



አዲስ አበባ ዩኒቨርሲቲ  
ADDIS ABABA UNIVERSITY  
SINCE 1950

---

## **Assessing the Spatial Characteristics and Adequacy of Housing in Refugee Camp: The case of Kebribeyah Jijiga Refugee Camp**

---

This thesis is submitted to the Department of Urban and Regional Planning (DURP), School of Built Environment (SBU), College of Technology and Built Environment (CTBE), Addis Ababa University for partial fulfilment of all requirements of Master of Science Degree in Housing and Sustainable Development.

Author

Keniko Duguma Guta

Main advisor

Yonas Alemayehu Soressa

Co-advisor

Biruk Kebede Geletu

Addis Ababa, Ethiopia

June 2025

This thesis is submitted to the Department of Urban and Regional Planning (DURP), School of Built Environment (SBU), College of Technology and Built Environment (CTBE), Addis Ababa University for partial fulfilment of all requirements of Master of Science Degree in Housing and Sustainable Development.

Title of Thesis: Assessing the Spatial Characteristics and Adequacy of Housing in Refugee Camp: The case of Keberibeya Refugee Camp Jijiga, Ethiopia

Author: KENIKO DUGUMA GUTA

Email: keniko.duguma.edu@gmail.com

Date: May, 2025

Approved by the Examining Board:

_____	_____	_____
<b>Main Advisor</b>	<b>Signature</b>	<b>Date</b>
_____	_____	_____
<b>Co-advisor</b>	<b>Signature</b>	<b>Date</b>
_____	_____	_____
<b>External Examiner</b>	<b>Signature</b>	<b>Date</b>
_____	_____	_____
<b>Internal Examiner</b>	<b>Signature</b>	<b>Date</b>
_____	_____	_____
<b>Chair Person</b>	<b>Signature</b>	<b>Date</b>

## **Declaration**

I declare that, this thesis prepared for the partial fulfilment of the requirements for the degree of Masters of Science in Housing and Sustainable Development entitled “Assessing the Spatial Characteristics and Adequacy of Housing in Refugee camp: The case of Kebribeyah Refugee Camp Jijiga, Ethiopia” is my original research work prepared independently by my own effort with the close advice and guidance of my adviser. I also declare that this thesis has not been presented in any university and all sources that I have used or quoted have been indicated and acknowledged by means of complete references.

**KENIKO DUGUMA GUTA**

Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Certification**

Here with, I state that Keniko Duguma Guta has carried out this research work on “Assessing the Spatial Characteristics and Adequacy of Housing in Refugee camp: The case of Kebribeyah Refugee Camp Jijiga, Ethiopia” under my supervision and it is sufficient for submission for the partial fulfilment for the award of MSc Degree in Sustainable Housing and Environment

Main Advisor Name: Yonas Alemayehu Soresa

Signature \_\_\_\_\_ Date \_\_\_\_\_

Co Advisor Name: Biruk Kebede Geletu

Signature \_\_\_\_\_ Date \_\_\_\_\_

## **ABSTRACT**

*Refugees often face numerous challenges when seeking suitable housing in host countries. Despite the importance of housing in ensuring the dignity and well-being of refugees, a significant issue persists regarding the adequacy of housing in refugee camps, which remains unresolved over time. This research assesses the spatial characteristics and adequacy of housing in a refugee context, particularly in the Kebribeyah refugee camp in Jijiga, Ethiopia, through a combination Descriptive and Exploratory research approach with mixed method. Surveys, Interviews, and Spatial Analysis were used to provide comprehensive data on housing adequacy by integrating both lived experiences and physical camp conditions. The research findings show that the majority of shelters are overcrowded, dilapidated, and prone to various environmental hazards. The camp settlement exhibits an organic and amorphous pattern, which limits access to basic services, including safe drinking water, sanitation, and energy. Despite the long-established history of the camp, the tension between host communities and refugees in land tenure persists, contributing to the fear of forced eviction. Overall, the camp is affected by overcrowding, poor housing conditions, and limited access to basic services. In conclusion, the Kebribeyah refugee camp faces significant challenges in providing adequate shelter for refugees who have resided in the camp for over three decades. Therefore, based on the research findings, it is recommended that an intervention be implemented to support community- and expert-driven shelter construction and settlement planning, with a balanced distribution of basic services and integration of host communities through a defined framework, to enhance sustainable development through housing adequacy.*

**Keywords:** *Adequate Housing, Refugee, Refugee Shelter, Refugee Settlement*

## **ACKNOWLEDGEMENT**

I would like to give my deepest gratitude to God who gave me the strength to complete this research. I also want to thank my beloved family and husband for being very supportive throughout this journey. I would like to thank my advisors Yonas Alemayehu and Biruk Kebede for their guidance throughout all the steps doing this thesis. Last but not least I want to thank Refugee and Returnees Service, Ethiopia especially Jijiga field office for allowing me to conduct this research and facilitate necessary thing to make the data collection in Kebribeyah Refugee camp a success story and also, I want to thank all the respondent for their willingness to be part of this research.

