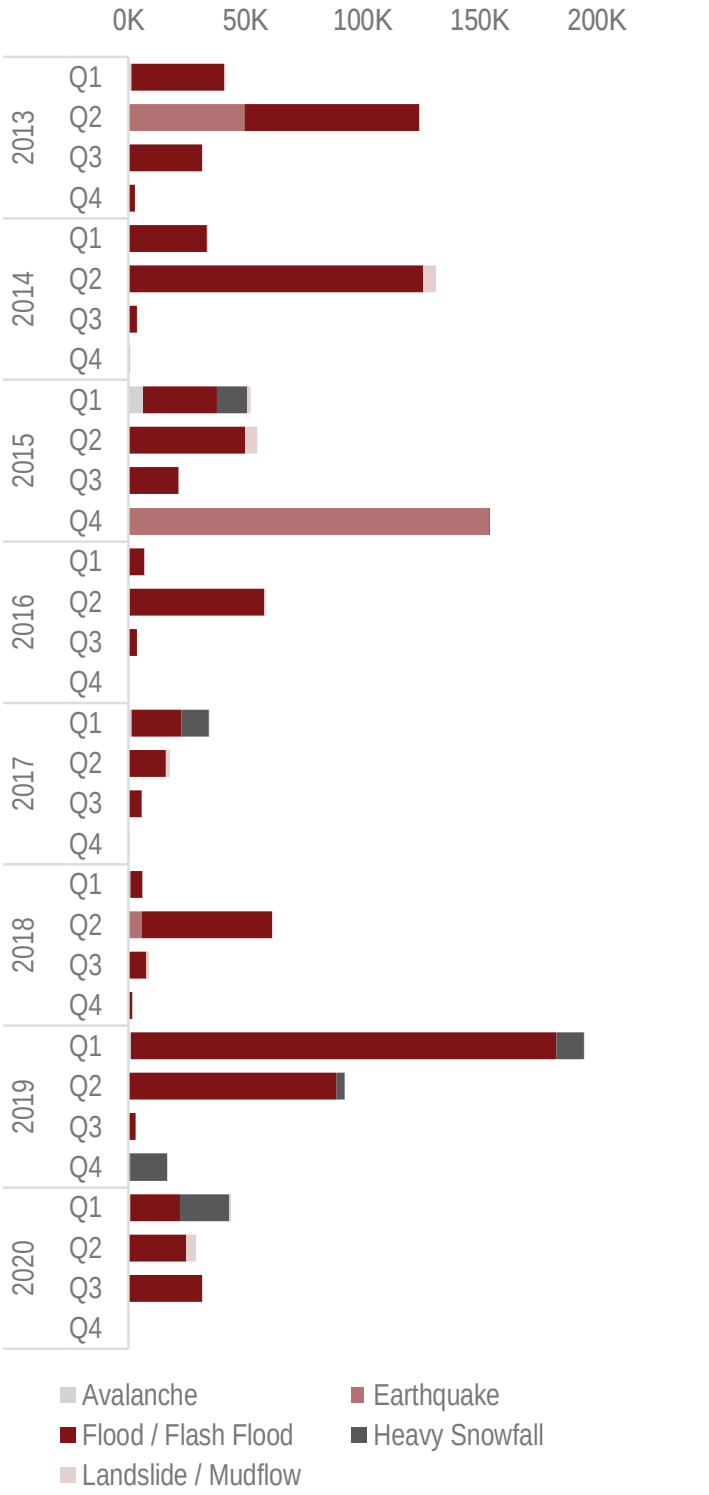
A study by the World Food Programme (WFP), the United Nations Environmental Programme (UNEP) and Afghanistan's National Environmental Protection Agency in 2016 found that Afghans perceive climate change as an environmental problem that needs to be solved by technical rather than social solutions; most people did not believe their behaviour effected climate change, and therefore were not concerned about its long-term social or economic implications or risks posed by climate change.[31]

Afghanistan increasingly suffers from both droughts and floods which negatively impact livelihoods. Desertification is a growing concern for rural households, the national economy, and food security. This is particularly concerning as, at present, 44% of national employment is in the agricultural sector.[31]

Land disputes have been a leading cause of conflict in Afghanistan. The United Nations Development Programme (UNDP) anticipates that as arable land decreases and urbanisation increases there will be more disputes over the remaining arable land left for farming.[49] Desertification and droughts are projected to intensify as scientists expect that temperatures will increase by 4°C in the next 45 years. Areas of specific concern include the melting of the Pamir/Hindu Kush glaciers in the country's north-east.[32] Programmes run by UNDP and the Afghanistan National Government's Programme of Action for Climate Change (NAPA) programme have focused on livelihood development and climate risk and response measures. These programmes have aimed to mitigate the effects of climate change for structurally vulnerable populations in target communities.

Kapa Hut shelter type, Faizabad District, Badakhshan Province. Photo credit: REACH Initiative, November 2020.

Time line of number of Afghans affected by natural hazard incidents [29]



29. OCHA: Afghanistan: Overview of Natural Disasters, 2021
30. WHO, Afghanistan: Situation Report, July 2019
31. WFP, UNEP & NEPA: 2016, Climate Change in Afghanistan: What Does It Mean For Rural Livelihoods And Food Security?
32. UNDP, Climate Change Adaptation Afghanistan, 2020. 52. Global Shelter Cluster: Afghanistan

ES/NFI CLUSTER

In 2020, The ES/NFI Cluster worked to support 1.4 million vulnerable people affected by conflict and natural hazards with shelter, NFI and winterization assistance. The ES/NFI Cluster defines shelter organisations' roles and responsibilities countrywide in Afghanistan to ensure a stronger predictability and accountability in humanitarian response, and a more effective provision of assistance. The cluster prioritizes the provision of timely, targeted and appropriate assistance by coordinating distributions of emergency shelter kits and materials to populations in need. The ES/NFI Cluster also supports in the repair or replacement of both temporary and permanent shelters where needed.[33]

Following this, the most recent published ES/NFI Cluster strategy has noted the support for resilience and DRR strategies for local housing through three interrelated key objectives:[33]

1. Ensuring timely, adequate access to shelter and non-food items for vulnerable internally displaced, and returnees
2. Ensuring that the living conditions of vulnerable people are improved.
3. Ensuring adequate response capacity through preparedness measures and prepositioning of emergency shelters and NFIs.

In order to attain these goals, the following key activities were defined as priorities for the ES/NFI Cluster in 2018:[33]

- The Cluster will work to support aid actors by prioritizing vulnerable populations affected by emergencies, in both accessible and hard to reach areas, for emergency shelter and NFI assistance to ensure their safety and mitigate protection and health risks.
- The Cluster will supports the improvement of existing shelter conditions for prolonged vulnerable populations that are living in poor shelters.
- The Cluster will work to construct transitional shelters for IDPs and returnees as a short term solution to support their well-being while they wait for permanent housing.
- The Cluster will prioritize the most vulnerable families for winterization support above those with less need.

Massive Stone Walls Flat Roof shelter type, Feroz Koh District, Ghor Province. Photo credit: REACH Initiative, November 2020.

GENDER ISSUES

Women in Afghanistan generally have less access to land, property and housing rights. One study found that less than 2% of women own land, most of which secured this through inheritance.[34] While legally women can own land, women's property rights are not customarily respected. Women in Afghanistan face considerable social and cultural barriers which results in few having the economic resources needed to buy a property.

Land is rarely inherited by women, as widows often transfer this to their sons and daughters transfer land to their brothers once married.[35] Female-headed households often live in conditions which lack the basic requirements of dignity, privacy, safety and security.

The Whole of Afghanistan Assessment 2020 also reported that at least 59% of female-headed displaced households; 58% of displaced households headed by the elderly and 67% of households headed by a person with a disability were found to be in either severe or extreme need of shelter and NFI assistance, emphasising the broader finding that structurally vulnerable populations, including women and girls, are highly affected by substandard housing.[36]

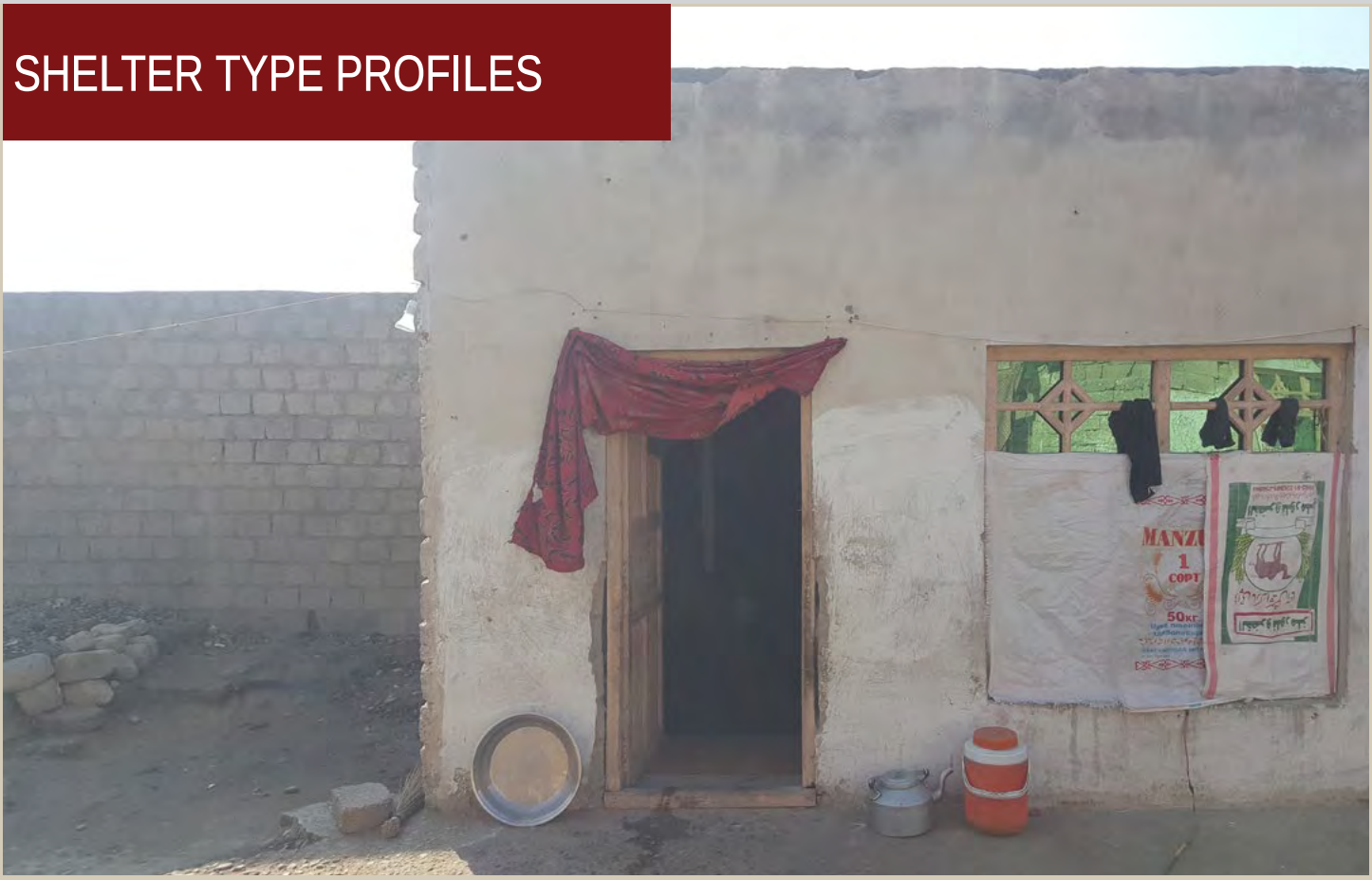
Interior of Concrete Block and Mud Flat Roof shelter type, Gardez District, Paktya Province. Typical roofing includes wood beams with chegh covering, covered by mud. Photo credit: REACH Initiative, November 2020.

33. ES/NFI Cluster, AFG ES/NFI Cluster Strategy 2018 EN, June 2018.

34. USAID (2010) USAID Country Profile: Property Rights and Resource Governance: Afghanistan. Washington, DC: United Stated Agency for International Development

35. UN-Habitat, Ministry of Urban Development and Housing, Afghanistan:

SHELTER TYPE PROFILES



Above: Concrete Block Flat Roof shelter type variation, Behsud District, Jalalabad Province. Photo credit: REACH Initiative, November 2020.

Below: Brick and Pakhsa Flat Roof shelter type variation, Bamyan District, Bamyan Province. Photo credit: REACH Initiative, November 2020.

SUMMARY TABLE

The following profiles detail the designs and BoQs of the 26 shelter type variations collected with the shelter design tool. Each profile documents an example of the shelter type variation and its BoQ; individual shelter costs and materials are expected to vary by region and household resources. In the tables below, costs are averaged by shelter type variation, and by region, to provide an indication of how material, labour, and transport costs vary by shelter type variation and region.

Table 1: Summary of Shelter Types and Associated Attributes

Shelter Family	Shelter Type	Shelter Costs (AFN)					Labour M/D					Regions Present						
		Materials	Unskilled Labour	Skilled Labour	Transport	Transport	Unskilled	Skilled	Shelter Age (Years)	Construction Time (Days)	# Of People that Can Sleep in Shelter	Central	East	North	North East	South	South East	West
Black Tents	Vaulted - Durrani	39,206	1,500	1,500	500	42,706	6	3	4	7	4.8	■		■	■	■	■	■
	Vaulted - Baluch	32,705	1,500	4,500	2,000	40,705	15	3	7	12	6.1	■				■	■	■
	Peaked - Ghilzai	40,544	3,500	5,100	2,800	51,944	17	7	6	9	8.9	■	■	■	■	■	■	■
	Peaked - Brahui	81,374	4,000	4,200	2,250	91,824	14	6	5	13	7.7	■				■	■	■
Cotton Tents	Jugi	23,127	2,167	1,800	1,800	28,893	6	3	7	4	6.6	■	■	■	■	■	■	■
	Jat	13,042	1,925	3,750	1,788	20,504	10	3	4	5	6.2	■	■	■	■	■	■	■
	Herati tent	36,521	1,000	14,350	2,800	54,671	41	2	2	11	4.7		■		■	■		
Huts	Circular - Lacheq	29,996	9,600	2,400	3,000	44,996	12	12	27	26	4.3			■				
	Circular – Chapari without centerpole	9,581	2,400	1,600	1,200	14,781	4	4	3	12	5.7	■			■			
	Rectangular – Kapa-i-arab	16,800	1,800	1,200	400	20,200	3	3	5	10	5.2				■			
	Ovate-Oblong - Kodai	34,640	6,000	5,400	2,500	48,540	18	6	6	15	7.3	■	■				■	
	Ovate-Oblong - Kapa	17,833	4,250	2,850	575	25,508	10	9	5	10	5.1	■	■	■	■	■	■	■
Cave	Samoch	25,914	72,000	31,500	4,000	133,414	90	90	5	56	7.1	■						
Curved roof Construction	Gumbazi	53,268	25,000	27,500	2,525	108,293	80	33	19	24	5.5	■		■	■	■	■	■
	Tazar	70,197	14,800	22,500	2,000	109,497	75	26	26	24	5.2			■			■	
	Fired brick vaults and timber beams	52,645	16,800	13,500	3,000	85,945	45	28	10	21	6.2	■			■	■	■	■
Flat roof Construction	Brick or Pakhsa walls (rural)	99,881	23,950	21,407	6,057	151,295	66	34	8	26	4.1	■	■	■	■	■	■	■
	Brick or Pakhsa walls (bamyan variant)	89,571	15,000	13,650	5,000	123,221	39	15	8	20	6.2	■						
	Brick or Pakhsa walls (urban)	119,969	28,686	23,454	8,986	181,094	63	31	12	28	6.2	■	■	■	■	■	■	■
	Concrete block and mud	145,347	36,000	37,500	4,600	223,447	125	60	16	50	8.7	■	■	■	■	■	■	■
	Concrete blocks and cement	64,008	11,900	9,000	9,000	93,908	30	17	9	12	5.8	■			■			
	Steel frame	34,469	11,900	9,000	3,000	58,369	30	17	3	7	3.6	■				■	■	■
	Massive stone walls	131,222	38,480	34,680	7,780	212,162	71	31	18	48	7.3	■	■	■	■	■	■	■
	Timber and stone walls	171,128	49,400	35,000	2,500	258,028	110	77	9	50	6.6	■				■		
	Shervani roof	54,044	7,000	33,600	6,750	101,394	96	141	4	15	4.9	■		■	■	■	■	■
	Brick and wood frame walls (Kabuli house)	221,871	29,400	26,750	5,925	283,946	84	40	36	39	8.7	■	■	■	■	■	■	

REGIONAL COSTS

Central Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents	21,300	400	6	2,200	750	3	2,250	1,750	27,500
Huts									
Cave	25,914	350	90	31,500	800	90	72,000	4,000	133,414
Curved roof Construction	79,286	350	40	14,000	1,000	20	20,000	2,000	115,286
Flat roof Construction	102,615	380	51	19,280	830	24	20,400	6,700	148,995

East Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents	12,130	300	6	1,800	700	3	2,100	1,800	17,830
Huts									
Cave									
Curved roof Construction									
Flat roof Construction	141,693	300	46	14,457	700	28	19,500	8,500	184,150

North Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents	10,715	500	5	2,500	800	2	1,600	3,000	17,815
Huts	29,996	200	12	2,400	800	12	9,600	3,000	44,996
Cave									
Curved roof Construction	50,708	350	70	25,000	900	22	19,800	2,850	98,358
Flat roof Construction	252,823	300	39	11,700	800	20	15,600	15,000	295,123

North East Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents									
Huts	13,217	367	5	1,833	567	5	2,567	650	18,267
Cave									
Curved roof Construction									
Flat roof Construction	118,071	388	26	10,125	724	27	19,988	1,875	150,058

REGIONAL COSTS

North East Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents									
Huts	13,217	367	5	1,833	567	5	2,567	650	18,267
Cave									
Curved roof Construction									
Flat roof Construction	118,071	388	26	10,125	724	27	19,988	1,875	150,058

South Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents	47,285	288	14	4,200	550	6	3,500	1,575	56,560
Cotton Tents									
Huts	22,396	300	10	3,000	500	10	5,000	800	31,196
Cave									
Curved roof Construction	57,655	300	85	25,500	567	43	25,933	2,167	111,255
Flat roof Construction	51,149	300	64	19,275	500	36	17,750	4,000	92,174

South East Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents	63,304	300	13	3,900	500	4	2,000	3,150	72,354
Cotton Tents	25,685	300	9	2,700	500	3	1,500	1,600	31,485
Huts	34,640	300	18	5,400	1,000	6	6,000	2,500	48,540
Cave									
Curved roof Construction									
Flat roof Construction	138,231	300	161	48,250	719	73	51,233	7,133	244,848

West Region

Shelter Family	Total Material Cost	Unskilled Labour			Skilled Labour			Transport Cost	Total Cost
		Daily Rate	M/D	Total Cost	Daily Rate	M/D	Total Cost		
Black Tents									
Cotton Tents	20,627	350	30	10,325	500	4	2,000	1,925	34,877
Huts									
Cave									
Curved roof Construction	52,443	350	80	28,000	500	18	9,000	2,900	92,343
Flat roof Construction	99,421	350	127	44,406	688	77	41,625	4,988	190,440

SHELTER TYPE: Black Tent

Shelter Variation: Baluch Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	9
Unskilled labour (M/D)[2]	29
Construction time (days)	12
Shelter age (years)	7

Bills of Quantity[3]

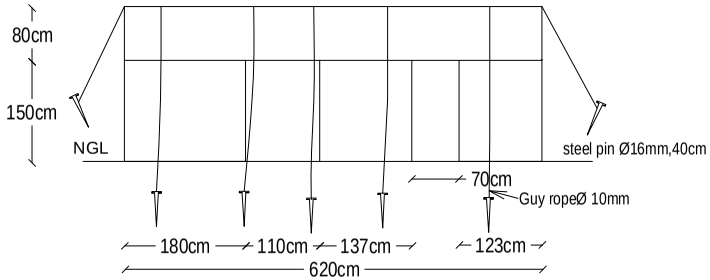
Shelter Variation Prevalence[4]

Materials

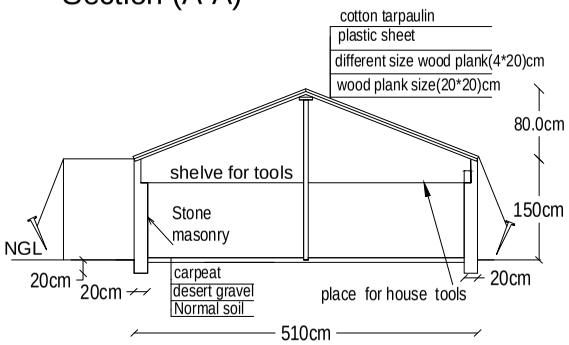
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	12	8		M^2	96	20	1,920
	Tarpaulin	10	6		M^2	40	125	5,000
Wood	Tent Pole	2.5	0.1		Pcs	1	150	150
	Bamboo Pole	3.5	0.07		Pcs	28	300	8,400
	Bamboo Pole	4	0.07		Pcs	4	350	1,400
	Wood Plank	6	0.2	0.2	Pcs	6	100	600
	Wood Plank	2.5	0.2	0.2	Pcs	28	100	2,800
Masonry	Goraghil				M^3	5	250	1,250
	Stone				M^3	30	150	4,500
	Soil				M^3	3	250	750
Rope	Guy Rope	80	0.01		M	80	12	960
	Wool tension band	22	0.02		M	25	100	2,500
Reeds	Straw				Kg	75	9	675
Other Materials	Steel Pin	0.4	0.016		Pcs	18	100	1,800
Materials Sub Total								32,705
Labour								
	Unskilled Labour				M/D^2	15	300	4,500
	Skilled Labour				M/D^2	3	500	1,500
Labour Sub Total								6,000
Transportation								
	Transportation				Lump sum			2,000
Total Cost								40,705

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

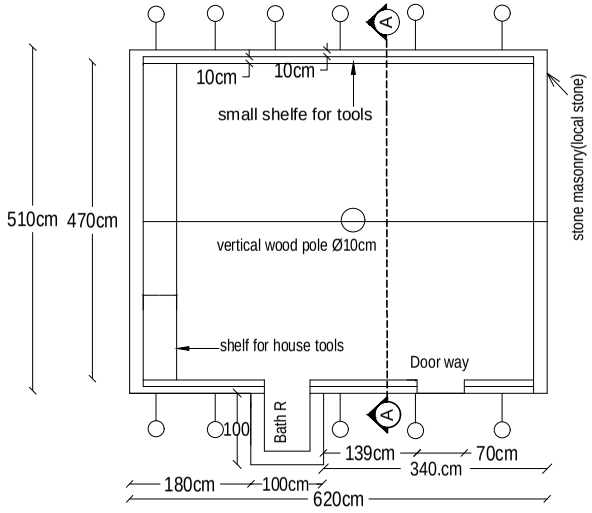
Front elevation



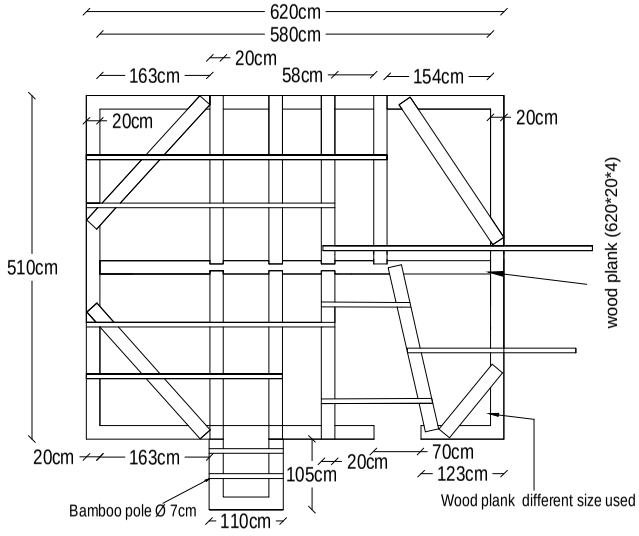
Section (A-A)



Floor plan



Roof plan



Shelter Type	Black Tent
Shelter Variation	Vaulted - Baluch
Project Name	Local Architecture
Province	Kandahar
District	Kandahar