Keniko Duguma

June 2025

## **TABLE of CONTENTS**

LIST of FIGURES .....	VIII
LIST of TABLES.....	XIII
ACRONYMS.....	XIV
LIST OF LOCAL TERMS .....	XV
GENERAL NOTES .....	XV
CHAPTER ONE: INTRODUCTION.....	1
1.1    Background .....	1
1.2    Statement of the Problem .....	2
1.3    Research Objectives .....	3
1.3.1    General Objective .....	3
1.3.2    Specific Objectives .....	4
1.4    Research Questions .....	4
1.5    Significance of the Study .....	4
1.6    Scope of the Study.....	5
1.6.1    Thematic Scope.....	5
1.6.2    Spatial Scope.....	6
1.6.3    Temporal Scope .....	6
1.7    Limitation of the Study .....	6
1.8    Structure of the Thesis.....	7
CHAPTER TWO: LITERATURE REVIEW .....	9
2.1    Theoretical Framework .....	9
2.1.1    Sustainable Development Theory .....	9
2.1.2    Adequate Housing .....	14
2.1.3    Refugee Housing and Settlement Theories .....	15

2.2	Contextual Review .....	19
2.2.1	Refugee Situation Globally .....	19
2.2.2	Refugee Situation in Africa .....	23
2.2.3	Refugee Situation in Ethiopia .....	24
2.3	Conceptual Framework .....	26
2.4	Summary of Literature Review .....	27
CHAPTER THREE: METHODOLOGY .....		31
3.1	Research Design and Approach .....	31
3.2	Case Study Selection Criteria and Process .....	33
3.2.1	Selection Criteria .....	33
3.2.2	Selection Process .....	34
3.3	Description of Study Area .....	34
3.3.1	Location and Environmental Context .....	34
3.3.2	Historical and Demographic Background .....	35
3.3.3	Camp Administrative System .....	36
3.3.4	Why Kebribeyah Refugee Camp? .....	36
3.4	Sampling Design .....	37
3.4.1	Sampling Technique .....	37
3.4.3	Sample Population and Sample Unit .....	38
3.5	Data Source .....	39
3.6	Data Collection Techniques .....	39
3.6.1	Quantitative Method .....	39
3.6.2	Qualitative Method .....	39
3.7	Data Analysis and Presentation Techniques .....	40
3.8	Validity of the Study .....	41

CHAPTER FOUR: RESULTS AND DISCUSSION .....	42
4.1 Demographic and Household Profile .....	42
4.1.1 Respondent Profile.....	42
4.1.2 Household Profile .....	48
4.2 Refugee Shelters and Settlement in Kebribeyah Camp .....	51
4.2.1 Refugee Settlement Pattern.....	51
4.2.2 Shelter in Kebribeyah Camp.....	69
4.3 Shelter Adequacy in Kebribeyah Camp .....	90
4.3.1 Security of Tenure.....	90
4.3.2 Availability of Basic Service .....	92
4.3.3 Habitability .....	96
4.3.4 Accessibility.....	105
4.3.5 Location .....	109
4.3.6 Cultural Adequacy .....	119
4.4 Aspiration for Improving Shelter Adequacy .....	122
4.4.1 Future Aspiration and Expectation .....	122
4.4.2 Improvement for Refugee Shelter Adequacy .....	123
4.5 Summary of Findings .....	123
4.5.1 Historical Evolution and Current Physical Condition Shelter and Settlement in Kebribeyah Refugee Camp.....	123
4.5.2 Refugee Shelter Adequacy in Kebribeyah Refugee Camp.....	125
4.5.3 Refugee Shelter Adequacy Enhancement Strategies .....	127
CHAPTER 5 CONCLUSION AND RECOMMENDATION .....	129
5.1 Conclusion .....	129
5.2 Recommendation.....	130
5.2.1 Specific Recommendation – Kebribeyah Refugee Camp.....	131

5.1.2 General Recommendation.....	132
REFERENCES .....	134
ANNEXS .....	144
Annex I: Publishable Manuscript.....	144
Annex II: Research Instrument English Version .....	173
Annex III: Research Instrument Somali Version.....	201

## **LIST of FIGURES**

Figure 2.1-1 Overlapping Themes of Sustainability Paradigm .....	10
Figure 2.4-1 Contextual Framework Diagram.....	27
Figure 2.5-1 Research Framework.....	33
Figure 2.7.1-1 Keberibeya Refugee Camp Location Map.....	34
Figure 2.7.1-2 Relative Location Map of Kebribeyah Refugee Camp (Google Earth Satelliet, 2025) .....	35
Figure 2.7.1-3 Kebribeyah Refugee Camp Administrative Map.....	36
Figure 4.1-1 Refugee Area of Origin.....	45
Figure 4.1-2 Refugee Area of Origin Map.....	45
Figure 4.1-3 Household age group.....	48
Figure 4.1-4 Household Education Level .....	50
Figure 4.1-5 Household Members with Special Needs .....	51
Figure 4.2-1 Aerial View of Kebribeyah Refugee Camp .....	52
Figure 4.2-2 Settlement timeline chronology .....	53
Figure 4.2-3 Settlement Growth Map.....	54
Figure 4.2-4 Settlement Timeline .....	56
Figure 4.2-5 Settlement Zonal Classification Map.....	57
Figure 4.2-6 Camp Settlement Pattern.....	58
Figure 4.2-7 Slop Analysis and Contour.....	59
Figure 4.2-8 Street Network Map .....	61
Figure 4.2-9 Street Section .....	61

Figure 4.2-10 Linkage map 1 .....	62
Figure 4.2-11 Linkage Map 2 .....	63
Figure 4.2-12 Street Hierarchy Map .....	64
Figure 4.2-13 Street Accessibility in Kebribeyah Camp .....	65
Figure 4.2-14 Street Accessibility Map .....	65
Figure 4.2-15 Street Density Map.....	66
Figure 4.2-16 Street Pavement material within the Refugee camp .....	67
Figure 4.2-17 Settlement Street Material.....	67
Figure 4.2-18 Settlement Land use Map.....	69
Figure 4.2-19 Shelter Evolution Timeline .....	70
Figure 4.2-20 Camp Arrival Year.....	71
Figure 4.2-21 Refugee Shelter Type.....	72
Figure 4.2-22 Typical Refugee Shelter in Kebribeyah .....	72
Figure 4.2-23 Block Type A.....	73
Figure 4.2-24 Block Type B .....	74
Figure 4.2-25 Block Type C .....	74
Figure 4.2-26 Block Type D.....	75
Figure 4.2-27 Case Study Shelter 01 .....	77
Figure 4.2-28 Case Study Shelter 02 .....	77
Figure 4.2-29 Case Study Shelter 03 .....	78
Figure 4.2-30 Case Study Shelter 04 .....	78
Figure 4.2-31 Case Study Shelter 05 .....	79
Figure 4.2-32 Case Study Shelter 06 .....	79
Figure 4.2-33 Case Study Shelter 07 .....	80
Figure 4.2-34 Case Study Shelter 08 .....	80
Figure 4.2-35 Case Study Shelter 09 .....	81
Figure 4.2-36 Shape and Position of Refugee Shelter .....	82
Figure 4.2-37 Indoor and Outdoor Space Relationships.....	83
Figure 4.2-38 Functional Analysis.....	84
Figure 4.2-39 Number of Rooms per Shelter.....	85
Figure 4.2-40 Sample interior Space of Refugee Shelters .....	85