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Black Tent

Shelter Variation: Brahui Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	9
Unskilled labour (M/D)[2]	20
Construction time (days)	13
Shelter age (years)	5

Bills of Quantity[3]

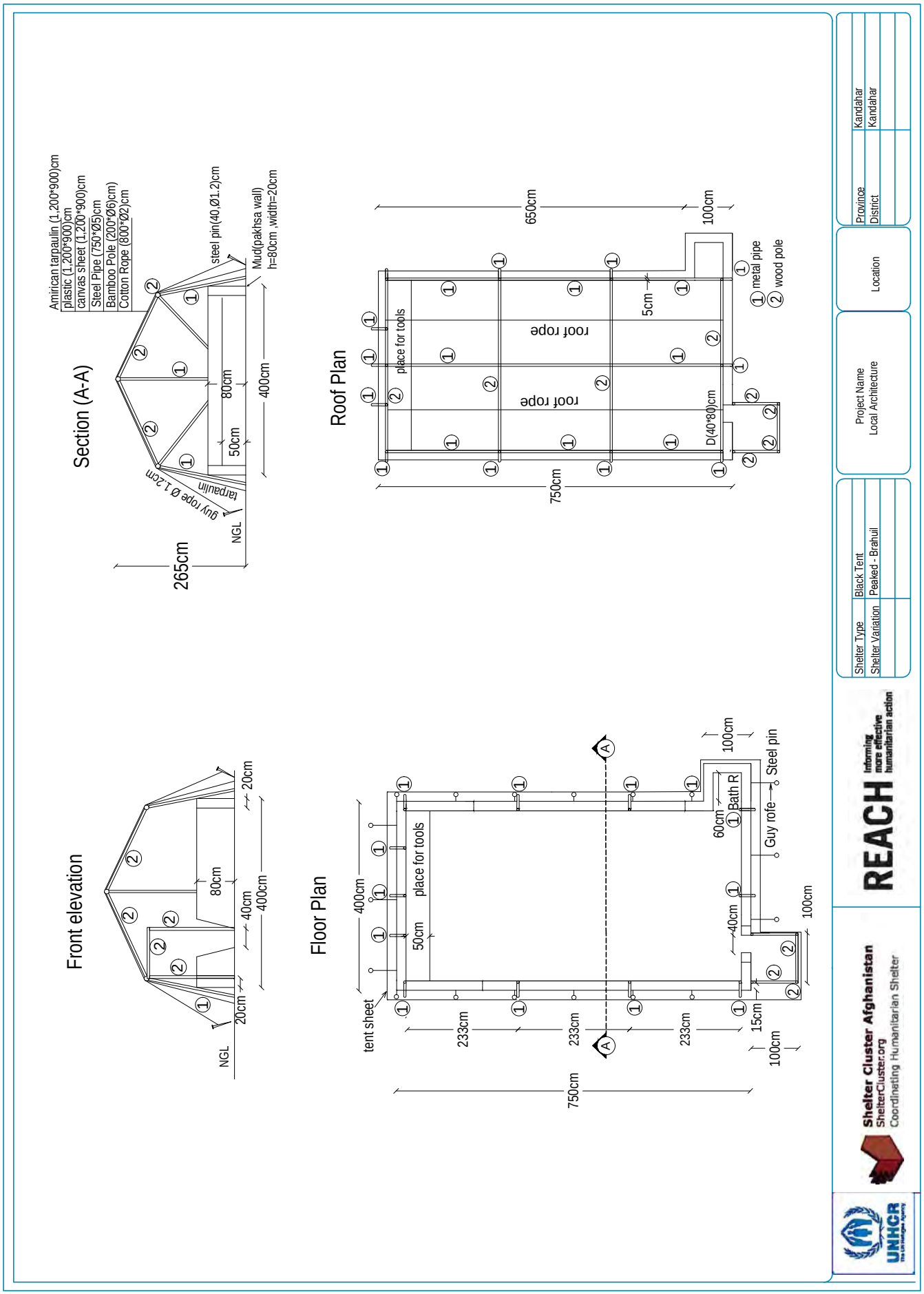
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	12	9		M^2	108	20	2,160
	American Tarpaulin	14	10		M^2	140	360	50,400
	Canvas	12	9		M^2	108	100	10,800
Wood	Wood Pole	1	0.06		Pcs	3	50	150
	Wood Pole	1.8	0.06		Pcs	4	70	280
Masonry	Goraghil	3.6	0.5	0.5	M^3	0.9	300	270
	Pakhsa	23.4	0.2	0.8	M^3	4	300	1,200
Rope	Guy Rope	50	0.012		M	50	10	500
	Wool tension band	80	0.02		M	50	16	800
Reeds	Straw				Kg	50	10	500
Other Materials	Steel Pin	0.4	0.025		Pcs	15	150	2,250
	Metal Pipe	1.8	0.05		Pcs	8	252	2,016
	Metal Pipe	7.05	0.05		Pcs	3	980	2,940
	Metal Pipe	1.85	0.05		Pcs	11	259	2,849
	Metal Pipe	2.65	0.05		Pcs	3	371	1,113
Materials Sub Total								78,228
Labour								
	Unskilled Labour				M/D^2	20	300	6,000
	Skilled Labour				M/D^2	10	700	7,000
Labour Sub Total								91,228
Transportation								
	Transportation				Lump sum			2,000
Total Cost								93,228

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Black Tent

Shelter Variation: Durrani Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	7
Unskilled labour (M/D)[2]	17
Construction time (days)	7
Shelter age (years)	4

Bills of Quantity[3]

Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	12	10		M^2	120	120	14,400
	Palas	12	10		M^2	120	150	18,000
Wood	Bamboo Pole	2.2	0.1		Pcs	1	80	80
	Bamboo Pole	2	0.08		Pcs	4	70	280
	Bamboo Pole	1.8	0.08		Pcs	10	65	650
Masonry	Kaghil	27	0.3		M^2	16.2	35	567
	Bricks (Sun-dried)	0.3	0.15	0.1	Pcs	222	2	444
	Soil				M^3	0.35	300	105
Rope	Guy Rope	40	0.008		M	60	12	720
	Wool tension band	40	0.01		M	40	30	1,200
Reeds	Straw				Kg	40	9	360
Other Materials	Steel Pin	0.4	0.016		Pcs	30	80	2,400
Materials Sub Total								39,206

Labour

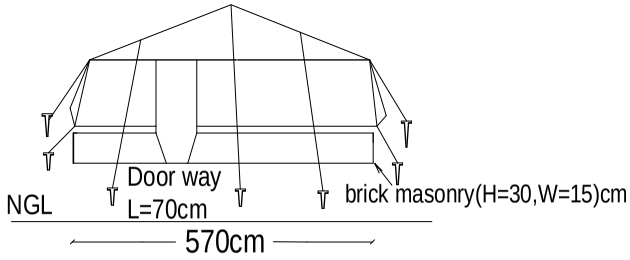
	Unskilled Labour				M/D[2]	6	250	1,500
	Skilled Labour				M/D[2]	3	500	1,500
Labour Sub Total								3,000

Transportation

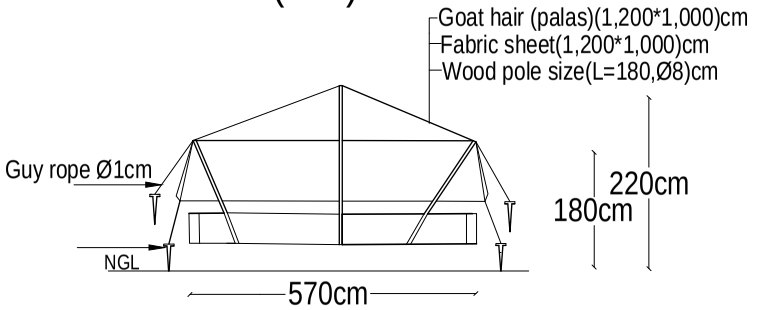
	Transportation				Lump sum			500
Total Cost								42,706

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

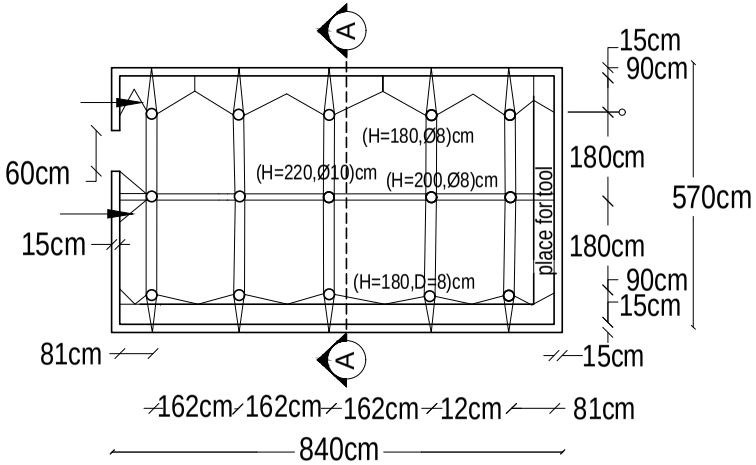
Front elevation



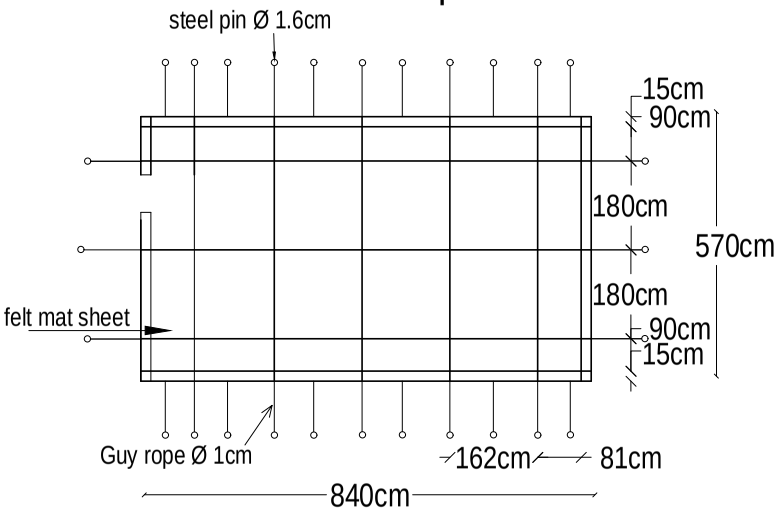
Section(A-A)



Floor Plan



Roof plan



Shelter Type	Black Tent
Shelter Variation	Vaulted - Durrani
Project Name	Local Architecture
Location	
Province	Kandahar
District	Kandahar

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Black Tent

Shelter Variation: Ghilzai Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	6
Unskilled labour (M/D)[2]	14
Construction time (days)	9
Shelter age (years)	6

Bills of Quantity[3]

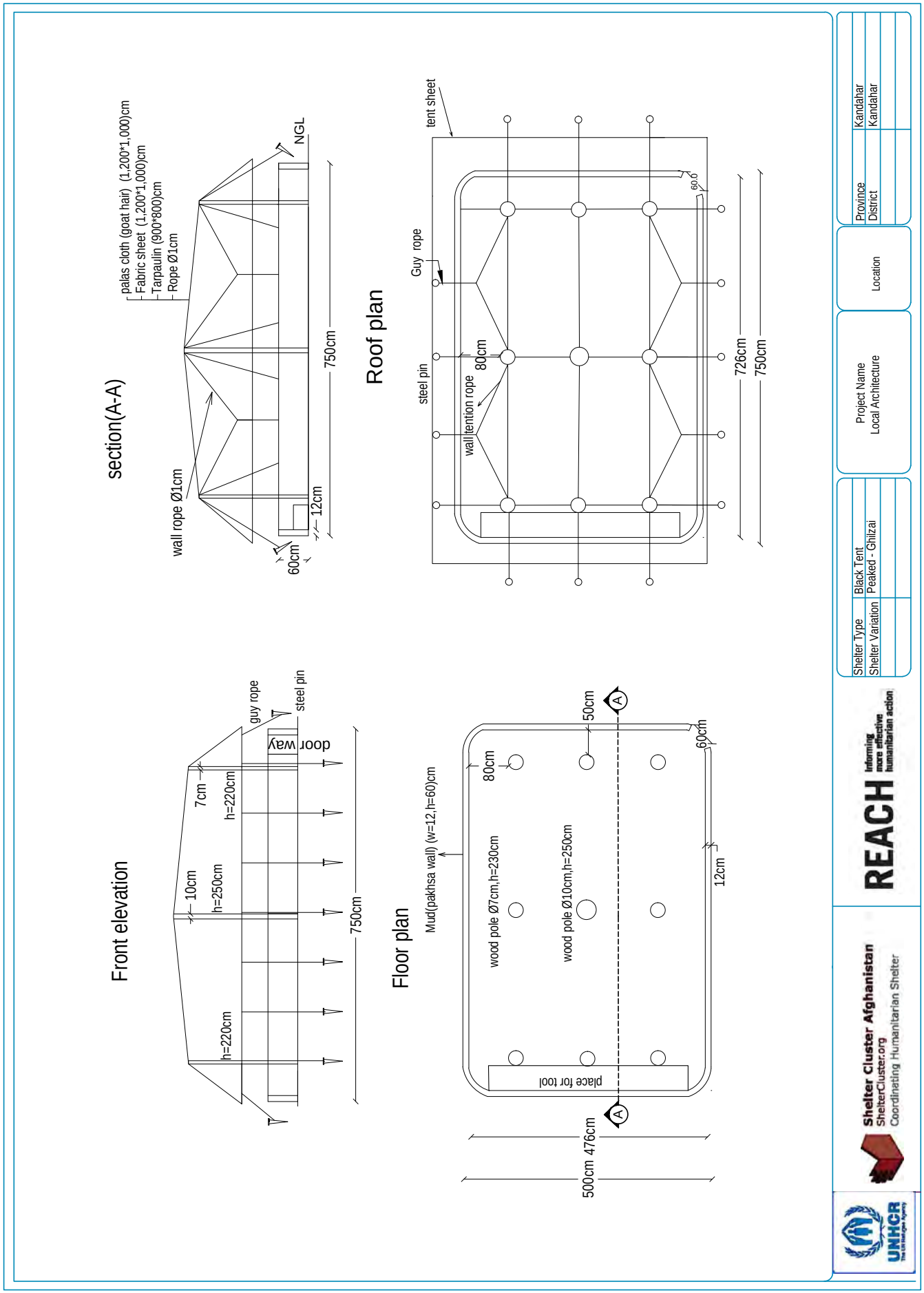
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	12	10		M^2	120	70	8,400
	Cotton Sheet	9	8		M^2	1	4,000	4,000
	Palas	12	10		M^2	120	160	19,200
Wood	Wood Pole	2.5	0.1		Pcs	1	200	200
	Wood Pole	2.3	0.07		Pcs	8	170	1,360
Masonry	Goraghil	4	0.5	0.3	M^3	0.6	300	180
	Kaghil	25	0.6	2	M^2	30	30	900
	Pakhsa	25	0.12	0.6	M^3	1.8	300	180
Rope	Guy Rope	60	0.008		M	60	12	720
	Wool tension band	50	0.01		M	50	16	800
Reeds	Straw				Kg	30	25	750
Other Materials	Steel Pin	0.4	0.016		Pcs	20	90	1,800
	Nails				Kg	0.5	300	150
Materials Sub Total								39,000
Labour								
	Unskilled Labour				M/D[2]	16	300	4,800
	Skilled Labour				M/D[2]	8	500	400
Labour Sub Total								8,800
Transportation								
	Transportation				Lump sum			
Total Cost								47,800

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Cotton Tent

Shelter Variation: Herati Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	9
Unskilled labour (M/D)[2]	24
Construction time (days)	11
Shelter age (years)	2

Bills of Quantity[3]

Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	4	3		M^2	12	35	420
	Cotton Sheet	7.5	7.1		M^2	53.25	100	5,325
	Felt	5	1		M^2	5	190	950
Wood	Wood Lattice	157	0.1		Pcs	66	46	3,036
	Door		0.73	1.6	Pcs	1	1,200	1,200
Masonry	Pakhsa	21	3	0.4	M^3	25.2	450	11,340
	Bricks (Fired)	0.2	0.1	0.05	Pcs	0.3	1700	510
	Cement				Bag	2	250	500
	Sand				M^3	0.3	500	150
Rope	Twine	32			M	32	35	1,120
Other Materials	Nails				Kg	4	250	1,000
	Corner Brace				Pcs	12	200	2,400
	Metal Pipe	1.7	0.1		Pcs	46	120	5,520
	Metal Pipe	2	0.1		Pcs	4	150	600
Materials Sub Total								34,071

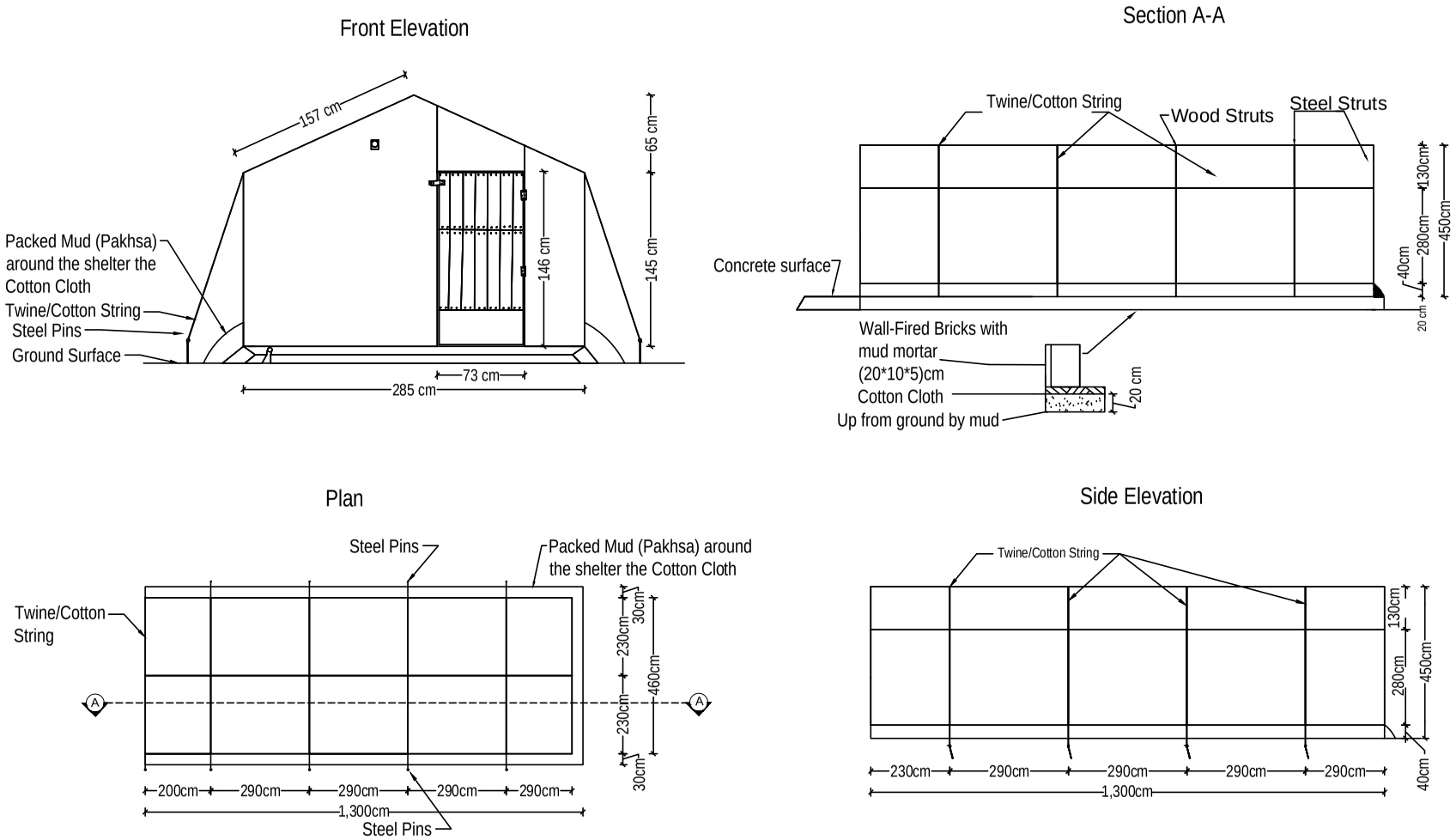
Labour

	Unskilled Labour				M/D[2]	41	350	14,350
	Skilled Labour				M/D[2]	2	500	1,000
Labour Sub Total								15,350

Transportation

	Transportation				Lump sum			2,800
Total Cost								52,221

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.



Shelter Type	Cotton Tent
Shelter Variation	Herati Tent

Project Name
Local Architecture

Location

Province	Herat
District	Injil

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Cotton Tent

Shelter Variation: Jat Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	4
Unskilled labour (M/D)[2]	13
Construction time (days)	5
Shelter age (years)	4

Bills of Quantity[3]

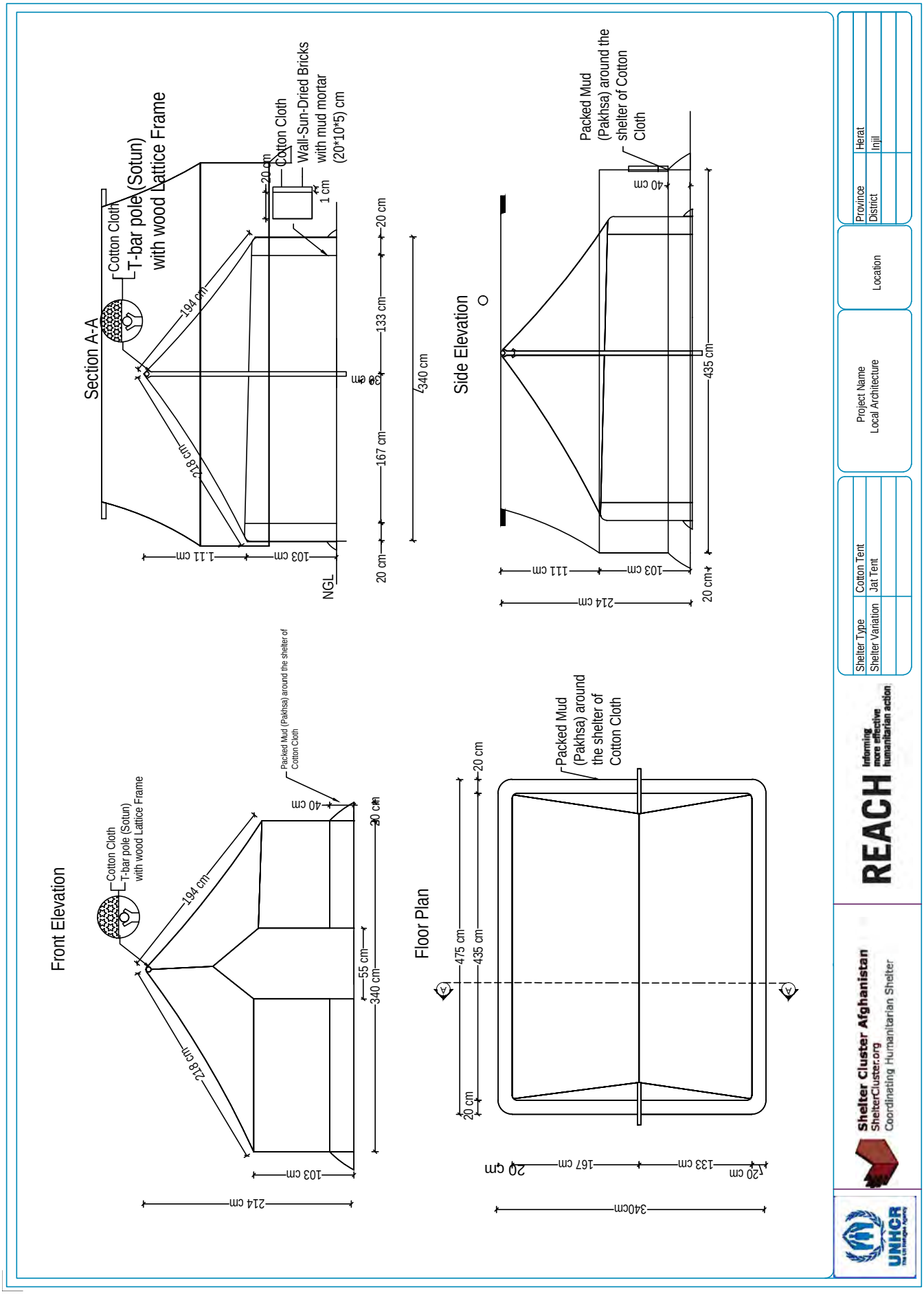
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Cotton Sheet	12.53	3.2		M^2	40	80	3,208
Wood	Wood Pole	5			Pcs	5	112	560
	Wood Lattice	4.9	0.1		Pcs	4.9	95	466
Masonry	Goraghil	6	0.8	0.2	M^3	0.96	400	384
	Pakhsa	2.1	0.2	0.7	M^3	0.3	400	116
Materials Sub Total								4,733
Labour								
	Unskilled Labour				M/D^2	18	350	6,300
	Skilled Labour				M/D^2	6	500	3,000
Labour Sub Total								9,300
Transportation								
	Transportation				Lump sum			200
Total Cost								14,233

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Cotton Tent

Shelter Variation: Jugi Tent

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	3
Unskilled labour (M/D)[2]	8
Construction time (days)	4
Shelter age (years)	7

Bills of Quantity[3]

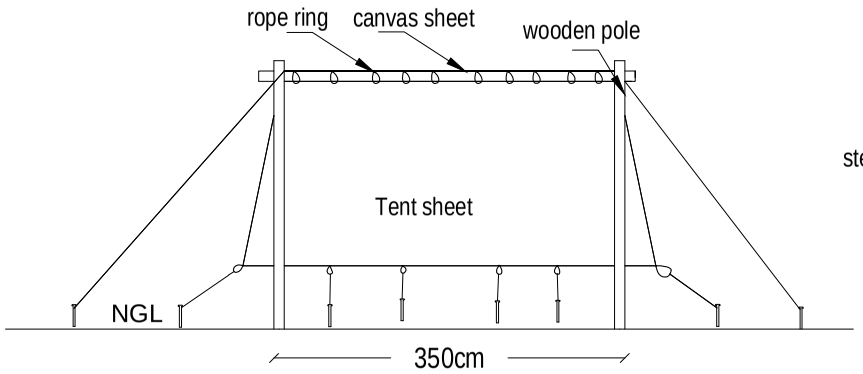
Shelter Variation Prevalence[4]

Materials

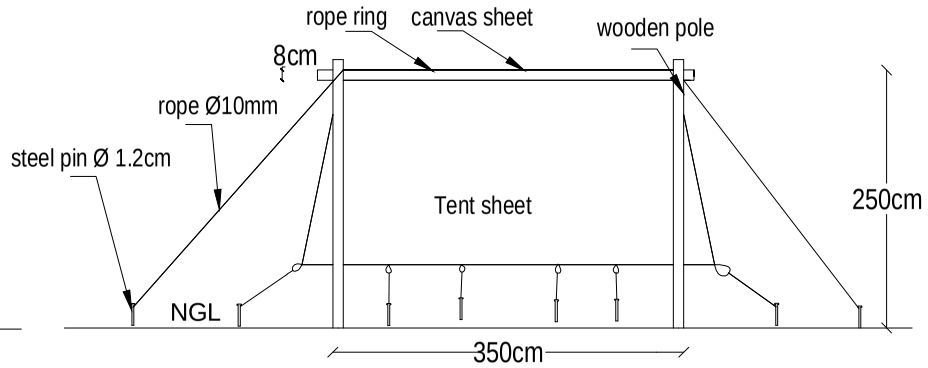
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Cotton Sheet				M^2	30	300	9,000
Wood	Bamboo Pole	3.5	0.08		Pcs	1	350	350
	Wood Pole	2.5	0.08		Pcs	4	140	560
Rope	Twine				M	1	500	500
	Cotton Rope	40	0.01		M	40	25	1,000
Other Materials	Steel Pin	0.4	0.012		Pcs	12	60	720
Materials Sub Total								12,130
Labour								
	Unskilled Labour				M/D^2	6	300	1,800
	Skilled Labour				M/D^2	3	700	2,100
Labour Sub Total								3,900
Transportation								
	Transportation				Lump sum			1800
Total Cost								17,830

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

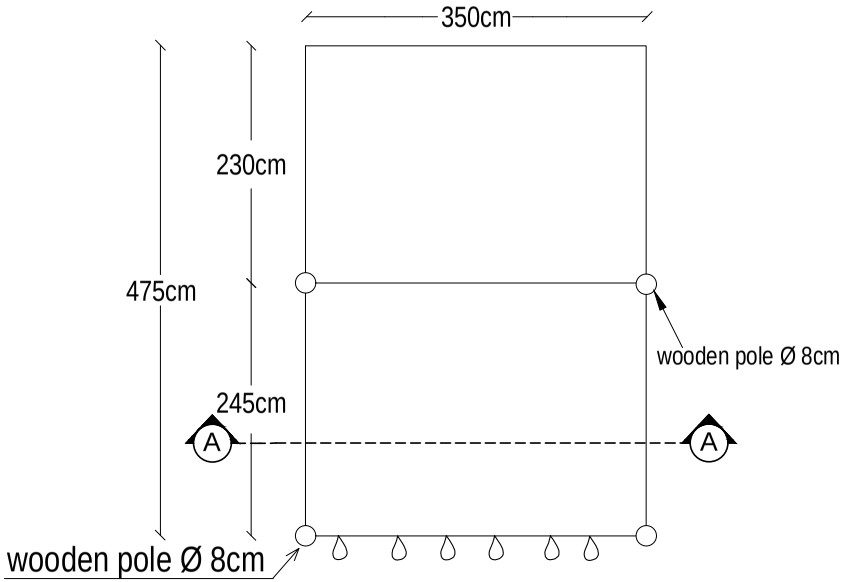
Front elevation



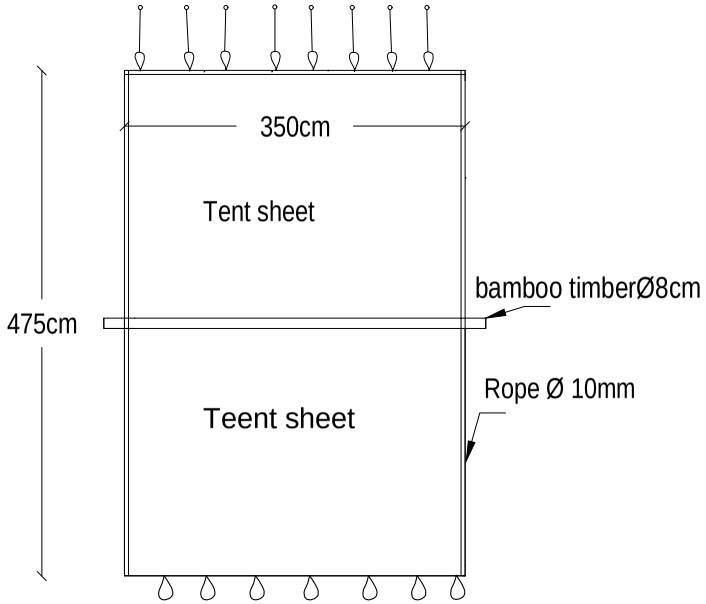
Section(A-A)



Floor plan



Roof plan



Shelter Cluster Afghanistan
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REACH Informing more effective humanitarian action

Shelter Type	Cotton Tent
Shelter Variation	Jugi tent

Project Name
Local Architecture

Location

Province	Nangarhar
District	Behsud

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Huts

Shelter Variation: Chapari

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	4
Unskilled labour (M/D)[2]	8
Construction time (days)	12
Shelter age (years)	3

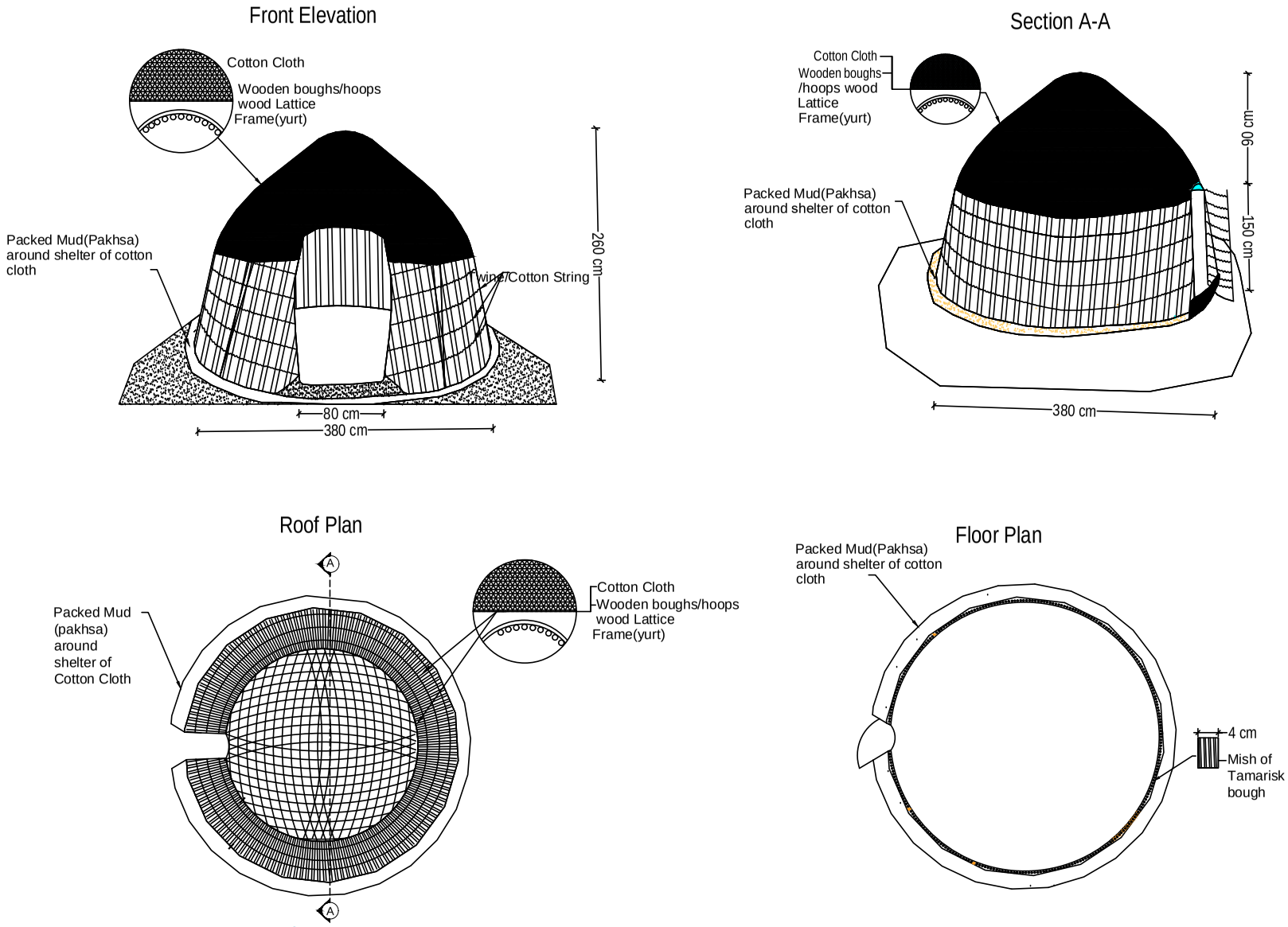
Bills of Quantity[3]

Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	7	4		M^2	28	50	1,400
	Canvas	7	4		M^2	28	30	840
Wood	Wood Bough	11.3	1.5		Pcs	16.959	200	3,391
	Wood Struts	2.6			Pcs	40	70	2,800
Masonry	Pakhsa	5	5	0.1	M^3	2.5	100	250
	Site Work	5	5		M^2	25	10	250
Rope	Guy Rope				M	20	20	400
Reeds	Straw				Kg	1	250	250
					Materials Sub Total			9,581
					Labour			
	Unskilled Labour				M/D[2]	4	400	1,600
	Skilled Labour				M/D[2]	3	600	1,800
	Skilled Labour				M/D[2]	1	600	600
					Labour Sub Total			4,000
					Transportation			
	Transportation				Lump sum			1,200
					Total Cost			14,181

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.



Shelter Type	Huts
Shelter Variation	Circular Chapari w/o Center Pole

Project Name: Local Architecture

Location

Province	Balkh
District	Khulm

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Huts

Shelter Variation: Kapa

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	10
Unskilled labour (M/D)[2]	26
Construction time (days)	10
Shelter age (years)	5

Bills of Quantity

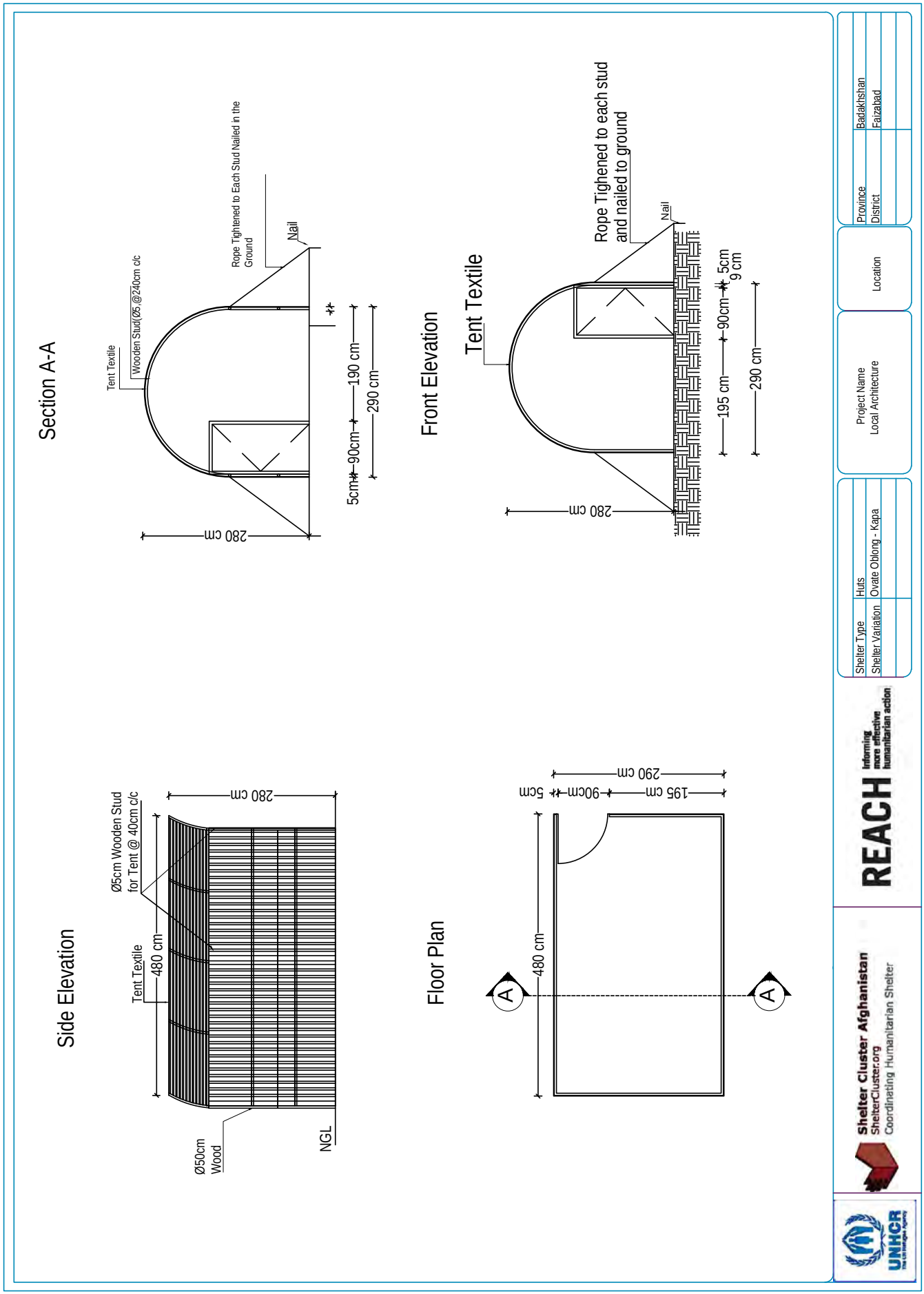
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	7	4		M^2	28	90	2,520
	Canvas	7	4		M^2	28	50	1,400
Wood	Wood Bough	2			Pcs	23	100	2,300
	Wood Bough	2			Pcs	40	70	2,800
	Wood Struts	2.5			Pcs	50	30	1,500
Masonry	Pakhsa	6	4	0.1	M^3	2.4	100	240
	Cement				Bag	4	400	1,600
	Site Work	5	3		M^2	15	10	150
Rope	Guy Rope	10			M	10	18	180
Reeds	Straw				Kg	1	300	300
Other Materials	Nails				Kg	8	10	80
	Rain Gutter	0.5	0.1	0.05	Pcs	4	50	200
Materials Sub Total								13,270
Labour								
	Unskilled Labour				M/D^2	9	50	450
	Skilled Labour				M/D^2	7	150	1,050
Labour Sub Total								1,500
Transportation								
	Transportation				Lump sum			350
Total Cost								13,110

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Huts

Shelter Variation: Kapa-i-Arab

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	6
Unskilled labour (M/D)[2]	11
Construction time (days)	10
Shelter age (years)	5

Bills of Quantity[3]

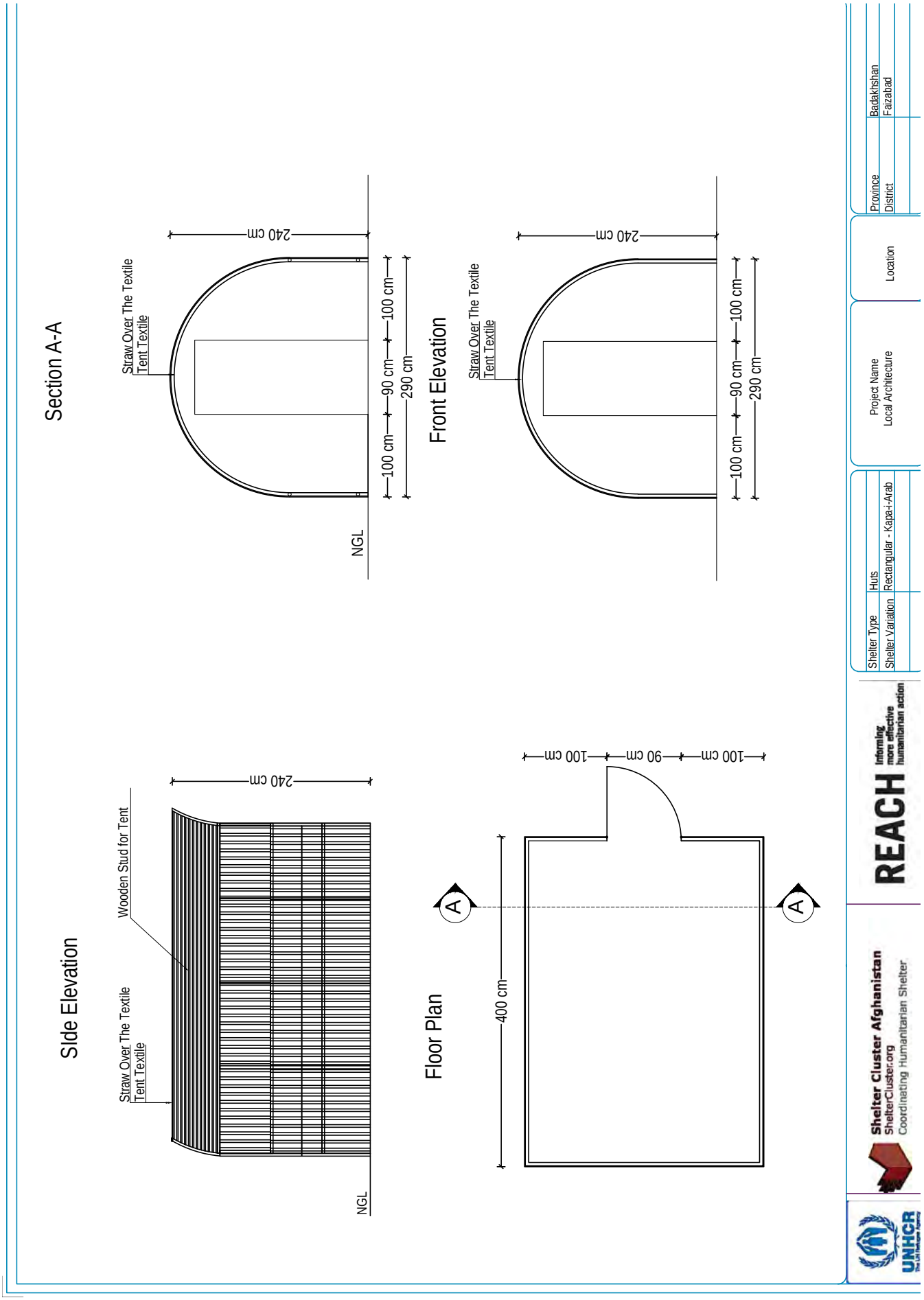
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	8	8		M^2	64	20	1,280
	Canvas	8	8		M^2	64	30	1,920
Wood	Wood Bough	2			Pcs	40	70	2,800
	Wood Struts	2.4			Pcs	50	75	3,750
Masonry	Pakhsa	10	8	0.1	M^3	8	500	4,000
	Cement				Bag	4	400	1,600
	Site Work	5	6		M^2	30	30	900
Rope	Twine	15	0.02		M	30	30	900
Reeds	Straw				Kg	1	250	250
				Materials Sub Total				17,400
				Labour				
	Unskilled Labour				M/D^2	3	400	1,200
	Skilled Labour				M/D^2	2	600	1,200
	Skilled Labour				M/D^2	1	600	600
				Labour Sub Total				3,000
				Transportation				
	Transportation				Lump sum			400
				Total Cost				20,800

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Huts

Shelter Variation: Kodai

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	13
Unskilled labour (M/D)[2]	24
Construction time (days)	15
Shelter age (years)	6

Bills of Quantity[3]

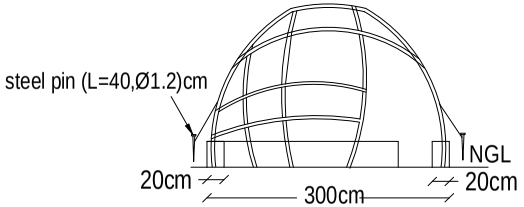
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	6	7		M^2	42	30	1,260
	Tarpaulin	6	7		M^2	42	200	8,400
	Cotton Sheet	7	7		M^2	1	20,000	20,000
Wood	Wood Pole	5	0.05		Pcs	20	50	1,000
	Wood Pole	2.7	0.04		Pcs	12	60	720
	Wood Pole	2	0.04		Pcs	5	45	225
	Wood Pole	2.5	0.04		Pcs	40	200	8,000
Masonry	Pakhsa	17.5	0.2	0.3	M^3	1.05	300	315
Rope	Guy Rope	50	0.01		M	50	16	800
Other Materials	Metal Pipe	5	0.07		Pcs	12	60	720
Materials Sub Total								34,640
Labour								
	Unskilled Labour				M/D^2	18	300	5,400
	Skilled Labour				M/D^2	6	1,000	6,000
Labour Sub Total								11,400
Transportation								
	Transportation				Lump sum			
Total Cost								46,040