Figure 4.2-41 Shelter Space accommodation for Living, sleeping and cooking .....	86
Figure 4.2-42 Shelter Cooking Space .....	86
Figure 4.2-43 Shelter Bath Room Types .....	87
Figure 4.2-44 Shelter Cooking and Bath Room Location .....	88
Figure 4.2-45 Shelter General Satisfaction Rate.....	88
Figure 4.2-46 Shelter Exterior Look.....	89
Figure 4.3-1 Refugee Perception towards Tenure .....	90
Figure 4.3-2 Shelter Safety and Security .....	91
Figure 4.3-3 Example of Refugee shelter and Host community house in single plot .....	91
Figure 4.3-4 Integration of Refugee Settlement and Host community Land Tenure .....	92
Figure 4.3-5 Rain Water collection and Storage.....	92
Figure 4.3-6 Basic Service with in Shelter Compound.....	93
Figure 4.3-7 Basic Service around Camp Settlement .....	94
Figure 4.3-8 Administrative & Food Distribution Service Area .....	94
Figure 4.3-9 Primary & Secondary School, Worship area .....	95
Figure 4.3-10 Settlement Service Map .....	96
Figure 4.3-11 Space Analysis in terms of Size.....	97
Figure 4.3-12 Shelter Space Importance.....	98
Figure 4.3-13 Summary of Space Importance .....	99
Figure 4.3-14 Shelter Interior Space decoration .....	99
Figure 4.3-15 Shelter Weather Protection .....	100
Figure 4.3-16 Shelter Construction Material .....	102
Figure 4.3-17 Shelter Construction Techniques .....	103
Figure 4.3-18 Traditional Shelter – Aqal Construction Procedures .....	104
Figure 4.3-19 Refugees repairing and making new shelter Construdtion material .....	105
Figure 4.3-20 Camp Opportunities .....	106
Figure 4.3-21 Refugee Resettlemnt USA .....	107
Figure 4.3-22 Shelter and Settlement accessibility regarding disadvantaged groups.....	108
Figure 4.3-23 Shelter Compound as used ad recreational / green space .....	110
Figure 4.3-24 Basic Service location around Shelter compound.....	110
Figure 4.3-25 RRS Field office used as main social gathering center.....	111

Figure 4.3-26 Shelter compound used as playground and social gathering space.....	112
Figure 4.3-27 Basic service location around Shelter Settlement .....	112
Figure 4.3-28 Shelter Location Safety .....	113
Figure 4.3-29 Refugee experience with the past 5 years. ....	114
Figure 4.3-30 Effect of heavy rain and Wind during data collection .....	115
Figure 4.3-31 Shelter Safety from Pollution` \ .....	116
Figure 4.3-32 Informal Waste disposal Dump.....	117
Figure 4.3-33 Camp Safety and Security Experience.....	118
Figure 4.3-34 Social and Cultural Perceptions .....	120
Figure 4.3-35 Refugee Focused Group Discussion .....	121
Figure 4.4-1 <i>Future Expectations</i> .....	122
Figure 0-1 Keberibeya Refugee Camp Location Map.....	150
Figure 0-2 Refugee Area of Origin Map.....	152
Figure 0-3 Household age group.....	152
Figure 0-4 Household Education Level .....	153
Figure 0-5 Settlement Growth Map .....	153
Figure 0-6 Street Network Map .....	153
Figure 0-7 Street Section .....	153
Figure 0-8 Street Accessibility in Kebribeyah Camp .....	154
Figure 0-9 Shelter Evolution Timeline .....	154
Figure 0-10 Typical Refugee Shelter in Kebribeyah .....	154
Figure 0-11 Block Sample .....	155
Figure 0-12 Case Study Shelters.....	156
Figure 0-13 Shape and Position of Refugee Shelter .....	157
Figure 0-14 Indoor and Outdoor Space Relationships.....	157
Figure 0-15 Functional Analysis.....	157
Figure 0-16 Number of Rooms per Shelter.....	158
Figure 0-17 Shelter Space accommodation for Living, sleeping and cooking.....	158
Figure 0-18 Shelter General Satisfaction Rate.....	158
Figure 0-19 Refugee Perception towards ownership and Tenure.....	159
Figure 0-20 Shelter Safety and Security .....	159

Figure 0-21 Basic Service with in Shelter Compound.....	160
Figure 0-22 Settlement Service Map .....	160
Figure 0-23Space Analysis in terms of Size.....	160
Figure 0-24 Shelter Weather Protection .....	161
Figure 0-25 Summary of Space Importance .....	161
Figure 0-26Shelter Interior Space decoration.....	161
Figure 0-27 Shelter General Satisfaction Rate.....	162
Figure 0-28 Shelter and Settlement accessibility regarding disadvantaged groups.....	162
Figure 0-29 Camp Opportunities .....	162
Figure 0-30 Refugee Resettlemnt USA .....	162
Figure 0-31 Basic Service location around Shelter compound.....	163
Figure 0-32helter Location Safety .....	163
Figure 0-33 Refugee experience with the past 5 years. ....	163
Figure 0-34helter Safety from Pollution.....	164
Figure 0-35 Camp Safety and Security Experience .....	164
Figure 0-36 Social and Cultural Perception.....	165
Figure 0-37Future Expectation in Shelter Improvement .....	165