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Front Elevation



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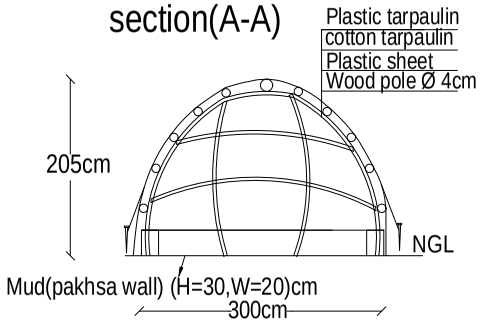
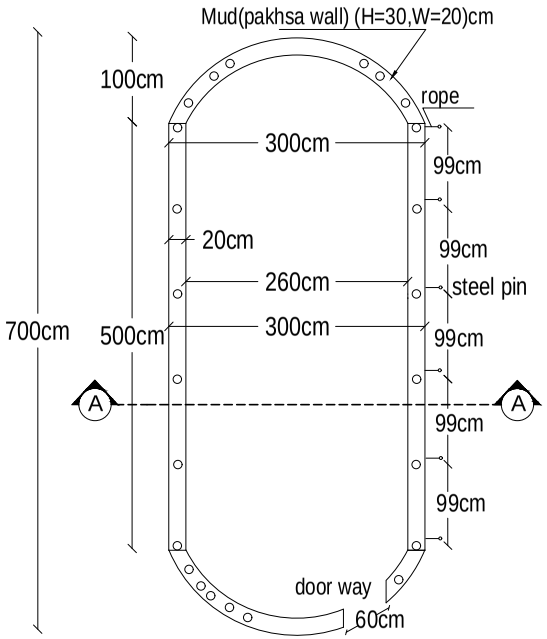
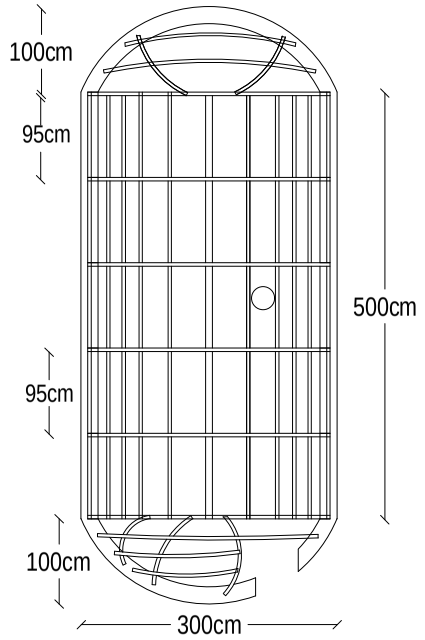


Floor plan



Roof plan



Shelter Type	Huts
Shelter Variation	Ovate Oblong - Kodai

Project Name
Local Architecture

Location

Province	Khost
District	Matun

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Huts

Shelter Variation: Lacheq

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	6
Unskilled labour (M/D)[2]	12
Construction time (days)	26
Shelter age (years)	27

Bills of Quantity[3]

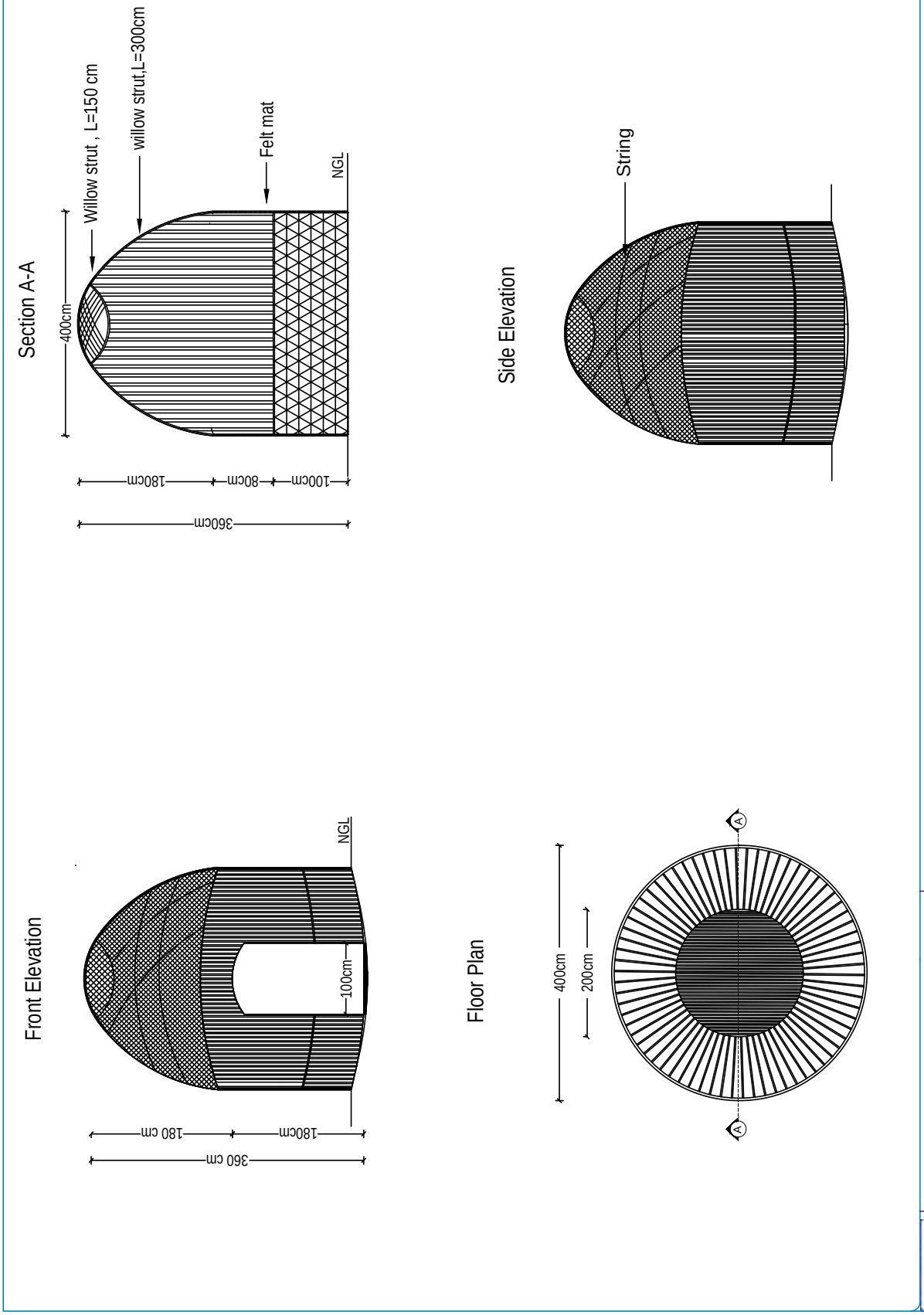
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Felt	42	3		M^2	126	84	10,584
	Palas	12	1.8		M^2	21.6	120	2,592
Wood	Wood Bough	4			Pcs	3	80	240
	Wood Struts	3			Pcs	70	50	3,500
	Wood Struts	1.5			Pcs	34	39	1,020
	Wood Struts	1.9			Pcs	128	40	5,120
Rope	Guy Rope	10			M	100	10	1,000
	Rag Belt	13			M	13	100	1,300
	Wool tension band	13	0.01		M	13	60	780
	Wool tension band	22	0.02		M	22	40	880
	Wool tension band	12	0.02		M	12	60	720
	Wool tension band	1.5			M	70	40	2,800
Materials Sub Total								30,536
Labour								
	Unskilled Labour				M/D^2	12	200	2,400
	Skilled Labour				M/D^2	12	800	9,600
Labour Sub Total								12,000
Transportation								
	Transportation				Lump sum			
Total Cost								43,336

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Cave

Shelter Variation: Samoch

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	38
Unskilled labour (M/D)[2]	74
Construction time (days)	56
Shelter age (years)	5

Bills of Quantity[3]

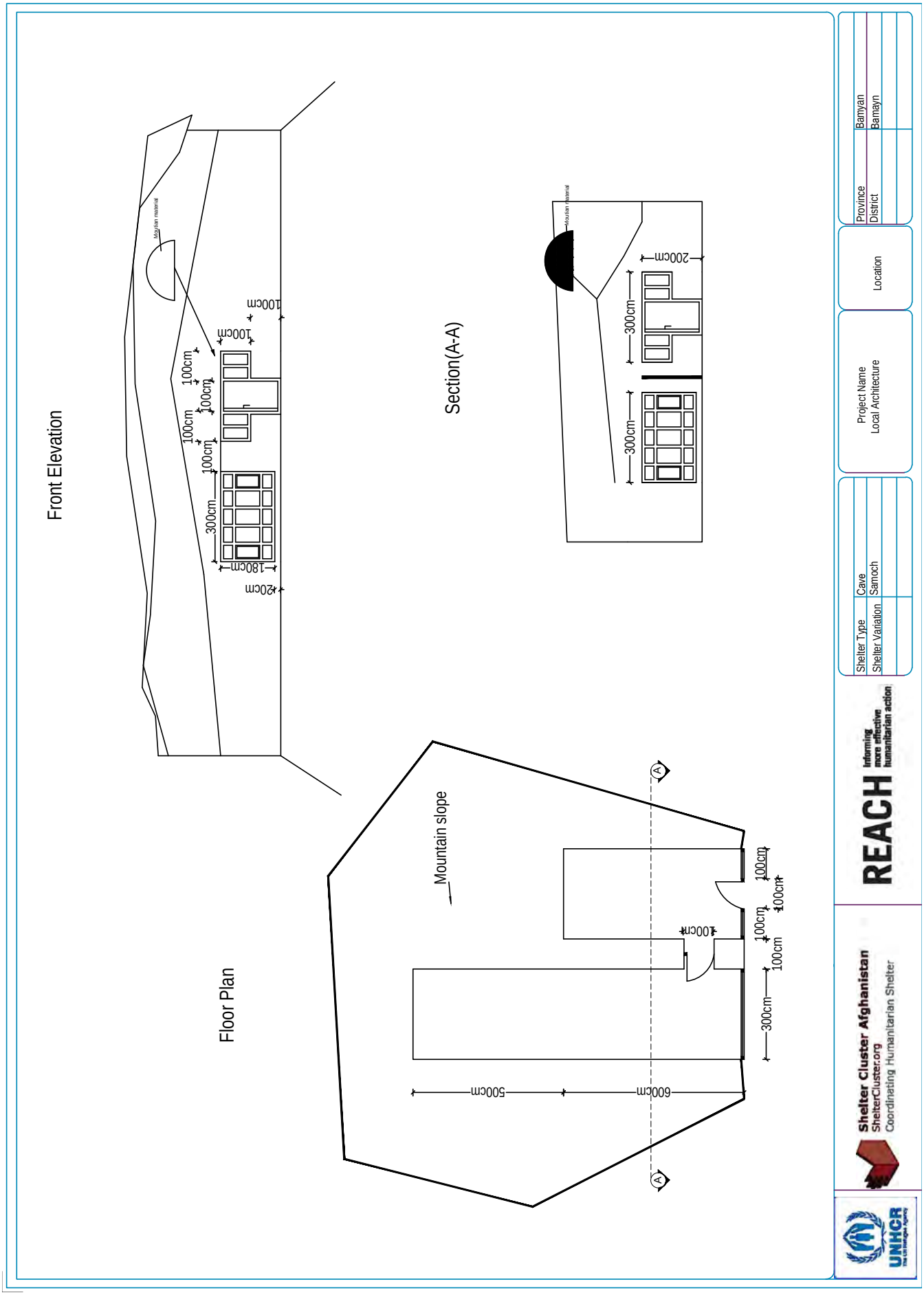
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Wood	Door		2	3	Pcs	1	6,000	6,000
	Door		1	2	Pcs	1	4,000	4,000
Masonry	Kaghil	101	2	0.03	M^2	6	233	1,414
	Gypsum				Bag	70	90	6,300
Reeds	Straw				Kg	2	500	1,000
Other Materials	Window		2	3	Pcs	1	6,000	6,000
	Glass		2.5	4	M^2	10	300	3,000
Materials Sub Total								27,714
Labour								
	Unskilled Labour				M/D^2	90	350	31,500
	Skilled Labour				M/D^2	90	800	72,000
Labour Sub Total								103,500
Transportation								
	Transportation				Lump sum			2000
Total Cost								133,214

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Curved Roof

Shelter Variation: Fired Brick and Wood Beams

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	21
Unskilled labour (M/D)[2]	55
Construction time (days)	21
Shelter age (years)	10

Shelter Variation Prevalence[4]

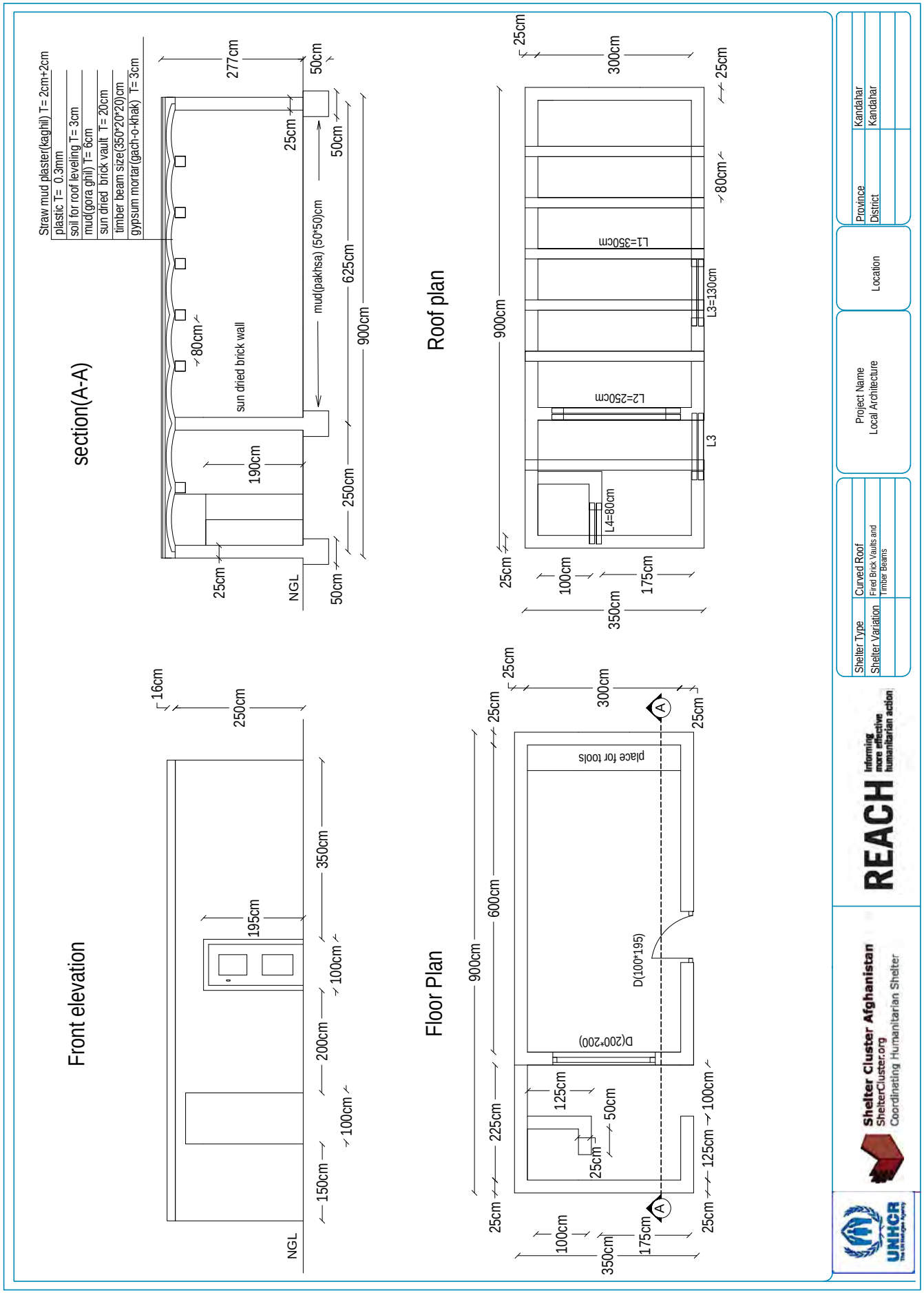
Bills of Quantity[3]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	9	4		M^2	36	60	2,160
Wood	Wood Plank	6	0.12	0.025	Pcs	2	400	800
	Timber	3.5	0.2	0.2	Pcs	6	500	3,000
	Timber	2.5	0.12	0.15	Pcs	2	450	900
	Timber	1.3	0.12	0.15	Pcs	4	300	1,200
	Timber	0.8	0.12	0.15	Pcs	2	220	440
	Door		1	1.95	Pcs	1	3,500	3,500
Masonry	Goraghil	9	3.5	0.06	M^3	1.89	300	567
	Kaghil				M^2	177	25	4,425
	Clay				M^3	5.28	300	1,584
	Gypsum				Bag	25	160	4,000
	Pakhsa	26.5	0.5	0.5	M^3	6.625	300	1,989
	Bricks (Sun-dried)	0.22	0.12	0.07	Pcs	6,500	2	13,000
	Bricks (Fired)	0.15	0.15	0.03	Pcs	500	5	2,500
	Cement				Bag	4	300	1,200
	Soil				M^3	1.27	300	381
Reeds	Straw				Kg	150	12	1,800
Other Materials	Rain Gutter	0.5	0.1	0.05	Pcs	2	100	200
	Window		2	2	Pcs	1	6,000	6,000
	Cable	10	0.006		M	1	3,000	3,000
Materials Sub Total								52,646
Labour								
	Unskilled Labour				M/D^2	45	300	13,500
	Skilled Labour				M/D^2	28	600	16,800
Labour Sub Total								30,300
Transportation								
	Transportation				Lump sum			3,000
Total Cost								85,946

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Curved Roof

Shelter Variation: Gumbazi

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	24
Unskilled labour (M/D)[2]	64
Construction time (days)	24
Shelter age (years)	19

Bills of Quantity

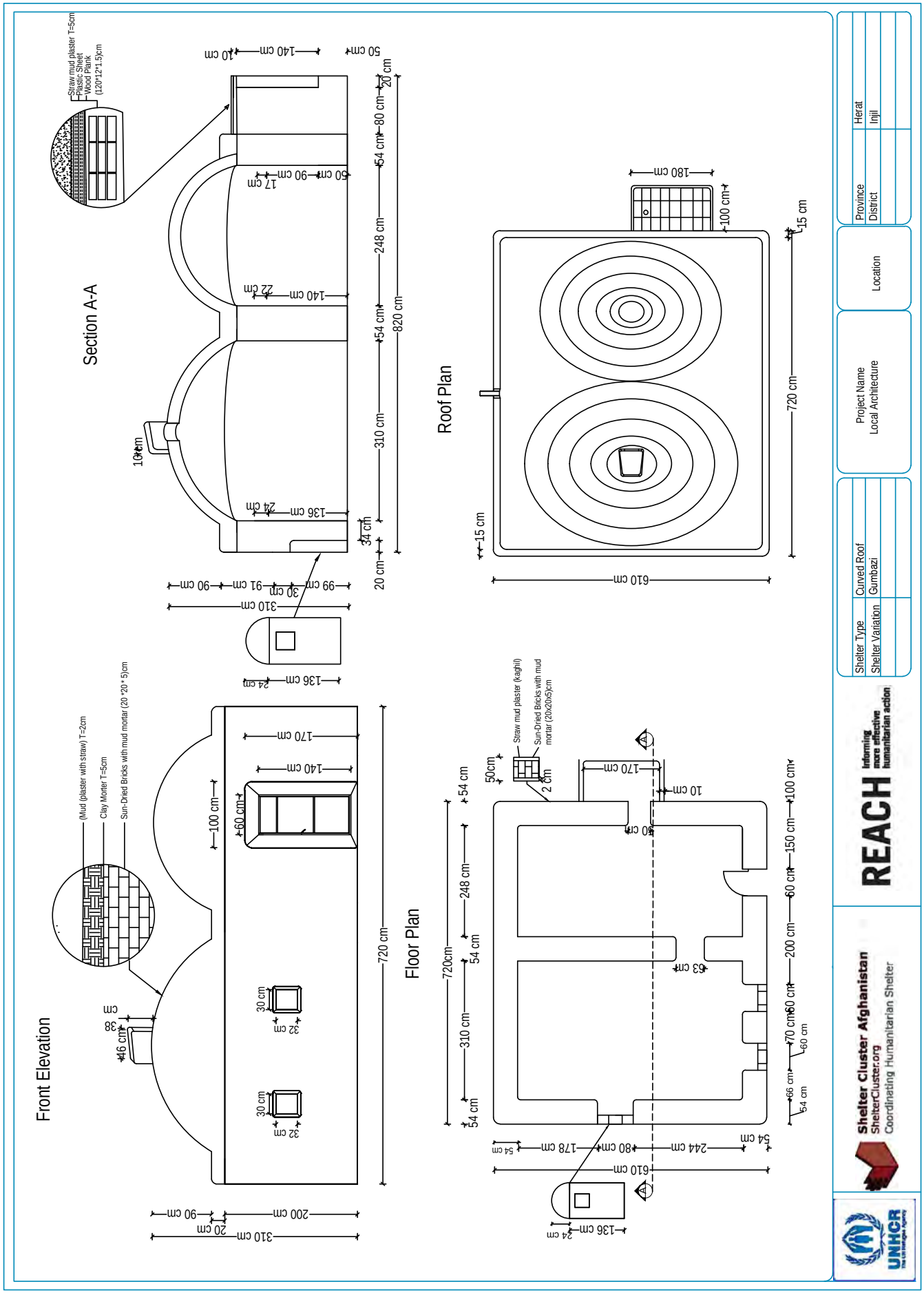
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	18	3		M^2	54	35	1,890
Wood	Wood Plank	1.2	0.12	0.015	Pcs	23	60	1,380
	Door		0.6	1.4	Pcs	1	2,400	2,400
Masonry	Kaghil	67.5	2	0.03	M^2	4.05	1,200	4,860
	Clay	36.3	4	0.05	M^3	7.26	700	5,082
	Gypsum				Bag	1	210	210
	Pakhsa	37	0.5	2	M^3	37	700	25,900
	Bricks (Sun-dried)	0.2	0.2	0.05	Pcs	5	1,600	8,755
Other Materials	Rain Gutter	0.5	0.1	0.05	Pcs	1	100	100
	Window		0.3	0.32	Pcs	2	350	700
	Glass		1.5	1	M^2	1.5	430	645
Materials Sub Total								51,922
Labour								
	Unskilled Labour				M/D[2]	80	350	28,000
	Skilled Labour				M/D[2]	18	500	9,000
Labour Sub Total								37,000
Transportation								
	Transportation				Lump sum			2,900
Total Cost								91,822

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Curved Roof

Shelter Variation: Tazar

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	24
Unskilled labour (M/D)[2]	53
Construction time (days)	24
Shelter age (years)	26

Bills of Quantity[3]

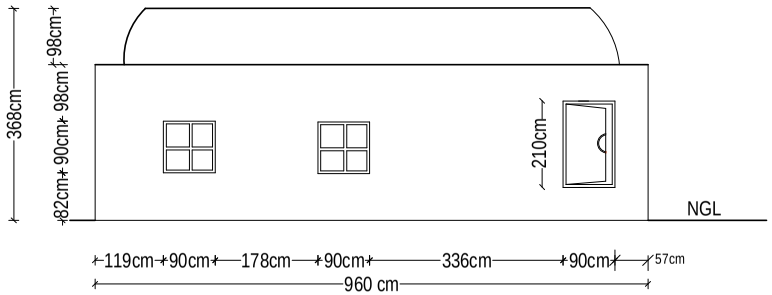
Shelter Variation Prevalence[4]

Materials

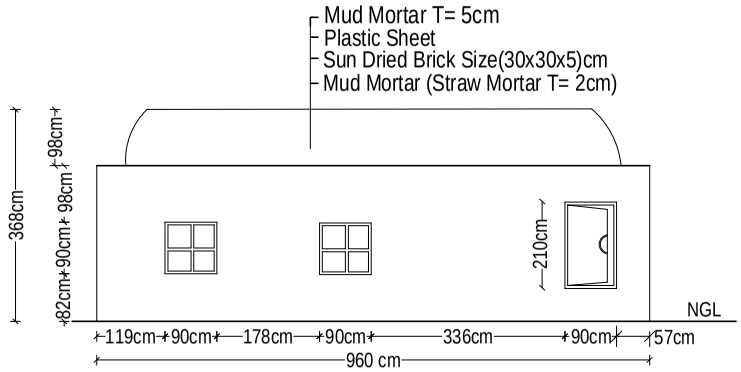
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	6.6	1.5		M^2	9.9	35	347
Wood	Wood Pole	2	0.15		Pcs	40	200	8,000
	Door				Pcs	2	2,500	5,000
Masonry	Kaghil	40	4	0.03	M^2	4.8	300	1,440
	Clay				M^3	34.5	300	10,350
	Pakhsa	9.6	4.3	0.1	M^3	4.128	300	1,238
	Bricks (Sun-dried)	0.3	0.3	0.05	Pcs	20,000	2	40,000
Reeds	Straw				Kg	4	200	800
Other Materials	Rain Gutter				Pcs	4	200	800
	Window				Pcs	3	2,500	7,500
	Glass		0.5	0.7	M^2	0.35	500	175
Materials Sub Total								75,650
Labour								
	Unskilled Labour				M/D[2]	60	300	18,000
	Skilled Labour				M/D[2]	22	800	17,600
Labour Sub Total								35,600
Transportation								
	Transportation				Lump sum			3000
Total Cost								114,250

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

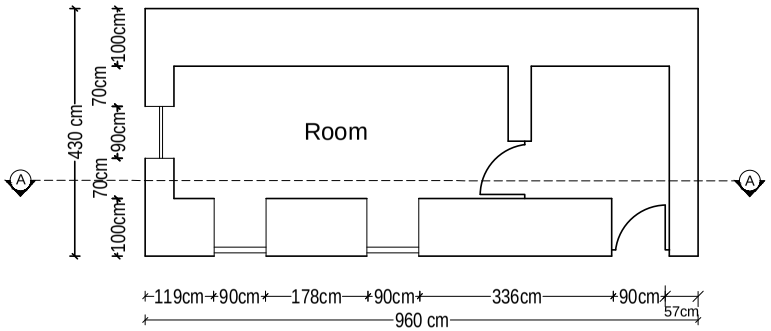
Front Elevation



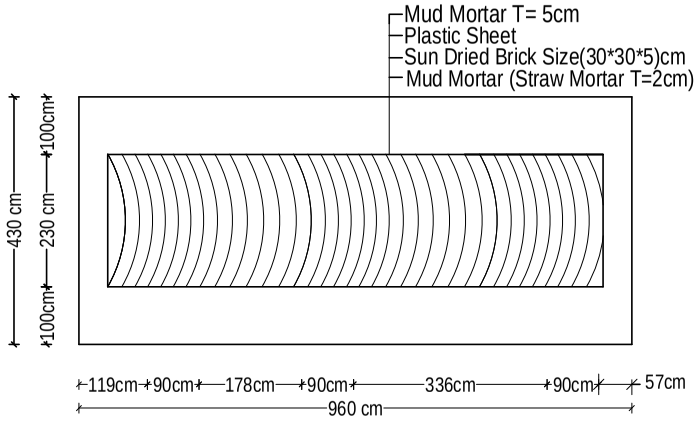
Section A-A



Floor Plan



Roof Plan



Shelter Type	Curved Roof
Shelter Variation	Tazar

Project Name
Local Architecture

Location

Province	Balkh
District	Khulm

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Brick and Wood Frame

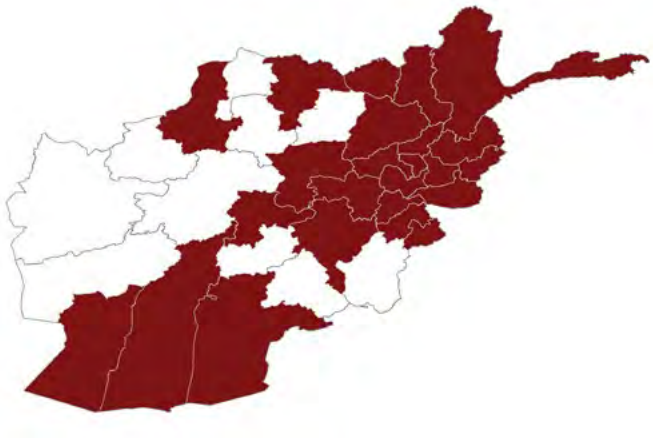
Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	28
Unskilled labour (M/D)[2]	64
Construction time (days)	39
Shelter age (years)	36

Bills of Quantity[3]

Shelter Variation Prevalence[4]

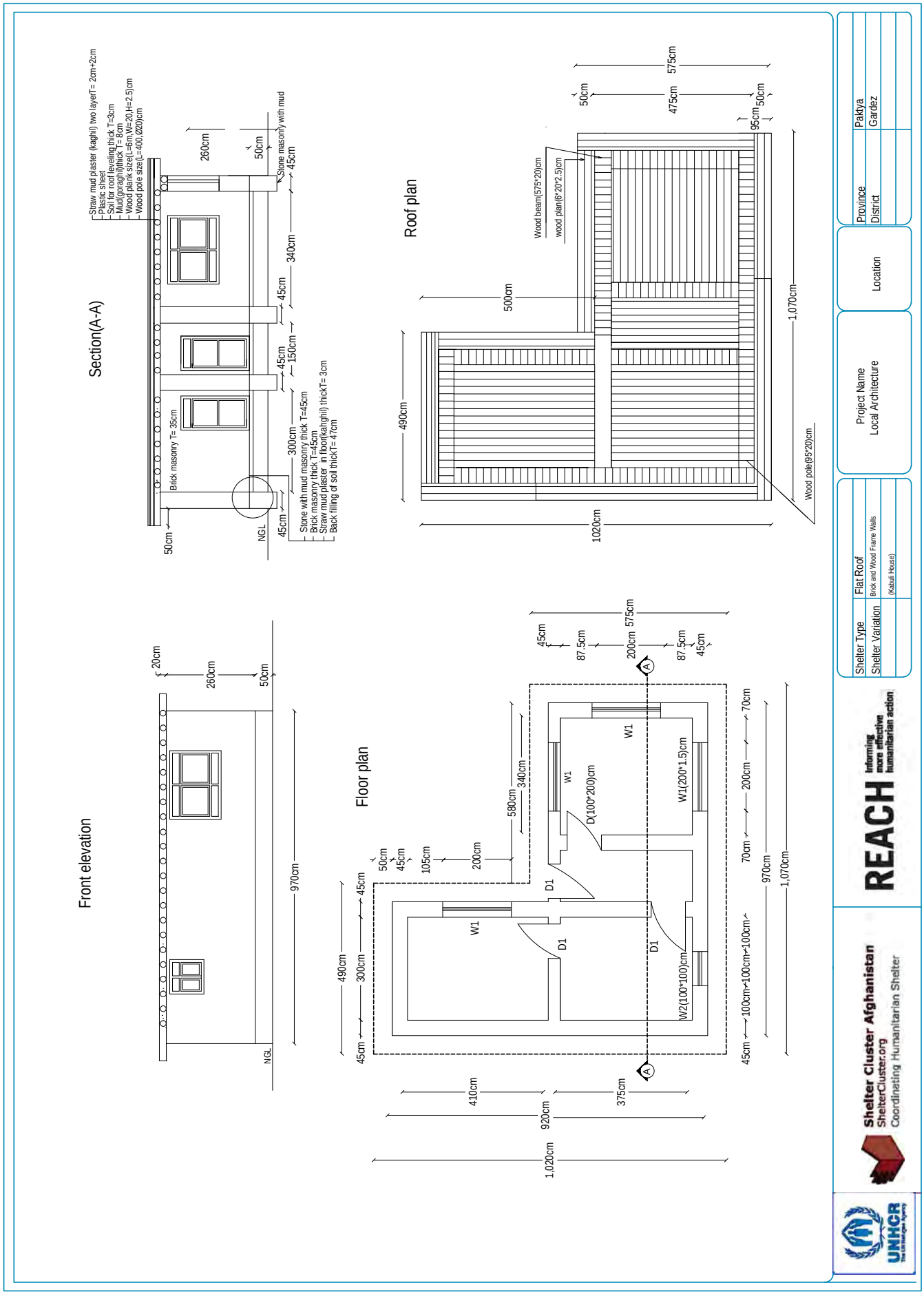


Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Parachute Sheet				M^2	81.6	50	4,080
Wood	Wood Plank	3.75	0.2	0.025	Pcs	400	23	9,000
	Wood Plank	3.4	0.2	0.025	Pcs	360	18.75	6,750
	Wood Plank	4.1	0.2	0.025	Pcs	440	15	6,600
	Wood Plank	6	0.2	0.025	Pcs	16.5	550	9,075
	Wood Pole	5.45	0.2		Pcs	9	200	1,800
	Wood Pole	4.9	0.2		Pcs	10	180	1,800
	Wood Pole	5.75	0.2		Pcs	9	230	2,070
	Wood Pole	0.95	0.2		Pcs	31	70	2,170
	Door		1	2	Pcs	3	5,000	15,000
Masonry	Goraghil				M^3	29.22	300	8,766
	Kaghil				M^2	105.08	40	4,203
	Bricks (Sun-dried)	0.22	0.11	0.07	Pcs	23,655	2	47,310
	Stone				M^3	21.5	250	5,375
	Site Work				M^2	81.6	100	8,160
Other Materials	Window		1	1	Pcs	1	3,500	3,500
	Window		2	1.5	Pcs	4	7,000	28,000
	Glass				M^2	15	400	6,000
	Water				Tanker	40	700	28,000
Materials Sub Total								197,659
Labour								
	Unskilled Labour				M/D^2	210	300	63,000
	Skilled Labour				M/D^2	70	700	49,000
Labour Sub Total								112,000
Transportation								
	Transportation				Lump sum			
Total Cost								309,659

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Concrete Block and Mud

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	23
Unskilled labour (M/D)[2]	51
Construction time (days)	50
Shelter age (years)	16

Shelter Variation Prevalence[4]

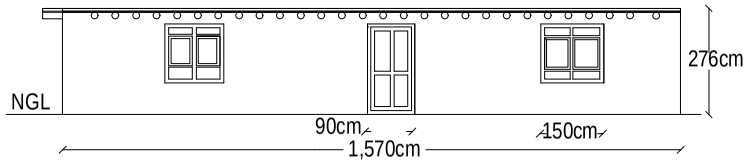
Bills of Quantity[3]

Materials

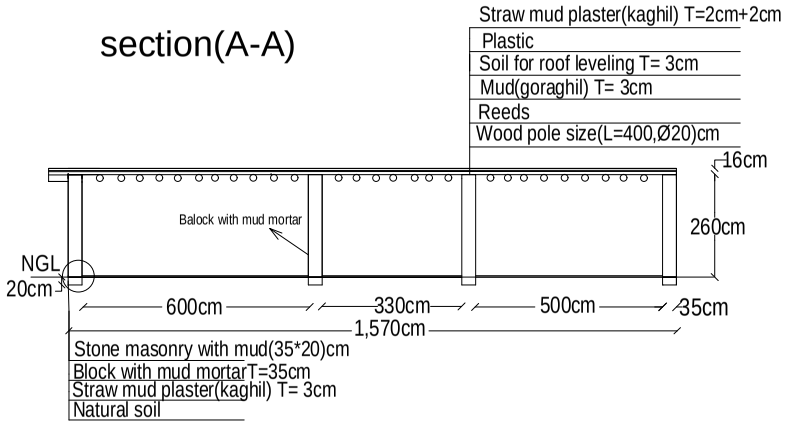
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	16	5		M^2	64.8	20	1,296
Wood	Wood Plank	6	0.2	0.002	Pcs	9	600	5,400
	Wood Pole	4	0.2	0.02	Pcs	27	200	5,400
	Wood Pole	0.85	0.2	0.02	Pcs	7	80	560
	Lintel (Door)	1.3	0.2	0.2	Pcs	6	400	2,400
	Lintel (Window)	2	0.2	0.2	Pcs	4	300	1,200
	Door		0.9	2.3	Pcs	3	5,000	15,000
Masonry	Goraghil				M^3	27.2	300	8,160
	Kaghil				M^2	190	40	7,600
	Kaghil				M^2	220	40	8,800
	Concrete Block	0.35	0.2	0.2	Pcs	1,311	25	32,775
	Stone				M^3	3	500	1,500
	Sand				M^3	1.9	500	950
	Site Work	20	10		M^2	120	100	12,000
Reeds	Straw				Kg	64	14	896
	Woven Reeds	15.5	3		M^2	46.5	100	4,650
Other Materials	Window		1.5	1.5	Pcs	2	7,000	14,000
	Glass				M^2	3.4	400	1,360
	Water				Tanker	30	700	21,000
	Plastic Pipe	1	0.1		M	4	100	400
Materials Sub Total								145,347
Labour								
	Unskilled Labour				M/D^2	125	300	37,500
	Skilled Labour				M/D^2	60	600	36,000
Labour Sub Total								73,500
Total Cost								218,847

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

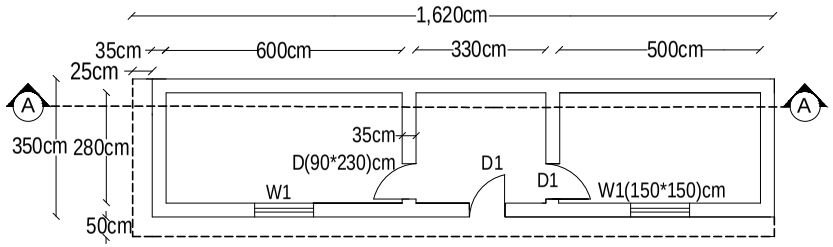
Front elevation



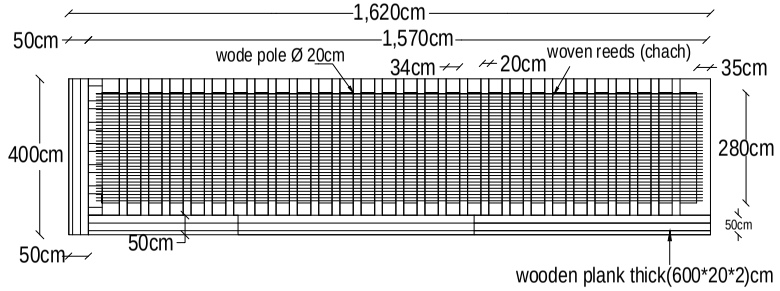
section(A-A)



Floor Plan



Roof plan



Shelter Type	Flat roof
Shelter Variation	Concrete Block and Mud Walls

Project Name: Local Architecture

Location

Province	Paktya
District	Gardez

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Concrete Block Structure

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	17
Unskilled labour (M/D)[2]	22
Construction time (days)	12
Shelter age (years)	9

Bills of Quantity[3]

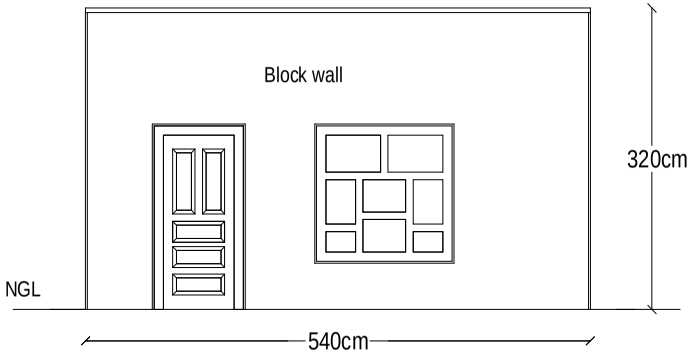
Shelter Variation Prevalence[4]

Materials

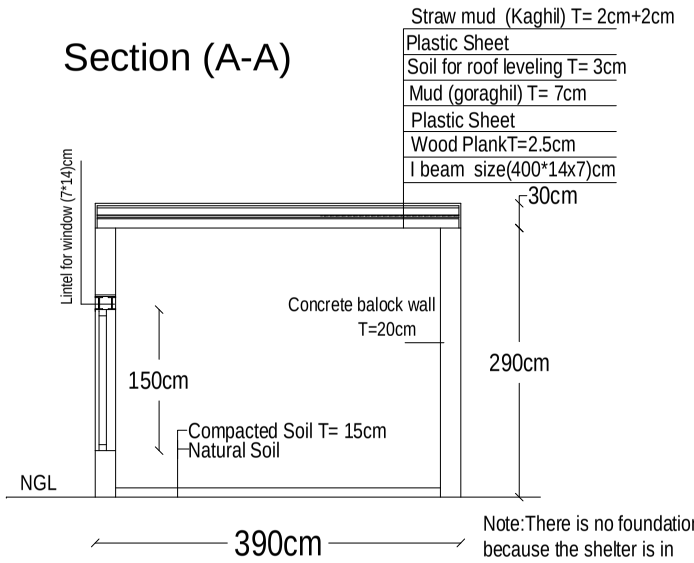
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	5.5	3.9		M^2	42	25	1,050
Wood	Wood Plank	6	0.2	0.025	Pcs	19	1,250	23,750
	Lintel (Door)	1.5	0.14	0.07	Pcs	3	540	1,620
	Lintel (Window)	2	0.14	0.07	Pcs	4	540	2,160
	Door		1	2	Pcs	2	2,000	4,000
Masonry	Goraghil				M^3	2.24	350	784
	Kaghil	5.4	3.9		M^2	21.06	30	632
	Concrete Block	0.3	0.2	0.15	Pcs	580	18	10,440
	Cement				Bag	10	350	3,500
	Sand				M^3	1.5	700	1,050
	Soil				M^3	2.62	350	917
Reeds	Straw				Kg	70	10	700
Other Materials	Steel I-beam	4	0.07	0.14	Pcs	16	540	8,640
	Window		1.5	1.5	Pcs	2.25	1,778	4,000
	Glass		1.5	1.5	M^2	1.7	450	765
Materials Sub Total								64,008
Labour								
	Unskilled Labour				M/D^2	30	300	9,000
	Masonry				M/D^2	15	700	10,500
	Carpentry				M/D^2	2	700	1,400
Labour Sub Total								20,900
Transportation								
	Transportation				Lump sum			9,000
Total Cost								93,908

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Front elevation

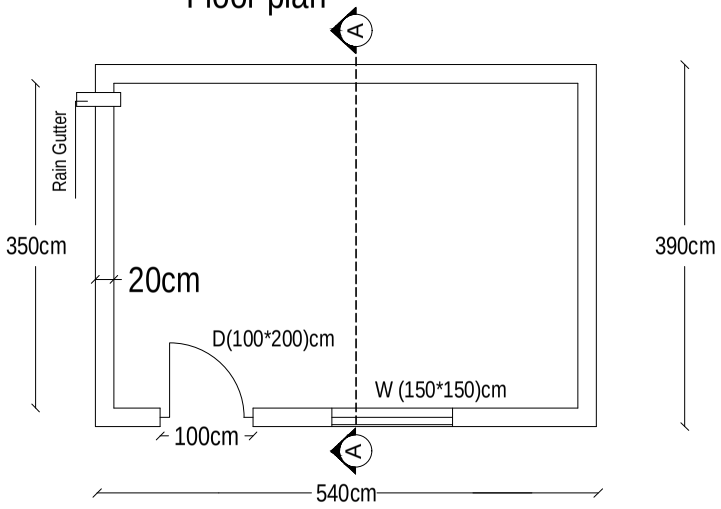


Section (A-A)

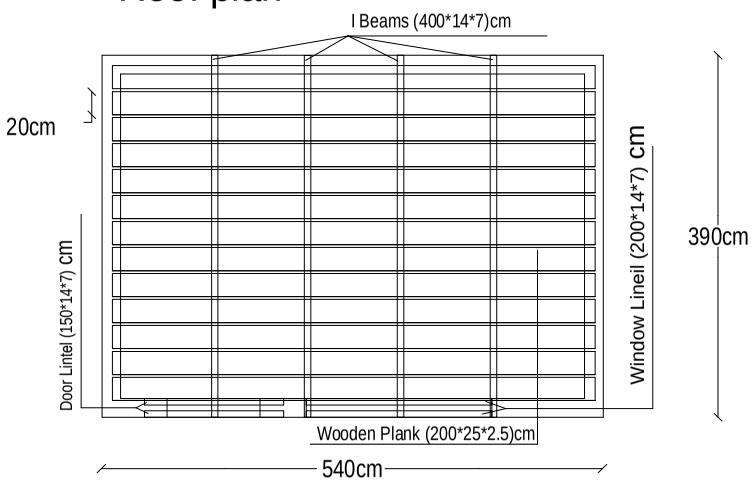


Note:There is no foundation because the shelter is in mountains and the base is safe

Floor plan



Roof plan



Shelter Type	Flat Roof
Shelter Variation	Concrete Block and Cement Walls

Project Name: Local Architecture

Location

Province	Nangarhar
District	Behsud

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Flat Roof Structure (Bamyan)

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	18
Unskilled labour (M/D)[2]	61
Construction time (days)	20
Shelter age (years)	8

Bills of Quantity[3]

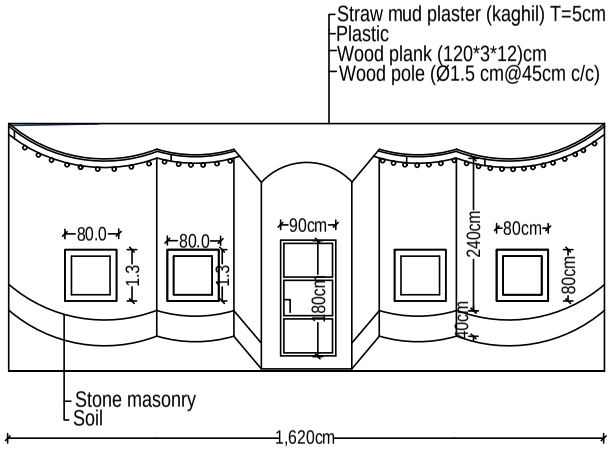
Shelter Variation Prevalence[4]

Materials

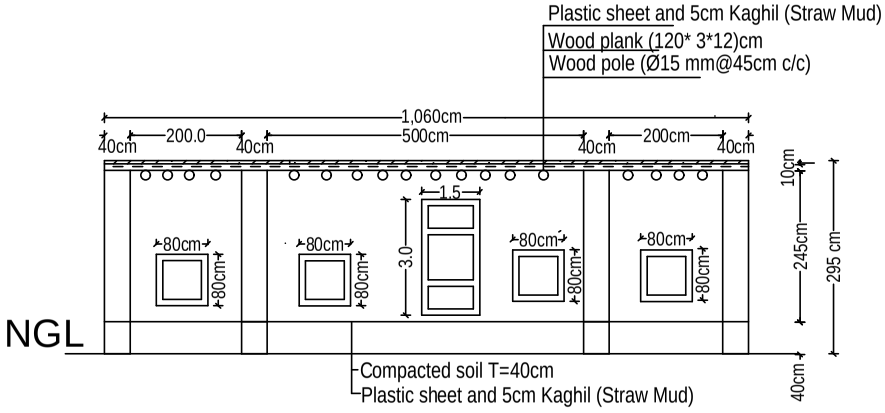
Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	11	6		M^2	66	22	1,452
Wood	Wood Plank	1.2	0.12	0.15	Pcs	50	80	4,000
	Wood Pole	6			Pcs	8	500	4,000
	Wood Pole	1.5			Pcs	10	200	2,000
	Wood Pole	5			Pcs	6	500	3,000
	Door		1	2	Pcs	1	3,500	3,500
Masonry	Kaghil	66	3	0.03	M^2	5.94	300	1,782
	Clay				M^3	16.8	233	3,914
	Stone	46	0.5	0.4	M^3	9.2	1,000	9,200
	Cement				Bag	75	400	30,000
	Sand				M^3	16.78	1,000	16,780
Other Materials	Rain Gutter	0.5	0.1	0.05	Pcs	3	100	300
	Window		0.8	0.8	Pcs	4	1,500	6,000
	Glass		1.5	7.65	M^2	11.5	300	3,444
	Plastic Pipe	1	0.06		M	2	100	200
Materials Sub Total								89,571
Labour								
	Unskilled Labour				M/D^2	39	450	13,650
	Skilled Labour				M/D^2	15	1,000	15,000
Labour Sub Total								28,650
Transportation								
	Transportation				Lump sum			3,000
Total Cost								121,221