## LIST of TABLES

Table 2.1-1 Three pillar of Sustainable development.....	10
Table 2.1-2 Three pillar of Sustainable development in refugee context.....	12
Table 2.2-1 Indicator for adequacy of housing.....	14
Table 2.3-1 Summary of Shelter Guidelines from UNHCR Emergency handbook.....	20
Table 2.3-2 Summary shelter and settlement guideline from Sphere Standard.....	21
Table 2.5-1 Literature Review Relevance based on research objective .....	29
Table 4.1-1 Respondent Age Group .....	42
Table 4.1-2 Respondent Gender .....	43
Table 4.1-3 Respondent Education Level .....	44
Table 4.1-4 Location and Ownership of Previous Residence.....	46
Table 4.1-5 Type and Duration of Previous Residence .....	47
Table 4.2-1 Shelter Selection Matrices.....	76

## ACRONYMS

Acronym	Definition
AU	African Union
CRRF	Comprehensive Refugee Response Framework
CRRS	Comprehensive Refugee Response Strategy
GBV	Gender Based Violence
IASC	Inter- Agency Standing Committee Guidelines
IDP	internally displaced people
IGAD	Intergovernmental Authority on Development
NGO	None Governmental Organization
OAU	Organization of Africa Unity
OCP	Out of Camp Policy
PCRD	Post Conflict Reconstruction and Development
RRS	Refugee and Returnees Service
SDGs	United Nation Sustainable Development Goals
UNHCR	United Nations High Commissioner for Refugees

## **LIST OF LOCAL TERMS**

Local Terms	Definition
Aqal	A Traditional Nomadic Somali House
Tsedey	A Climatic Season from September up to December
Chat/ Khat	A Chewable Stimulant Drug
Dhigo	Flexible arched frames from trees Basic material to form the dome structure of Aqal
Lool	Thin sticks woven between the Dhigo to add horizontal stability to the dome frame
Udub dhexaad	Central support wooden pole added as vertical stability to the dome frame/Dhigo
Alay	Woven mats made from tree leaves or grasses used for covering wooden stick frame

## **GENERAL NOTES**

1. All tables, photographs, and figures included in the research are the original work of the author where the source is not indicated
2. The years mentioned throughout the thesis are in the Gregorian Calendar
3. All the area measurements throughout the thesis are in SI Units (Metric system)

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background**

In recent years, the number of forcibly displaced people has become a growing concern, particularly in relation to sustainable development and humanitarian response. The leading causes of displacement are political and economic disparities that contribute to civil and regional conflict, natural and manmade disasters, and adverse climatic conditions. The consequential increase in the number of refugees seeking shelter and protection has led to a global refugee crisis. According to the United Nations High Commissioner for Refugees (UNHCR), there were more than 100 million forcibly displaced people worldwide in mid-2022. (UNHCR, 2022). According to Henkelmann (2020), refugees face numerous challenges before fleeing their home countries during their journey to safe areas, during resettlement, and in the future (Jens-R Henkelmann, 2020). During resettlement and forward, accessing adequate housing and shelter has a significant impact on their overall well-being (Brown, Gill, & P. Halsall, 2022). Inadequate housing and shelter can lead to overcrowding, poor sanitation, and inadequate access to essential services such as healthcare and education. (Marutlulle, 2022)

According to UNHCR Africa has been registered for the highest number of hosting refugees from globally, with Ethiopia among the top three host countries on the continent. (UNHCR, 2022). Currently, Ethiopia hosts an estimated 823,000 refugees, primarily from South Sudan, Somalia, and Eritrea (UNHCR, 2021). The Ethiopian government has had an open-door asylum policy since 2021 and in collaboration with international agencies, has adopted policies aimed at improving refugee integration and infrastructure, including the Comprehensive Refugee Response Framework (CRRF). However, challenges persist, particularly in providing dignified and sustainable housing within camp settings (UNHCR, 2021).

One of the oldest refugee camps in Ethiopia is Kebribeyah Refugee Camp, established in 1991 near Jijiga in the Somali Region. Initially intended as a temporary response to the influx of Somali refugees due to civil war, the camp has grown into a semi-permanent settlement. Over the past three decades, it has experienced unstructured spatial expansion

and poor infrastructure development, with many shelters still built from temporary or substandard materials. Despite periodic improvements, the camp remains a case study in the struggle for sustainable and adequate refugee housing in protracted displacement settings.