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

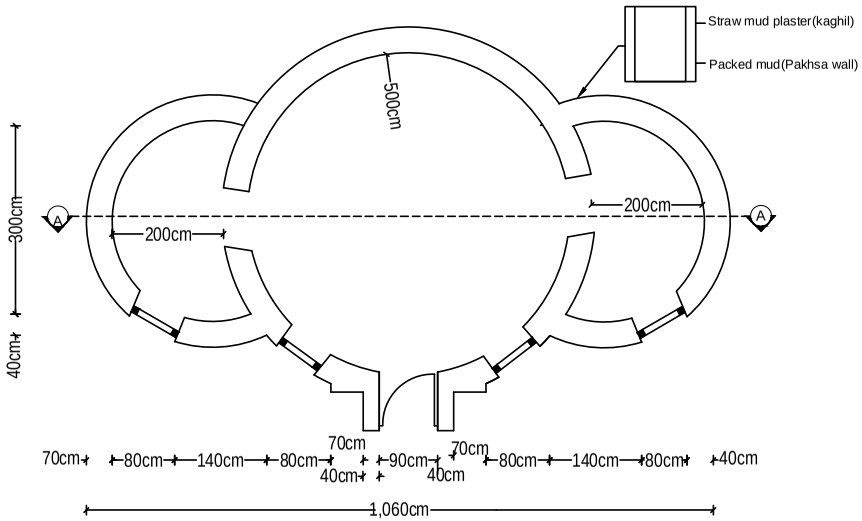
Front Elevation



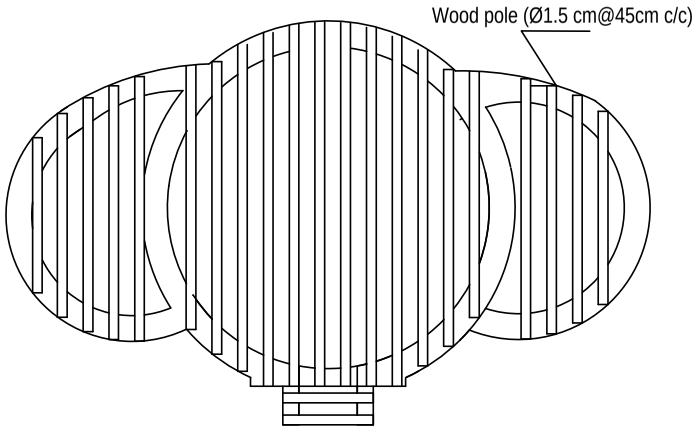
Section A-A



Floor Plan



Roof Plan



Shelter Type	Flat Roof
Shelter Variation	Brick or Pakhsa Walls Bamyan Variant

Project Name
Local Architecture

Location

Province	Bamyan
District	Bamyan

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Flat Roof Structure (Rural)

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	25
Unskilled labour (M/D)[2]	61
Construction time (days)	26
Shelter age (years)	8

Bills of Quantity[3]

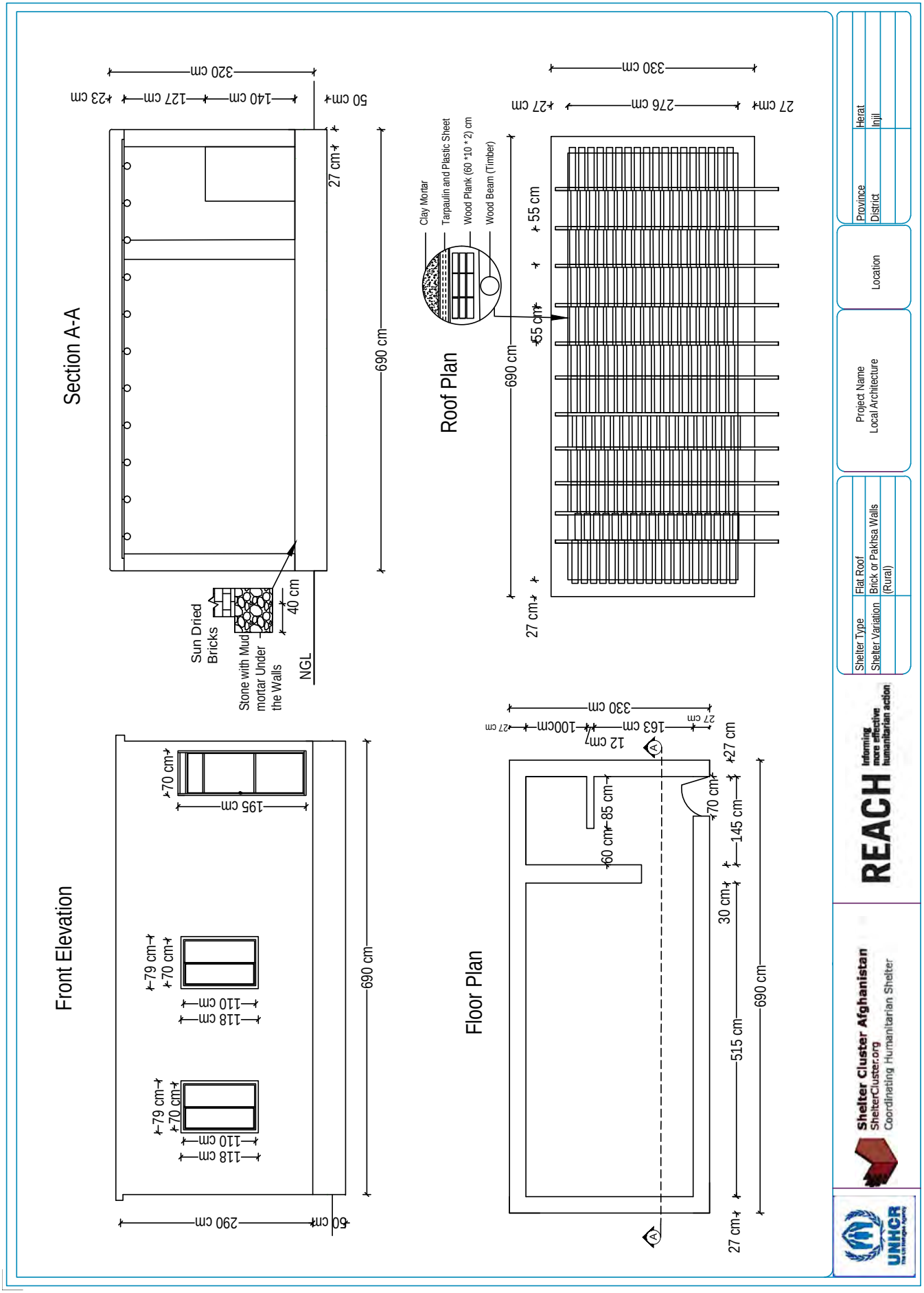
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	7.45	5.38		M^2	40.08	100	4,008
	Plastic Bag	5.6	0.5		M^2	2.8	15	42
	Cotton Sheet	7	2.87		M^2	20.09	35	703
	Cardboard	4.7	0.6		M^2	2.82	15	42.3
Wood	Bamboo Pole	3	0.08		Pcs	3	60	180
	Wood Lattice	1	0.1		Pcs	21	40	840
	Timber	1			Pcs	32	45	1,440
	Door		0.5	1.4	Pcs	1	2,300	2,300
Masonry	Kaghil	3.1	0.75	0.03	M^2	0.6975	2,000	140
	Clay	23.5	0.25	0.13	M^3	0.76375	325	248
	Pakhsa	32	0.2	1.85	M^3	11.84	325	3,848
	Stone	4.6	0.3	0.4	M^3	0.55	570	314
Other Materials	Metal Pipe	17	0.03		Pcs	17	220	3,740
	Metal Pipe	6.5	0.05		Pcs	6.5	450	2,925
	Glass		0.6	1	M^2	0.6	450	270
Materials Sub Total								21,040
Labour								
	Unskilled Labour				M/D[2]	36	350	12,600
	Skilled Labour				M/D[2]	8	500	4,000
Labour Sub Total								16,600
Transportation								
	Transportation				Lump sum			2,300
Total Cost								39,940

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Flat Roof Structure (Urban)

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	25
Unskilled labour (M/D)[2]	64
Construction time (days)	28
Shelter age (years)	12

Bills of Quantity[3]

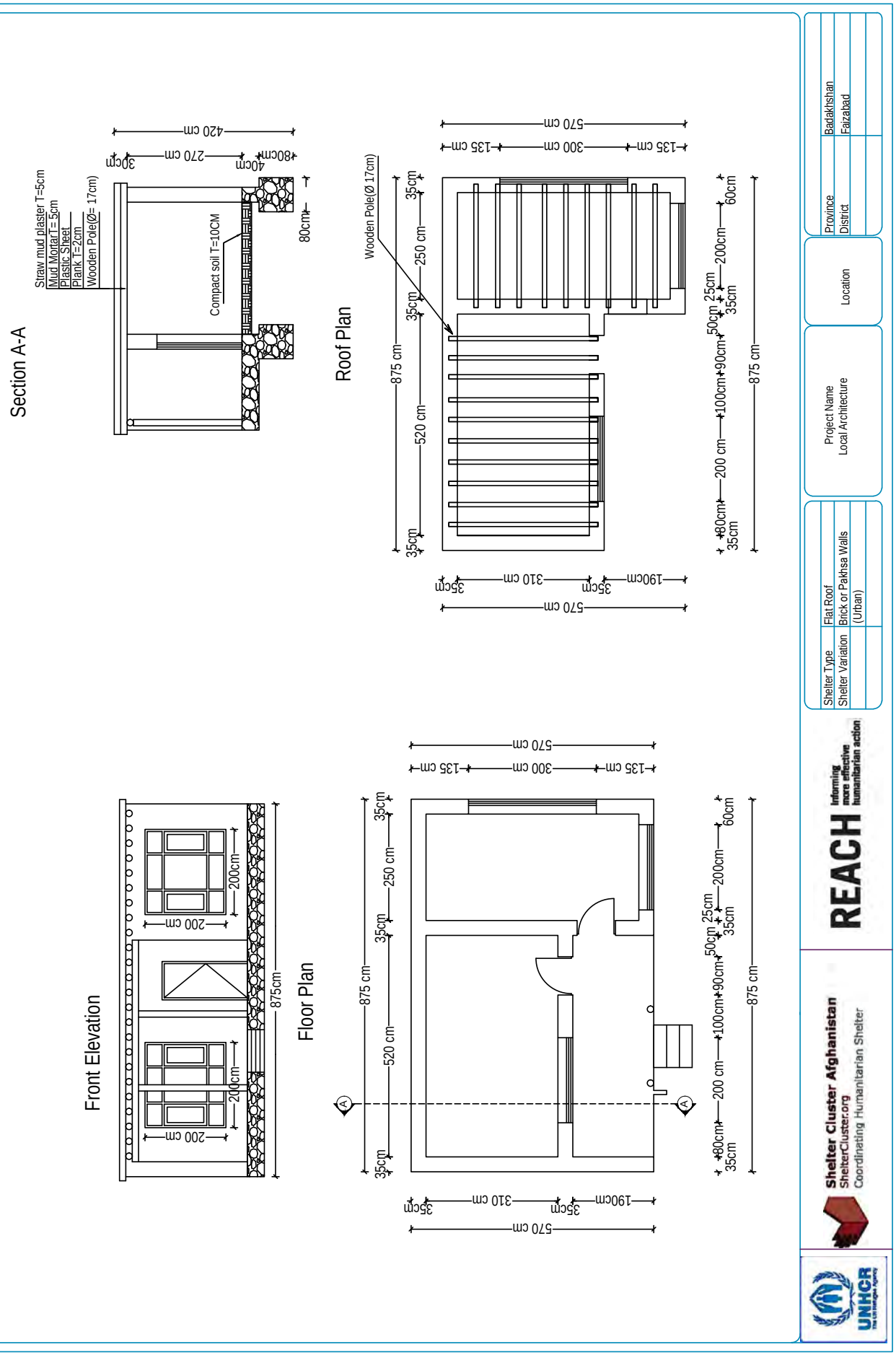
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	14	4		M^2	56	50	2,800
Wood	Wood Plank				Pcs	18	800	14,400
	Wood Pole				Pcs	35	700	24,500
	Timber				Pcs	12	700	8,400
	Door		0.8	2	Pcs	1	3,000	3,000
	Door		0.9	2	Pcs	2	3,000	6,000
Masonry	Goraghil	12.9	3.8	0.07	M^3	3.4	500	1,716
	Kaghil	0.04	12.9	3.8	M^2	2	500	980
	Bricks (Sun-dried)	0.22	0.11	0.06	Pcs	31	1,100	34,075
	Stone	35	0.8	0.8	M^3	22.4	500	11,200
	Stone	35	0.4	0.345	M^3	4.83	500	2,415
	Cement				Bag	1	400	400
	Site Work	15.9	7		M^2	111.3	44	4,897
Reeds	Straw				Kg	10	250	2,500
Other Materials	Nails				Kg	8	70	560
	Rain Gutter	0.5	0.1	0.05	Pcs	3	100	300
	Window		0.6	0.6	Pcs	1	700	700
	Window		1.9	1.5	Pcs	1	3,500	3,500
	Window		1.9	1.7	Pcs	1	3,500	3,500
	Glass				M^2	5	500	2,500
Materials Sub Total								128,343
Labour								
	Unskilled Labour				M/D^2	25	400	10,000
	Skilled Labour				M/D^2	25	850	21,250
	Skilled Labour				M/D^2	1	1,000	1,000
Labour Sub Total								32,250
Transportation								
	Transportation				Lump sum			2,000
Total Cost								162,593

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Shervani

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	18
Unskilled labour (M/D)[2]	34
Construction time (days)	15
Shelter age (years)	4

Bills of Quantity[3]

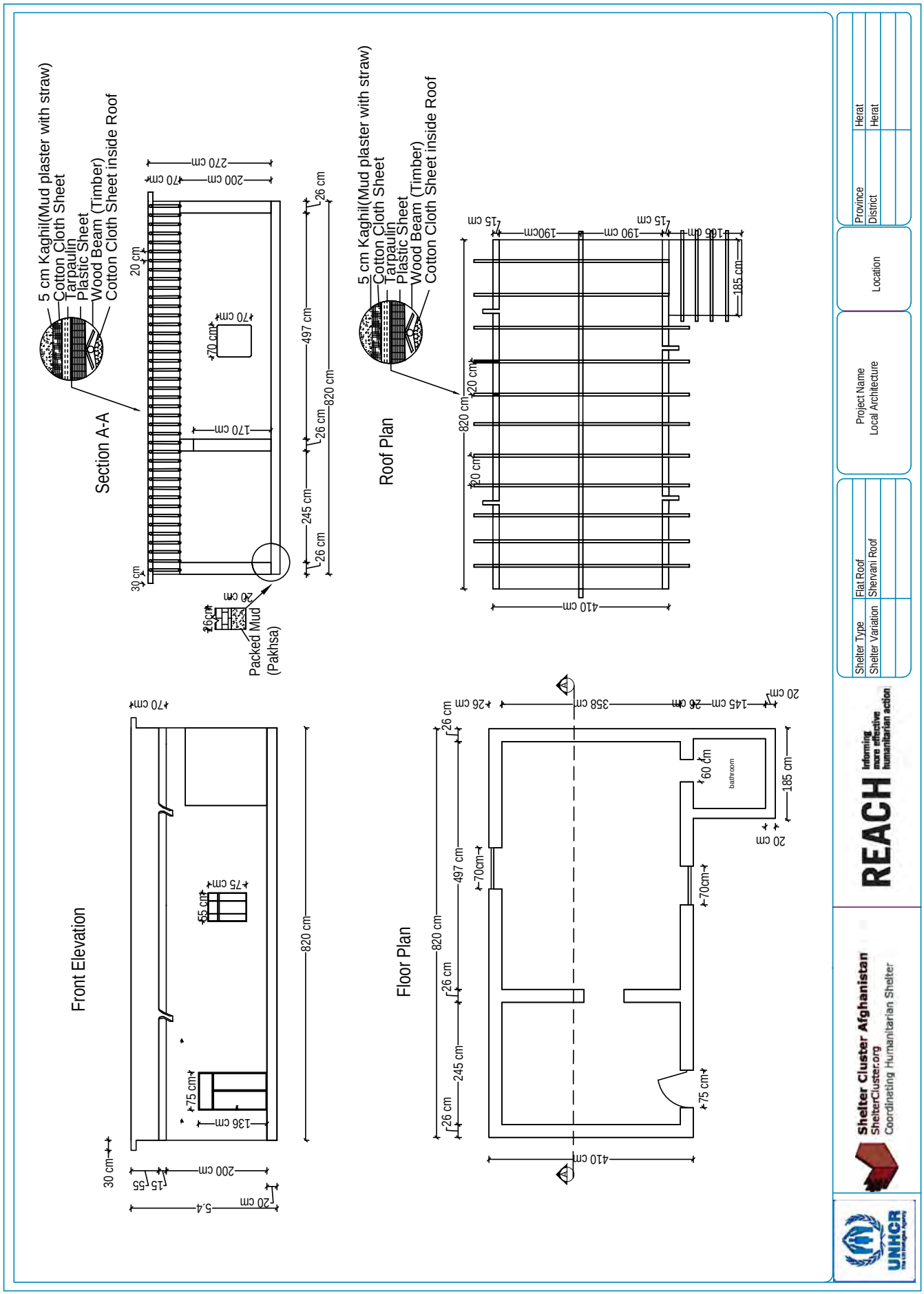
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth [5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	15	3		M^2	45	30	1,350
	Tarpaulin	13.67	3		M^2	41.01	135	5,536
	Cotton Sheet	44.73	3		M^2	134.19	55	7,280
Wood	Wood Plank	45	0.2	0.015	Pcs	0.135	15,000	2,025
	Timber	3	0.15	0.25	Pcs	3	180	540
	Timber	2	0.1	0.1	Pcs	20	60	1,200
	Door		0.75	1.4	Pcs	1	2,800	2,800
Masonry	Kaghil	74	2.5	0.04	M^2	7.4	1,300	9,620
	Clay	6	3.1	0.05	M^3	0.9	500	465
	Pakhsa	8.2	4.2	0.2	M^3	6.9	700	4,822
	Bricks (Sun-dried)	0.3	0.12	0.1	Pcs	10	1,350	13,900
	Cement				Bag	5	300	1,500
	Sand				M^3	2.24	450	1,008
Other Materials	Steel Pin	0.4	0.016		Pcs	115	2	230
	Rain Gutter	0.6	0.12	0.05	Pcs	4	70	280
	Window		0.55	0.75	Pcs	1	600	600
	Glass		1.2	1.2	M^2	1.44	330	475
Materials Sub Total								53,731
Labour								
	Unskilled Labour				M/D^2	96	350	33,600
	Skilled Labour				M/D^2	14	500	7,000
Labour Sub Total								40,600
Transportation								
	Transportation				Lump sum			0
Total Cost								96,831

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Steel Structure

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	8
Unskilled labour (M/D)[2]	18
Construction time (days)	7
Shelter age (years)	3

Bills of Quantity[3]

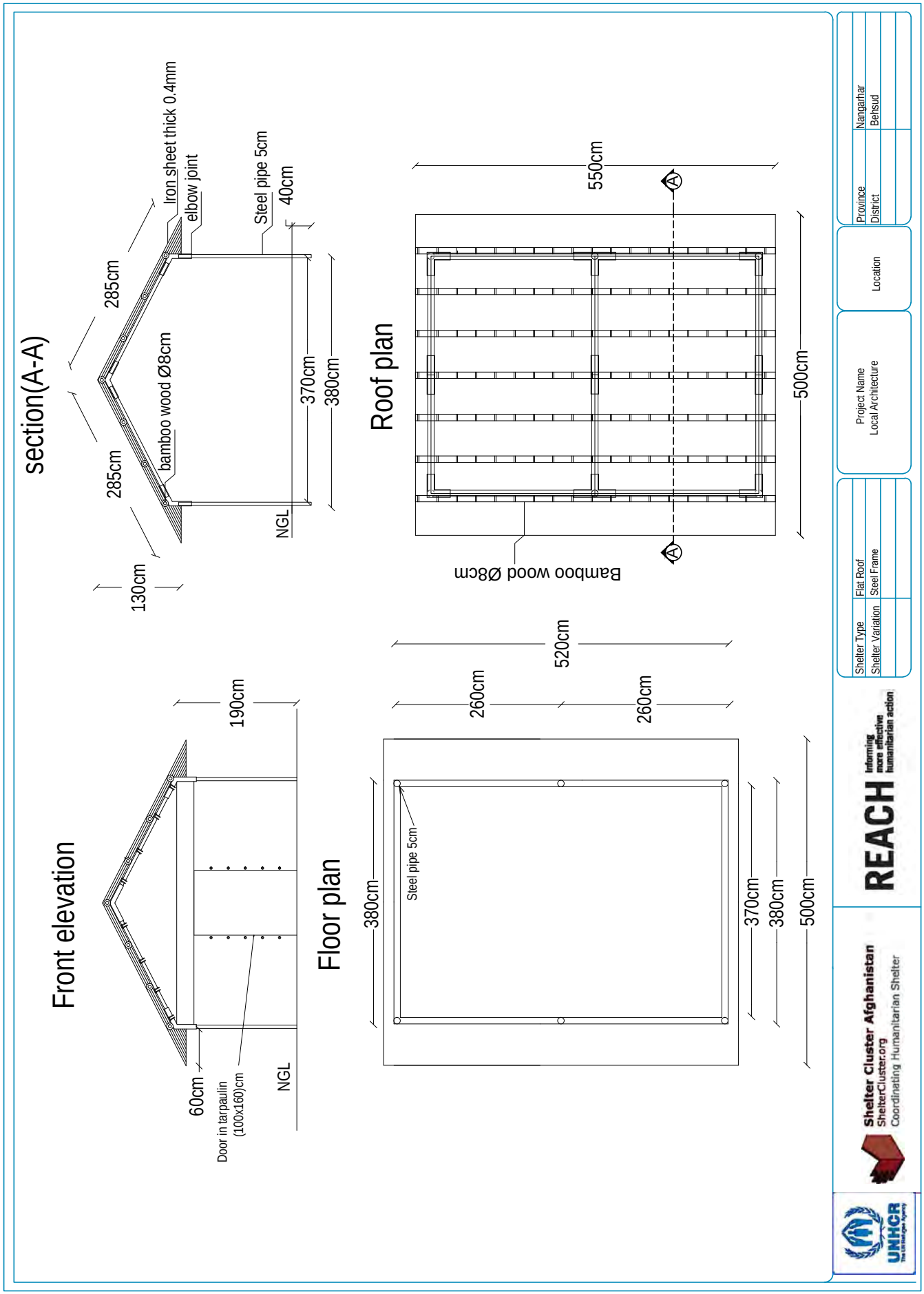
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Cotton Sheet	15.5	2.5		M²	36	250	9,000
Wood	Bamboo Pole	5.5	0.08		Pcs	7	360	2,520
Other Materials	Nails				Kg	50	30	1,500
	Metal Pipe	2.5	0.05		Pcs	15	290	4,350
	Metal Pipe	2.4	0.05		Pcs	6	290	1,740
	Metal Pipe	5	0.05		Pcs	16	290	4,640
	Metal Sheet	5.5	5.7	0.004	M²	31.35	310	9,720
	Bolts				Kg	2	500	1,000
Materials Sub Total								34,469
Labour								
	Unskilled Labour				M/D[2]	30	300	9,000
	Skilled Labour				M/D[2]	17	700	11,900
Labour Sub Total								20,900
Transportation								
	Transportation				Lump sum			3,000
Total Cost								58,369

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Stone Walls

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	32
Unskilled labour (M/D)[2]	83
Construction time (days)	48
Shelter age (years)	18

Bills of Quantity[3]

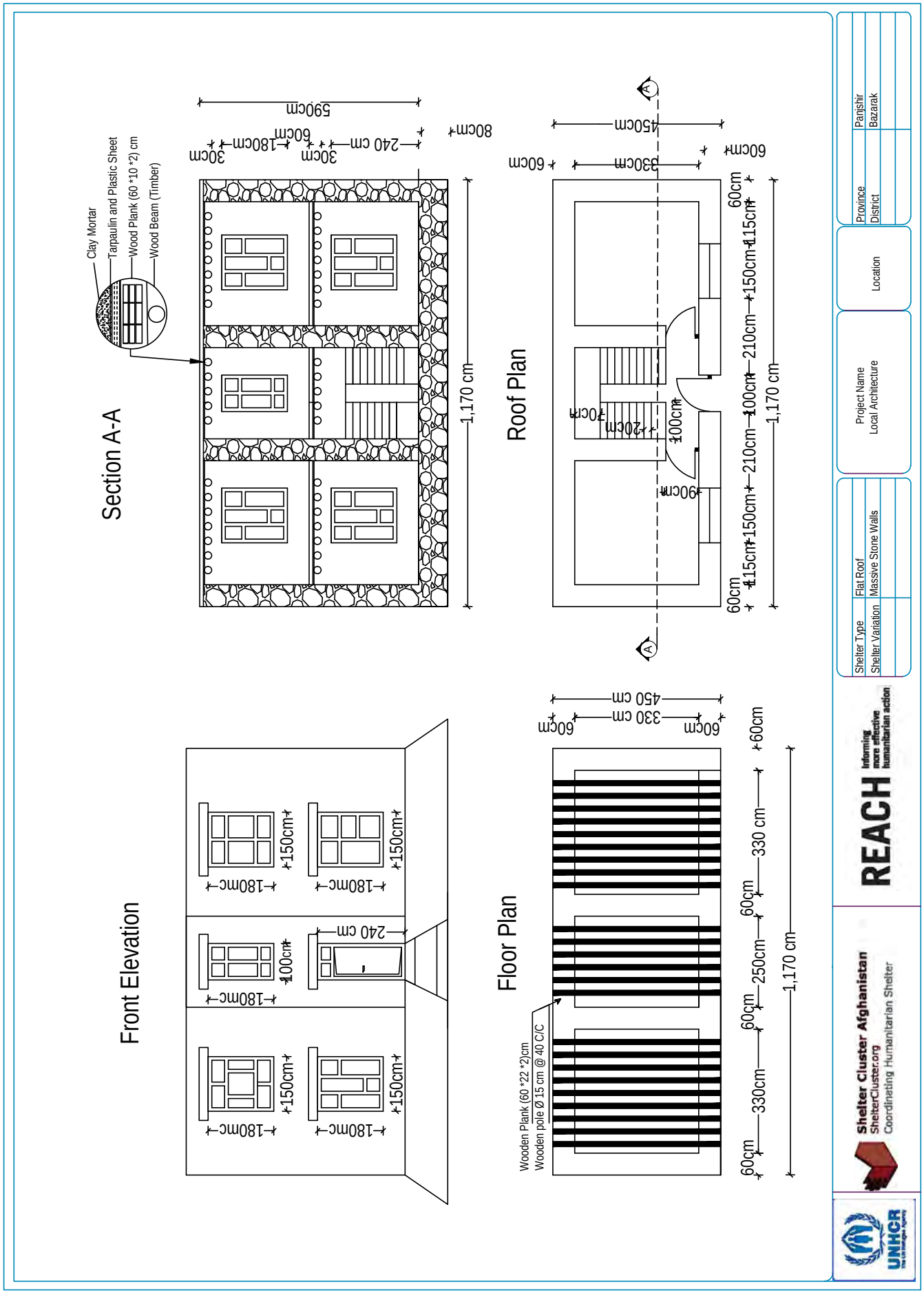
Shelter Variation Prevalence[4]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Tarpaulin	18	3		M^2	54	12	648
Wood	Wood Plank	2	0.22	0.02	Pcs	190	120	22,800
	Wood Pole	4			Pcs	28	500	14,000
	Timber	2.5	0.15	0.25	Pcs	12	200	2,400
	Timber	1.5	0.1	0.1	Pcs	9	100	900
	Door		0.9	1.9	Pcs	5	4,000	20,000
Masonry	Kaghil	56	5		M^2	280	80	22,400
	Stone	31.3	0.6	6	M^3	112.68	400	45,072
Reeds	Straw				Kg	210	8	1,680
Other Materials	Window		1.5	1.5	Pcs	5	3,500	17,500
	Glass				M^2	8	320	2,560
Materials Sub Total								149,960
Labour								
	Unskilled Labour				M/D^2	40	400	16,000
	Skilled Labour				M/D^2	15	600	9,000
Labour Sub Total								25,000
Transportation								
	Transportation				Lump sum			3,000
Total Cost								177,960

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Shelter Design[6]



6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

SHELTER TYPE: Flat Roof

Shelter Variation: Timber and Stone Walls

Shelter Variation Attributes

General Attributes[1]

Skilled labour (M/D)[2]	25
Unskilled labour (M/D)[2]	53
Construction time (days)	50
Shelter age (years)	9

Shelter Variation Prevalence[4]

Bills of Quantity[3]

Materials

Material Type	Material	Length[5]	Width/ Diameter[5]	Height/Depth[5]	Unit	Quantity	Unit Cost (AFN)	Total (AFN)
Fabric	Plastic Sheet	10.5	8		M^2	156	30	4,680
Wood	Wood Pole	3.5	0.08	0.1	Pcs	51	800	40,800
	Timber	4.5	0.15	0.25	Pcs	8	4,000	32,000
	Timber	3.5	0.08	0.1	Pcs	51	800	40,800
	Lintel (Door)	1.5	0.15	0.15	Pcs	8	250	2,000
	Lintel (Window)	3.5	0.15	0.15	Pcs	2	400	800
	Lintel (Window)	2.5	0.15	0.15	Pcs	4	300	1,200
	Door		1	2.4	Pcs	2	1,200	2,400
	Door		1.5	2	Pcs	2	1,400	2,800
Masonry	Stone				M^3	64.35	450	28,959
	Soil				M^3	17.16	350	6,006
Reeds	Straw				Kg	140	10	1,400
Other Materials	Rain Gutter				Pcs	2	80	160
	Glass		3.5	2	M^2	8.8	430	3,784
Materials Sub Total								211,239

Labour

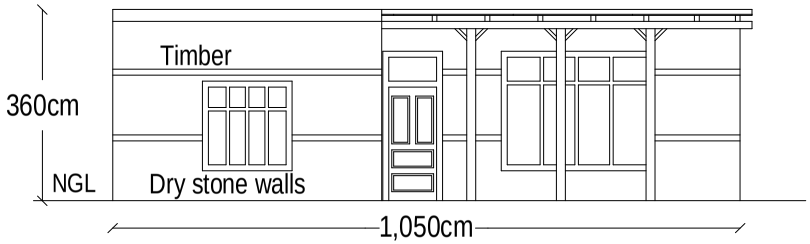
	Unskilled Labour				M/D^2	80	350	28,000
	Masonry				M/D^2	40	700	28,000
	Carpentry				M/D^2	12	700	8,400
Labour Sub Total								64,400

Transportation

	Transportation				Lump sum			
Total Cost								275,638

1. Data from IIs; all results were averaged across all responses.
2. Man/days, or the number of days of labour required by one labourer to construct the shelter.
3. Data from Shelter Design KIIs; all data is from a representative example shelter.
4. Any province the homeowners reported the shelter was present in was included, regardless of the percentage of responses.
5. Measurements are in meters.

Front elevation



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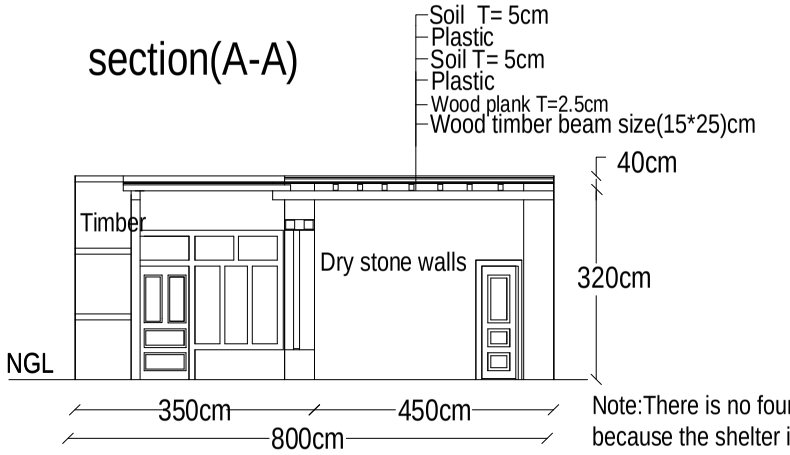
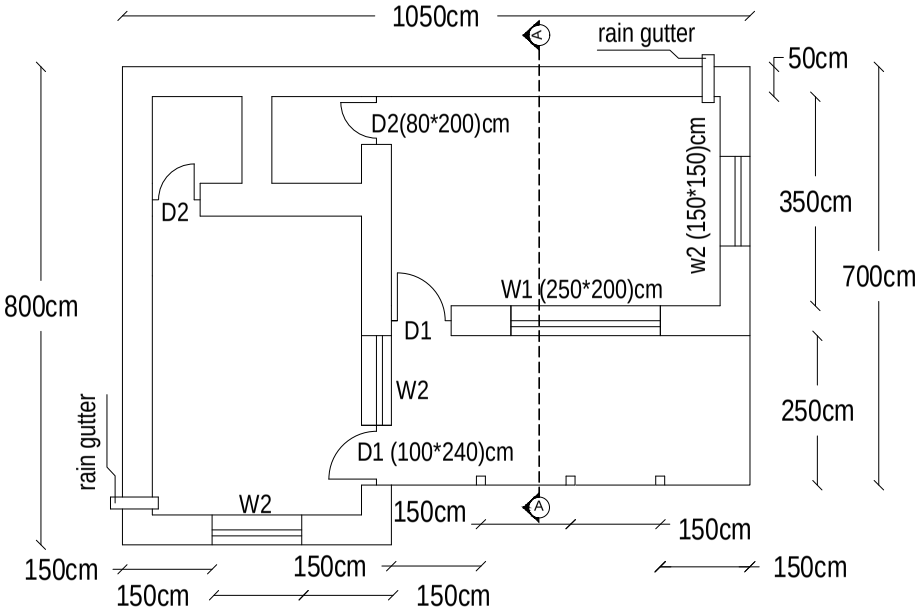
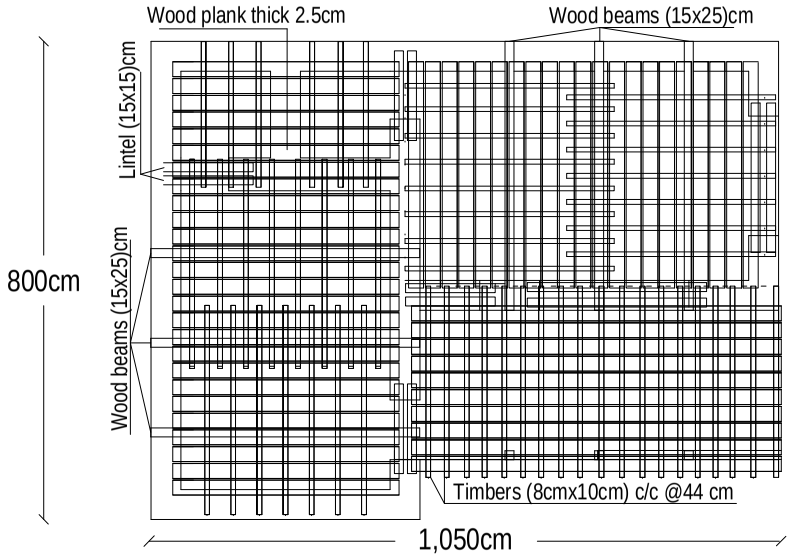


Note:There is no foundation because the shelter is in a mountainous area and the base is safe.

Floor plan



Roof plan



Shelter Cluster Afghanistan
ShelterCluster.org
Coordinating Humanitarian Shelter

REACH Informing more effective humanitarian action

Shelter Type	Flat Roof
Shelter Variation	Timber and Stone Walls

Project Name
Local Architecture

Location

Province	Kunar
District	Asadabad

6. Shelter designs are a representation of the shelter type variation, and should not be taken to be the exact measurements of the shelter type variation.

ANNEXES

Above: Brahui Black Tent shelter type variation, Matun District, Khost Province. Photo credit: REACH Initiative, November 2020.

Below: Concrete Block and Mud Flat Roof shelter type variation, Gardez District, Paktya Province. Photo credit: REACH Initiative, November 2020.

ANNEX I: SAMPLING FRAME

For sampling, a minimum of one district in each region was identified to conduct face-to-face interviews. After identifying the local shelter type variations present, 1 KIIs with shelter experts and 9 IIs with homeowners were conducted per shelter type variation in each district. 2 FGDs were conducted per shelter type in each district. A total of 63 KIIs, 585 IIs, and 62 FGDs were conducted in total.

Shelter Family	Shelter Type	Central				East			North		North East			South			South East		West		
		Bamyan	Kabul		Panjshir	Kunar	Nangarhar		Balkh	Samangan	Badakhshan	Kunduz	Takhar	Kandahar		Nimroz	Khost	Paktya	Ghor	Herat	
		Bamyan	Kabul	Qara Bagh	Bazarak	Asad Abad	Behsud	Jalalabad	Khulm	Aybak	Faiz Abad (Badakhshan)	Imam Sahib	Chal	Taloqan	Kandahar	Daman	Zaranj	Matun	Gardez	Feroz Koh	Hirat	Injil
Black Tents	Vaulted - Durrani													■	■			■				
	Vaulted - Baluch														■							
	Peaked - Ghilzai						■								■		■		■			
	Peaked - Brahui														■			■				
Cotton Tents	Jugi		■					■								■			■			
	Jat		■							■						■			■			
	Herati tent																					■
Huts	Circular - Lacheq								■													
	Circular – Chapari without centerpole												■									
	Rectangular – Kapa-i-arab										■											
	Ovate-Oblong - Kodai																	■				
	Ovate-Oblong - Kapa										■				■	■						
Cave	Samoch	■																				
Curved roof Construction	Gumbazi	■							■				■			■	■				■	■
	Tazar								■				■				■					
	Fired brick vaults and timber beams														■	■						
Flat roof Construction	Brick or Pakhsa walls (rural)			■			■			■	■			■		■			■	■		■
	Brick or Pakhsa walls (bamyan variant)																					
	Brick or Pakhsa walls (urban)		■					■		■	■	■		■		■			■	■	■	
	Concrete block and mud															■						
	Concrete blocks and cement						■															
	Steel frame							■														
	Massive stone walls				■	■					■					■			■	■		
	Timber and stone walls					■												■				
	Shervani roof																				■	■
	Brick and wood frame walls (Kabuli house)		■			■					■					■			■			

ANNEX II: SECONDARY DATA REVIEW

As noted in the Methodology section, REACH consulted three main sources for identifying the shelter type variations for the study: Afghanistan: An atlas of indigenous domestic architecture, by Szabo and Barfield, 1991; Encyclopædia of Vernacular architecture of the world (Vol. 2) by Oliver, P. 1997, and The Encyclopædia Iranica. The shelter types identified in these three sources are listed below. During primary data collection, REACH field teams identified several new shelter types, which were added to the sampling frame, and noted as, "REACH field observations, 2020."

Shelter Type	Shelter Type Variation	Assessed	Sources
Black Tents	Vaulted - Durrani	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Vaulted - Baluch	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Peaked - Ghilzai	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Peaked - Brahui	✓	Szabo and Barfield, 1991; Encyclopædia Iranica
	Taimani	✗	Szabo and Barfield, 1991; Encyclopædia Iranica
Cotton Tents	Jugi	✓	Szabo and Barfield, 1991
	Jat	✓	Szabo and Barfield, 1991
	Herati tent	✓	REACH field observations, 2020
Yurts	Domical - Double-tier lattice	✗	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Domical - Single-tier lattice	✗	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Conical - Firozkahi	✗	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
Huts	Circular - Kapa-i-Chamshi	✓	Szabo and Barfield, 1991
	Circular - Lacheq	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997; Encyclopædia Iranica
	Circular – Chapari with centerpole	✗	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Circular – Chapari without centerpole	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Kana-i-Kirga	✗	Oliver P. ed. 1997; Encyclopædia Iranica
	Rectangular – Kapa-i-arab	✓	Szabo and Barfield, 1991
	Ovate-Oblong - Kodai	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Ovate-Oblong - Kodik	✗	Szabo and Barfield, 1991
	Ovate-Oblong - Kapa	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
Cave	Samoch	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
Curved roof Construction	Gumbazi	✓	Szabo and Barfield, 1991
	Tazar	✓	REACH secondary data review, 2020
	Fired brick vaults and ribs	✗	Szabo and Barfield, 1991
	Fired brick vaults and timber beams	✓	Szabo and Barfield, 1991
Flat roof Construction	Brick or Pakhsa walls (rural)	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Brick or Pakhsa walls (bamyan variant)	✓	REACH field observations, 2020
	Brick or Pakhsa walls (urban)	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Concrete block and mud	✓	REACH field observations, 2020
	Concrete blocks and cement	✓	REACH field observations, 2020
	Steel frame	✓	REACH field observations, 2020
	Massive stone walls	✓	Szabo and Barfield, 1991
	Timber and stone walls	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997
	Shervani roof	✓	REACH field observations, 2020
	Brick and wood frame walls (Kabuli house)	✓	Szabo and Barfield, 1991; Oliver P. ed. 1997

ANNEX III: FGD TOOL

Research questions	SUBQ#	Sub-question	Questionnaire QUESTION	Probes	Method	Level of Analysis
Metadata	A.1.1.	Metadata	Shelter type	What is the shelter type that you are assessing?	Select One	Shelter type
	A.1.2.		Shelter type variation	What is the variation of the shelter type?	Select One	Shelter type
			Gender	What gender is the group that you are interviewing?	Select One	Male; Female
	A.1.3		Enter shelter code	Enter the code of the interview according to the requested criteria (Shelter type - district - gender)	Text	Enter shelter code
	A.1.4		Shelter location	Where is the shelter located?	Province	Shelter type
					District	
					Village	
	A.1.5.		Shelter mobile	Is the shelter mobile (e.g., it can be moved?)	Select One	Shelter type
What differences exist in shelter type, materials, methods of construction, maintenance, and repair by communities by region across Afghanistan?	B.1.1	Shelter construction methods and preferences	What are the reasons that you chose to build this particular shelter type?	Is this the most common shelter type in the area? What other shelter types are there?	FGD	Shelter type
	B.1.2			Are there other shelter types or variations that you would have preferred to build (permanent, flat roof, tent, etc.)? What are they?	FGD	Shelter type
	B.1.3			Why do you wish that you could build a different shelter (more expensive, stronger, larger, etc.) ?	FGD	Shelter type
	B.1.4			If mobile shelter – if you had the opportunity to have a more permanent shelter, would you use it? Would you still migrate to new locations? Why?	FGD	Shelter type
	B.2.1	Shelter materials	What materials did you use to construct your shelter (list the main materials used, covering the following categories: 1) Fabrics (felt, cotton, wool), 2) Wood (planks, poles, timber), 3) Masonry (bricks, cement, pakhsa), 4) Reeds (chegh, buria), 5) Rope (rope, string) and other materials (nails, steel I Beams, etc.)	Why did you use the materials that you did?	FGD	Shelter type
	B.2.3			Does using or collecting any of these materials cause any problems for the surrounding area? (For example, soil erosion, prices went up, deforestation, erosion, waste)?	FGD	Shelter type
	B.2.4			Do using these materials for shelters provide any benefits for the surrounding area? (For example, the need for materials created new jobs, reduced insect infestation, or made the area safer)	FGD	Shelter type
	B.2.5			What better practices do you think could be done to improve the materials and construction practices for the materials to make the shelters safer or less environmentally or socially damaging?	FGD	Shelter type

Research questions	SUBQ#	Sub-question	Questionnaire QUESTION	Probes	Method	Level of Analysis
What differences exist in shelter type, materials, methods of construction, maintenance, and repair by communities by region across Afghanistan?	B.3.1	Plot organization and arrangement	Are any shelter or plot design choice made to resist natural disasters in the area (including design changes to the foundation, walls, roof, structure, or connections)? If so, what design choices are made?	Do households usually share their plot with other households? Why or why not?	FGD	Shelter type
	B.3.2			Are shelters connected to other shelters or very close together, or do households live far away from each other? Why?	FGD	Shelter type
	B.3.3			Are there trees or vegetation in the plot? Are they used in any way to improve the plot's resilience or environmental comfort?	FGD	Shelter type
	B.4.1	Shelter disaster risk reduction	Are any shelter or plot design choice made to resist natural disasters in the area (including design changes to the foundation, walls, roof, structure, or connections)? If so, what design choices are made?	How often do you experience a natural disaster that damages the shelter?	FGD	Shelter type
	B.4.2			For each type of natural disaster (flooding, earthquake, sandstorms, wind, blizzards, landslides, etc.), what type of techniques (construction or modifications) do you do to help strengthen the structure and prevent damage?	FGD	Shelter type
	B.4.3			When a shelter is damaged by natural disasters, are you able to repair it? Why or why not?	FGD	Shelter type
	B.4.4			What are the most needed items in order to repair or help prevent damage to your shelter? Are you able to access them easily? Why or why not?	FGD	Shelter type
	B.5.1	Seasonality	3. How is the shelter designed to be comfortable to live for all times/seasons of the year?	What do you do to keep the shelter warm in the winter (shelter modifications, insulation, construction, etc.)?	FGD	Shelter type
	B.5.2			Are you able to access all of the materials needed to keep the shelter warm? Why or why not?	FGD	Shelter type
	B.5.3			What do you do to keep the shelter cool during the summer (shelter modification, ventilation, construction, etc.)?	FGD	Shelter type
	B.5.4			Are you able to access all of the materials needed to keep the shelter cool during the summer? Why or why not?	FGD	Shelter type
	B.5.5			What could be done to make these materials easier to access?	FGD	Shelter type

ANNEX IV: KII TOOL

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
Metadata	M.1.1	N/A	N/A	Engineer ID	Integer	N/A	Shelter Type Variation
	M.1.2	N/A	N/A	My name is [[name]] and I work for ACTED. On behalf of UNHCR and the Emergency Shelter and NFI Cluster, we are conducting an assessment of local shelter types across Afghanistan. As part of this assessment we would like to photograph your shelter and draw architectural designs of it, as well as ask you a few questions about the construction, maintenance, and repair of your shelter, as well as how you keep it comfortable to live in during different weather and seasons. The information will be used by UNHCR and other NGOs to adjust their emergency and transitional shelter responses to better reflect the construction of local shelter types around Afghanistan. This assessment should take 20 to 30 minutes. Any information that you provide will be confidential and anonymous. This is voluntary and you can choose not to answer any or all of the questions; however, we hope that you will participate since your views are important. Participation in the survey does not have any impact on whether you or your family receive assistance. Do you have any questions?			Shelter Type Variation
	M.1.3	N/A	N/A	Do you consent to participate in this survey?	Select One	Yes	Shelter Type Variation
	M.1.4					No	
	M.1.5	Shelter Expert	N/A	Are you a shelter expert within the community	Select One	Yes	Shelter Type Variation
	M.1.6					No	
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.1.1.	Shelter type	Shelter type	What is the shelter type that you are assessing?	Select One	Black tents (Goat-hair palas)	Shelter Type Variation
						Cotton tents (Manufactured and scavenged materials)	
						Yurts (Felt and wood lattice frame)	
						Huts (wood frame and felt, palas, or reed roof)	
						Curved roof construction (permanent shelter with round roof)	
						Flat roof construction (permanent shelter with flat roof)	
	A.1.2	Shelter type variation	Shelter type variation	What is the shelter type variation that you are assessing?	Select One	List of shelter variations based on shelter type	Shelter Type Variation
	A.1.4	Shelter location	Shelter Location	Where is the shelter located?	Province	Province	Shelter type variation
					District	District	
					Village	Village	
	A.1.3	Enter shelter code	Shelter Code	Enter the code of the interview according to the requested criteria	Calculate	Calculate	Enter shelter code
	A.1.5.	Shelter mobile	Shelter is Mobile	Is the shelter mobile (e.g., it can be moved?)	Select One	Yes	Shelter type variation
						No	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.2.1.	Materials Used	N/A0	In this section, please record all of the different types of materials used to construct the shelter	Note	N/A	Shelter Type Variation
			Fabric Sheets Used	Fabric Sheets	Select One	Yes No	Shelter Type Variation
			Wood Used	Wood	Select One	Yes No	Shelter Type Variation
			Masonry Used	Masonry	Select One	Yes No	Shelter Type Variation
			Reeds Used	Reeds	Select One	Yes No	Shelter Type Variation
			Rope Used	Rope	Select One	Yes No	Shelter Type Variation
			Other Materials Used	Other Materials	Select One	Yes No	Shelter Type Variation
	A.3.10	Fabric Sheets availability and Preference	N/A	Fabric Sheets	Note	N/A	N/A
			Fabric Sheets Used	What materials did you use?	Select Multiple	Goat Hair (Palas) Felt Mat Canvas / Cotton Cloth Tarpaulin / Plastic Sheet	Shelter Type Variation
	A.3.2.		Fabric Sheets Reasons for Use	Why did you use these materials?	Select Multiple	It is safer/more secure It protects against the climate better (keeps shelter warm/cool) It is mobile/not mobile It lasts a longer time It requires less repairs/maintenance It is part of our culture Other (Specify)	Shelter Type Variation
	A.3.3.		Fabric Sheets Location	Where did you get the materials?	Select Multiple	Purchased in the local market Collected from nature Inherited Specially imported Other (specify)	Shelter Type Variation
	A.3.4.		Fabric Sheets Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes No	Shelter Type Variation

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.3.5.		Specific Fabric Sheets Preferred	What materials would you have preferred to use?	Select Multiple	Goat Hair (Palas)	Shelter Type Variation
						Felt Mat	
						Canvas / Cotton Cloth	
						Tarpaulin / Plastic Sheet	
	A.3.6.		Fabric Sheets Preferred not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
	A.4.1.	Wood material availability and Preference	N/A	Wood	Note		
			Wood Used	What materials did you use?	Select Multiple	Wood Pole	Shelter Type Variation
						Wood Plank	
						Wood Beam (Timber)	
						Wood struts (yurt or hut roof)	
						Wood Lattice Frame (Yurt)	
						Wooden boughs / hoops	
						Forked / T-bar pole (Sotun)	
						Tent Pole	
						Bamboo Pole	
						Tree trunk	
						Tamarisk bundles	
						Tamarisk bough	
	A.4.2.		Wood Reasons for Use	Why did you use these materials?	Select Multiple	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	
	A.4.3.		Wood Location	Where did you get the materials?	Select Multiple	Purchased in the local market	Shelter Type Variation
						Collected from nature	
						Inherited	
						Specially imported	
						Other (specify)	
	A.4.4.		Wood Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes	Shelter Type Variation
						No	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.4.5.	Wood material availability and Preference	Specific Wood Preferred	What materials would you have preferred to use?	Select Multiple	Wood Pole	Shelter Type Variation
						Wood Plank	
						Wood Beam (Timber)	
						Wood struts (yurt or hut roof)	
						Wood Lattice Frame (Yurt)	
						Wooden boughs / hoops	
						Forked / T-bar pole (Sotun)	
						Tent Pole	
						Bamboo Pole	
						Tree trunk	
						Tamarisk bundles	
						Tamarisk bough	
	A.4.6.		Wood Preferred Not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
	A.5.1.	Masonry availability and Preference	N/A	Masonry	Note	N/A	N/A
			Masonry Used	What materials did you use?	Select Multiple	Sun-Dried Bricks	Shelter Type Variation
						Fired Bricks	
						Mud	
						Packed mud (Pakhsa)	
						Stones	
						Gypsum mortar	
						Clay Mortar	
						Earth/Potsherds	
						Cement	
						Sand	
						Kaghil (Mud plaster with straw)	
						Mud (mortar)	
	A.5.2.		Masonry Reasons for Used	Why did you use these materials?	Select Multiple	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.5.3.	Masonry availability and Preference	Masonry Locations	Where did you get the materials?	Select Multiple	Purchased in the local market	Shelter Type Variation
						Collected from nature	
						Inherited	
						Specially imported	
						Other (specify)	
	A.5.4.		Masonry Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes	Shelter Type Variation
						No	
	A.5.5.		Specific Masonry Preferred	What materials would you have preferred to use?	Select Multiple	Sun-Dried Bricks	Shelter Type Variation
						Fired Bricks	
						Mud	
						Packed mud (Pakhsa)	
						Stones	
						Gypsum mortar	
						Clay Mortar	
						Earth/Potsherds	
						Cement	
						Sand	
						Kaghil (Mud plaster with straw)	
						Mud (mortar)	
	A.5.6.		Masonry Preferred Not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
	A.6.1.	Reed availability and Preference	N/A	Reeds	Note		
			Reeds Used	What materials did you use?	Select Multiple	Reed Mats (Buria)	Shelter Type Variation
						Woven Reeds (Chegh)	
						Reed Thatching	
						Bundled Reeds	
						Loose Reeds	
						Tamarisk mats	
						Straw	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.6.2.	Reed availability and Preference	Reeds Reasons for Use	Why did you use these materials?	Select Multiple	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	
	A.6.3.		Reeds Locations	Where did you get the materials?	Select Multiple	Purchased in the local market	Shelter Type Variation
						Collected from nature	
						Inherited	
						Specially imported	
						Other (specify)	
	A.6.4.		Reeds Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes	Shelter Type Variation
						No	
	A.6.5.		Specific Reeds Preferred	What materials would you have preferred to use?	Select Multiple	Reed Mats (Buria)	Shelter Type Variation
						Woven Reeds (Chegh)	
						Reed Thatching	
						Bundled Reeds	
						Loose Reeds	
						Tamarisk mats	
						Straw	
	A.6.6.		Reeds Preferred Not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
	A.7.1.	Rope availability and Preference	N/A	Rope	Note		
			Rope Used	What materials did you use?	Select Multiple	Twine/Cotton String	Shelter Type Variation
						Guy Rope	
						Wool tension band (roof)	
						Wool tension band (walls)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.7.2.	Rope availability and Preference	Rope Reasons for Use	Why did you use these materials?	Select Multiple	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	
	A.7.3.		Rope Location	Where did you get the materials?	Select Multiple	Purchased in the local market	Shelter Type Variation
						Collected from nature	
						Inherited	
						Specially imported	
						Other (specify)	
	A.7.4.		Rope Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes	Shelter Type Variation
						No	
	A.7.5.		Specific Rope Preferred	What materials would you have preferred to use?	Select Multiple	Twine/Cotton String	Shelter Type Variation
						Guy Rope	
						Wool tension band (roof)	
						Wool tension band (walls)	
	A.7.6.		Rope Preferred Not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
	A.8.1.	Other material availability and Preference	N/A	Other Materials	Note	N/A	N/A
			Other Materials Used	What materials did you use?	Select Multiple	Steel I-beam	Shelter Type Variation
						Leather thongs	
						Tent stakes	
						Steel pins	
						Nails	
						Corner Brace	
						Rain Gutter (metal)	
						Other (Specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill-related construction costs across all of Afghanistan's provinces?	A.8.2.	Other material availability and Preference	Other Materials Reasons for Use	Why did you use these materials?	Select Multiple	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	
	A.8.3.		Other Materials Location	Where did you get the materials?	Select Multiple	Purchased in the local market	Shelter Type Variation
						Collected from nature	
						Inherited	
						Specially imported	
						Other (specify)	
	A.8.4.		Other Materials Preferred	Are there materials that you would have preferred to use instead of the ones that you did?	Select One	Yes	Shelter Type Variation
						No	
	A.8.5.		Specific Other Materials Preferred	What materials would you have preferred to use?	Select Multiple	Steel I-beam	Shelter Type Variation
						Leather thongs	
						Tent stakes	
						Steel pins	
						Nails	
						Corner Brace	
						Rain Gutter (metal)	
						Other (Specify)	
	A.8.6.		Specific Other Materials Preferred Not Used	Why did you not use the preferred materials?	Select Multiple	We could not afford the material	Shelter Type Variation
						Insects eat the materials	
						We could not afford the labour	
						The Materials were not available	
						The materials were not appropriate for the climate or environment	
						The materials do not last long enough	
						The materials are difficult to repair or maintain	
						Other (specify)	
		Plot information	N/A	You will now be asked about how the plot is arranged. These questions involve all buildings located on the plot, and not just the shelter.			N/A
	B.1		Plot location	What type of land is the plot located on?	Select One	Fields	Shelter Type Variation
						Sloped Land or hillside	
						Top of a hill	
						Next to a River/Valley	
						Next to Lake	
						Other (Specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance, and repair by communities by region across Afghanistan?	B.2	Plot Information	Plot location reason	Why is the shelter constructed there?	Select Multiple	Protected from rain or wind	Shelter Type Variation
						More resistant to natural disasters (flooding, earthquakes, etc.)	
						Inherited from family or marriage	
						Only land available	
						Other (specify)	
	B.3		Plot distance	How close is the shelter/ plot of land to those shelters from other households?	Select One	Shelter/plot is far from other household's plots, and has space between both	Shelter Type Variation
						Shelter/plot is next to other households plots	
						Shelter/plot is constructed between existing plots	
						Shelters are connected to other household's shelters on the same plot	
	B.4		Number of shelters on Plot	How many shelters that people sleep in or live in are located on the plot of land?	Integer	Enter Integer	Shelter Type Variation
	B.5		Buildings on plot	What types of buildings are located on each plot?	Select Multiple	Storage building	Shelter Type Variation
						Toilet/latrine	
						Water source	
						Kitchen	
						Separate shelter for women/men	
						Separate shelter for adults/children	
						Guest house	
						Animal housing	
						Other (specify)	
	B.6		Plot location environment concerns	Are there any environmental concerns about the plot of land?	Select Multiple	Exposed to wind	Shelter Type Variation
						Prone to flooding	
						Exposed to avalanche	
						Earthquakes are common	
						Exposed to cold/blizzards	
						Exposed to sun/drought	
						Other (specify)	
	B.7		Plot location social concerns	Are there any security or access concerns about the location of this plot of land?	Select Multiple	Exposed to criminals/crime	Shelter Type Variation
						Exposed to armed groups/conflict	
						Far from roads or markets	
						Far from public services (water, sanitation, health, schools)	
						Other (specify)	
	C.1.1.	Shelter preferences	Other shelter type variations preferred	You will now be asked about your shelter preference. This can be the shelter you would prefer to build, but don't have the resources or materials to build instead.			Note
				Are there other shelter types or variations that you would have preferred to build?	Select One	Yes	Shelter Type Variation
						No	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance, and repair by communities by region across Afghanistan?	C.1.2.	Shelter preferences	Shelter type preferred	Which shelter type would you prefer to build?	Select One	Black Tent	Shelter Type Variation
						Cotton Tent	
						Yurt	
						Hut	
						Curved roof construction	
						Flat roof construction	
	C.1.3.		Shelter type variation preferred	Which shelter type variation would you prefer to build?	Select One	List of shelter variations based on shelter type	Shelter Type Variation
			Shelter type variation preference reason	Why do you prefer a different shelter type?	Select One	It is safer/more secure	Shelter Type Variation
						It protects against the climate better (keeps shelter warm/cool)	
						It is mobile/not mobile	
						It lasts a longer time	
						It requires less repairs/maintenance	
						It is part of our culture	
						Other (Specify)	
	C.1.4.		Reason for not building preferred shelter type	Why did you not build your preferred shelter type instead?	Select Multiple	Households do not have enough money to build the preferred shelter	Shelter Type Variation
						The materials for the preferred shelter are not available	
						It is mobile/not mobile	
						Skills needed to make repairs maintenance are not available	
						Shelter type is not accepted by the culture	
						No land was available	
						Other (Specify)	
	C.1.6.		Shelter type prevalence	How common is this shelter in this area?	Select One	Everyone uses the same shelter type	Shelter Type Variation
						Almost everyone uses the same shelter type	
						Most households use this shelter type	
						About half of households use this shelter Type	
						Some, but not most, households use this shelter type	
						Very few households use this shelter type	
	C.1.7.		Reason shelter type chosen	Why is this particular shelter used by the household?	Select One	We think this is the best shelter for this environment	Shelter Type Variation
						We want a better shelter, but cannot afford the materials or construction costs	
						This shelter fits our lifestyle best (mobile/ sedentary)	
						Living in this shelter is part of our culture/ our people use this shelter	
						We inherited this shelter from a relative or friend	
						Other (Specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
	C.1.8	Shelter preferences	Other locations shelter type is used	Is this shelter used in any other provinces in Afghanistan?	Select One	Yes No Don't Know	Shelter Type Variation
	C.1.9.			In which other provinces in Afghanistan do you know that this shelter is used?	Select Multiple	List of Provinces	Shelter Type Variation
	E.2.7.	Shelter repair	Shelter can be repaired	If the shelter is damaged, are you able to repair it by yourself?	Select One	Yes No	Shelter Type Variation
	E.2.8.		Reasons why shelter cannot be repaired by occupants	If not, why are you not able to repair it by yourself?	Select Multiple	Requires special skills the household does not have. I don't have the money to repair the shelter. The materials are difficult to find. If the shelter is damaged it is no longer safe to live in Other (Specify)	Shelter Type Variation
	E.2.9.		Special skills are required to repair shelter	Are any special skills required in order to repair the shelter?	Select One	Yes No	Shelter Type Variation
	E.2.10		Types of special skills required to repair shelter	What special skills are needed to repair the shelter?	Select Multiple	Design of shelter repair Weaving chegh/buria/thatching Construction of shelter foundation/walls/ frame Making mortar, pakhsa, or bricks Yurt making (wool bands, wood lattice, roofing, etc.) Roof construction Finding shelter materials Other	Shelter Type Variation
	F.1	Natural disaster preparedness	Natural disasters can affect shelter	Now I would like to ask about how your household prepared for weather extremes, including disasters and winters.			Note
				Do any natural disasters commonly occur here? (example: earthquake, flooding, sandstorms, etc.)	Select One	Yes No	Shelter Type Variation
	F.2		Types of natural disasters that can affect shelter	Which types of natural disasters occur here?	Select Multiple	Earthquake Flooding Sandstorm Blizzard Landslide Other	Shelter Type Variation

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance, and repair by communities by region across Afghanistan?	F.3	Natural disaster preparedness	Methods used to help shelter withstand disasters	What do you do to help your shelter resist the effects of the natural disaster?	Select Multiple	Design shelter to resist natural disasters	Shelter Type Variation
						Reinforce foundations/load bearing components (e.g. sandbags or braces)	
						Move household to a different location where natural disasters are less likely	
						Use disaster – resistant shelter materials	
						Nothing	
						Other	
	F.4		winterization preparation	Do you do anything to prepare your household for winter?	Select One	Yes	Shelter Type Variation
						No	
	F.5		Methods of winterization preparation	What do you do?	Select Multiple	Upgrade shelter construction (such as thickening walls or roof or adding Palas to tent) to trap heat	Shelter Type Variation
						Reinforce foundations/load bearing components (e.g. sandbags or braces)	
						Move to warmer parts of Afghanistan or another country	
						Add insulation to household to trap heat	
						Use more blankets to keep household warmer	
						Buy stove and fuel	
						Other	
Metadata	F.6	Location	Location	Please take a GPS point of the location of the shelter	GPS	N/A	N/A
	F.7	N/A	N/A	You have now completed the architectural survey. Please continue with the Key Informant Interview (KII) tool on the same shelter, to acquire additional information.	note	N/A	N/A

ANNEX V: SHELTER DESIGN TOOL

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
Metadata		N/A	N/A	Engineer ID	Integer	N/A	Shelter Type Variation
		N/A	N/A	My name is [[name]] and I work for ACTED. On behalf of UNHCR and the Emergency Shelter and NFI Cluster, we are conducting an assessment of local shelter types across Afghanistan. As part of this assessment we would like to photograph your shelter and draw architectural designs of it, as well as ask you a few questions about the construction, maintenance, and repair of your shelter, as well as how you keep it comfortable to live in during different weather and seasons. The information will be used by UNHCR and other NGOs to adjust their emergency and transitional shelter responses to better reflect the construction of local shelter types around Afghanistan. This assessment should take 20 to 30 minutes. Any information that you provide will be confidential and anonymous. This is voluntary and you can choose not to answer any or all of the questions; however we hope that you will participate since your views are important. Participation in the survey does not have any impact on whether you or your family receive assistance. Do you have any questions?			Shelter Type Variation
	M.1.1	N/A	N/A	Do you consent to participate in this survey?	Select One	Yes	Shelter Type Variation
						No	
	M.1.2	Shelter Expert	N/A	Are you a shelter expert within the community	Select One	Yes	Shelter Type Variation
						No	
	M.1.3	Shelter type	Shelter type	What is the shelter type that you are assessing?	Select One	Black Tent	Shelter Type Variation
						Cotton Tent	
						Yurt	
						Hut	
						Curved roof construction	
						Flat roof construction	
	M.1.4	Shelter type variation	Shelter type variation	What is the shelter type variation that you are assessing?	Select One	List of shelter variations based on shelter type	Shelter Type Variation
	M.1.5	Shelter location	Shelter Location	Where is the shelter located?	Province	Province	Shelter type variation
					District	District	
					Village	Village	
	M.1.6	Enter shelter code	Shelter type – Shelter variation – Region – District – number – date	Enter the code of the interview according to the requested criteria	Text	Text	Enter shelter code

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What are the different shelter typologies and their associated material and skill related construction costs across all of Afghanistan's provinces?	A.1.1	Shelter photos	Front	Photography	Photo	Take a photo of the front of the shelter	Take Photo
	A.1.2		Left/ Right Side			Take a photo of the left or right side of the shelter	Take Photo
	A.1.3		Inside - Ceiling			Take a photo showing the back wall and ceiling from inside the shelter.	Take Photo
	A.1.4		Inside - Floor			Take a photo showing the back wall and floor from inside the shelter.	Take Photo
			Note	You will now be asked to make an architectural sketch of four perspectives (front, side, roof, inside floor plan) of the shelter you are observing. You will draw this on paper, and send scans of the drawing after you complete the survey.			Note
	A.2.1	Shelter design perspectives	Front Elevation	Architectural drawing	Shelter type variation	Please draw the front elevation of the shelter. Remember to include all measurement, materials, and quantities and dimensions of the materials used.	Note
	A.2.2		Side Elevation			Please draw the side elevation of the shelter. Remember to include all measurement, materials, and quantities and dimensions of the materials used.	Note
	A.2.3		Roof Design			Please draw the roof plan of the shelter. It should be drawn from a perspective of looking at the structure from above, including all of the materials inside of the roof. Remember to include all measurements, materials, and quantities and dimensions of the materials used.	Note
	A.2.4		Floor Inside Plan			Please draw the floor plan of the shelter. It should be drawn from a perspective of looking at the floor from above. Remember to include all measurement, materials, locations of doors and walls, and quantities and dimensions of the materials used.	Note
	A.2.5		Cross Section			Please draw a cross-section of the shelter. This should be a side view of the shelter, with a view inside the shelter floors, walls, and roof, in order to show the materials inside of them.	Note
	A.2.6		Plot Plan			Please draw a top-down view of the entire plot. This should have the compound walls, and any other buildings that are also on the plot, including other shelters, storage buildings, water points, latrines/ toilets, and public spaces.	Note
What are the different shelter typologies and their associated material and skill related	A.3.1	Shelter design perspectives	Drawing Reminder	Drawing Reminder	Drawing Reminder	Please check to ensure that all four shelter design perspectives have been drawn and labelled.	Note
	A.3.2					Please check to ensure than all items used in the shelter designs are labelled, and their sizes and dimensions have been recorded.	Note
	A.3.3					Please check to make sure the dimensions of all sides of each of the shelter designs have been recorded.	Note
	A.3.4					Please re-check the list of all materials used, and include the quantity of items.	Note

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance , and repair by communities by region across Afghanistan?	A.4.1	Shelter design practices	Foundation	Now we will ask about building practices in the area across several different dimensions, including foundation, structure, roofing, walls, windows and doors, and connections. Please answer to the best of your knowledge.			Note
	A.4.2			You will now be asked about the foundation of the shelter			Note
	A.3.1			Is the shelter built directly on the ground, or elevated from the ground in any way?	Select One	No, shelter is built directly on the ground without any extra materials or elevation	Shelter Type Variation
						Shelter is built on top of other materials (wood, stone, etc.) but not elevated off of the ground	
						Shelter is elevated by wood (either stilts or wood frame)	
						Shelter is built on a plinth, or a foundation that raises the shelter off the ground	
	A.3.2			If a plinth is used, what is the plinth made of?	Select One	Wood	Shelter Type Variation
						Dirt or earth mound	
						Bricks (either sun-dried or fired)	
						Cement	
						Stones	
						Other (specify)	
	A.3.3			Why is the shelter elevated?	Select One	Protects shelter from natural disasters (flooding, avalanche, etc.)	Shelter Type Variation
						Protects shelter from environment (insects, animals, wind, etc.)	
						Keeps shelter stable and stronger	
						Makes shelter last longer	
						Is it a part of the local culture	
						It is a status symbol/done to show wealth or power	
						Other (specify)	
	A.3.4			Why is the shelter not elevated?	Select One	It is too expensive to build	Shelter Type Variation
						The materials to build it are not available	
						We do not build them as part of our culture	
						Protection is not needed	
						Other (specify)	
	A.4.1	Shelter design practices	Main Structure	You will now be asked about the main structure of the shelter, including the frame, how the structure is reinforced and strengthened and the materials			Note
	A.4.2			Does the shelter have an kind of frame around which the walls and ceiling are constructed?	Select One	Yes	Shelter Type Variation
						No	
	A.4.3			What material is the frame made from?	Select One	Wood	Shelter Type Variation
						Steel/ other metal	
						Bamboo	
						Stone	
						Rope (shelter tied down)	
						Other (specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance , and repair by communities by region across Afghanistan?	A.4.4	Shelter design practices	Main Structure	Is anything done to reinforce the frame/ structure to make it stronger?	Select One	Yes	Shelter Type Variation
						No	
	A.4.5			Why is the shelter reinforced?	Select One	Protects shelter from natural disasters (flooding, avalanche, etc.)	Shelter Type Variation
						Protects shelter from environment (insects, animals, wind, etc.)	
						Keeps shelter stable and stronger	
						Makes shelter last longer	
						Is it a part of the local culture	
						It is a status symbol/done to show wealth or power	
						Other (specify)	
	A.4.6			Why is the shelter not reinforced?	Select One	It is too expensive to build	Shelter Type Variation
						The materials to build it are not available	
						We do not build them as part of our culture	
						Protection is not needed	
						Other (specify)	
	A.5.1		Roof	You will now be asked about the roof of the structure			Note
	A.5.2			What shape is the roof?	Select One	Dome	Shelter Type Variation
						Conical	
						Flat	
						Angled	
						Round (cylinder)	
	A.5.3			Why is the roof shaped this way?	Select Multiple	Protects from rain/snow build-up	Shelter Type Variation
						Shelter stays cool/warm more easily	
						Easy to maintain	
						More resistant to natural disasters	
						Is it a part of the local culture	
						It is a status symbol/done to show wealth or power	
						Other (specify)	
	A.6.1		Walls	You will now be asked about the walls of the shelter			Note
	A.6.2			What shape are the walls?	Select One	Round	Shelter Type Variation
						Flat	
						Other (specify)	
	A.6.3			Why is the wall shaped like this?	Select Multiple	More resistant to wind	Shelter Type Variation
						More resistant to snow/rain build up	
						Easier to maintain or repair	
						Lasts longer without repairs	
						More affordable	
						Keeps shelter cooler in summer and warmer in winter	
						Shelters are constructed this way as part of our culture	
						Other (specify)	

Research questions	IN #	Indicator / Variable	Sub-Indicator / Variable	Question	Question Type	Question Label	Data collection level
What differences exist in shelter type, materials, methods of construction, maintenance , and repair by communities by region across Afghanistan?	A.6.4	Shelter design practices	Walls	Are there windows in the shelter?	Select One	Yes	Shelter Type Variation
						No	
	A.6.5			If not, why not?	Select Multiple	Feature weakens the structure walls	Shelter Type Variation
						Feature makes the shelter too cold in winter or too warm in summer	
						We don't have materials for the feature	
						The community does not have anyone with the skills to make the feature	
						The feature is unnecessary	
						It is not part of the culture	
						No reason. It just wasn't done	
						Other (specify)	
	A.6.6			Do the windows have frame (jambs/ lintels)?	Select One	Yes	Shelter Type Variation
						No	
	A.6.7			If not, why not?	Select Multiple	Feature weakens the structure walls	Shelter Type Variation
						Feature makes the shelter too cold in winter or too warm in summer	
						We don't have materials for the feature	
						The community does not have anyone with the skills to make the feature	
						The feature is unnecessary	
						It is not part of the culture	
						No reason. It just wasn't done	
						Other (specify)	
	A.7.1	Shelter design practices	Connections	You will now be asked about connections, including ties, nails, and anything used to hold different parts of the shelter together.			Note
	A.7.2			What things are used to connect the different parts of the structure?	Select One	Leather thongs	Shelter Type Variation
						Nails	
						String	
						Pins	
						Rope	
						Glue	
						Other (specify)	
	A.7.3			Why are these materials used?	Select One	The connection absorbs shocks better	Shelter Type Variation
						The connection can hold more weight	
						The materials are cheaper/easier to find	
						The materials are newer	
						The materials are used for cultural reasons	
						Other (specify)	