Housing adequacy, as defined by UN-Habitat, encompasses multiple dimensions, including legal security of tenure, availability of services, affordability, habitability, accessibility, location, and cultural adequacy. In refugee contexts, housing is not just a physical shelter—it is fundamental to human dignity, safety, and recovery. Inadequate housing conditions can exacerbate trauma, restrict access to essential services like healthcare and education, and hinder social integration. As such, assessing and improving housing adequacy is critical to upholding the rights and well-being of displaced populations, particularly in long-standing camps like Kebribeyah.

Furthermore, there is an emergent recognition of the significance of sustainable refugee shelter and housing globally (Vitale, 2005). The United Nation Sustainable Development Goals (SDGs) prioritize the need for adequate housing and shelter, as well as the importance of sustainable development specifically Goal 11: Sustainable Cities and Communities—emphasize the right to adequate housing for all, including displaced communities (United Nations, 2015). In Africa and within Ethiopia, there is also a growing recognition of the need to transition from emergency shelter provision to more sustainable, inclusive, and culturally appropriate refugee shelter solutions (UNHCR, 2019); (UN Habitat, 2008). In this regard, Kebribeyah Camp serves as a vital reference point for analyzing the effectiveness and adequacy of refugee shelter system in Ethiopia.

## **1.2 Statement of the Problem**

Refugees often face numerous challenges when seeking suitable housing in host countries. They have always been vulnerable to a range of human rights violations, which can further interfere with their ability to secure sustainable and adequate living conditions. (UNHCR , 2014). Providing adequate housing is a critical aspect of refugee camp management, as it has significant implications for the physical and emotional well-being of refugees.

Inadequate housing can result tension, conflict and poor health conditions for both the refugees and the host communities.

Ethiopia is one of the largest refugee-hosting countries in Africa, hosting around 821,283 of refugees from neighboring countries, including South Sudan, Somalia, and Eritrea (UNHCR U. N., 2023). Most of these refugees are housed in 24 refugee camp located in five regional states, while others live as urban refugees in the capital, Addis Ababa (UNHCR, 2021). Among these, the Kebribeyah Refugee Camp, located in the Somali Regional State, is one of the oldest refugee camps in Ethiopia and continues to host thousands of Somali refugees displaced by conflict and persecution (UNHCR, 2021).

Despite its longevity, Kebribeyah Refugee Camp suffers from chronic housing inadequacies. These include insufficient shelter space, structurally fragile materials, poor ventilation, climatic unsuitability, lack of access to water, sanitation, and electricity, and designs that fail to align with the cultural practices of Somali refugees. Many shelters are overcrowded, exposing households to risks such as poor health outcomes, privacy violations, and tensions within families and between neighboring households. These conditions are further exacerbated by the camp's unstructured spatial layout, aging infrastructure, and lack of coordinated upgrades or durable housing solutions.

However, there is a limited research that critically assesses the spatial characteristics and adequacy of housing in Kebribeyah Camp in relation to international standards, sustainable development principles, and the socio-cultural needs of its residents. This research seeks to fill that gap by analyzing the physical, functional, and cultural aspects of shelter adequacy in Kebribeyah Refugee Camp. The findings will contribute to improving shelter design, camp planning, and humanitarian policy for refugee-hosting communities in Ethiopia and beyond.

### **1.3 Research Objectives**

#### **1.3.1 General Objective**

- To investigate adequacy of housing in Kebribeyah, Jijiga Refugee Camp through an assessment of spatial characteristics of shelter and settlement layout.

### **1.3.2 Specific Objectives**

- To explore the historical evolution and current physical structure of shelter and settlements patterns in Kebribeyah, Jijiga Refugee Camp.
- To evaluate current physical structure of shelter and settlements pattern, and Kebribeyah Refugees lived experience based on international adequacy of housing indicators and standards.
- To recommend potential strategies to enhance housing conditions to achieve adequacy of housing in refugee camp in general, and in Kebribeyah, Jijiga Refugee Camp in particular.

### **1.4 Research Questions**

1. What are the spatial characteristics of housing and settlement pattern in Kebribeyah, Jijiga Refugee Camp?
2. How is the housing adequacy of Kebribeyah, Jijiga Refugee Camp?
3. What are the potential strategies to enhance spatial planning and adequacy of housing in Kebribeyah, Jijiga Refugee Camp?

### **1.5 Significance of the Study**

The study's significance lies in its ability to provide an understanding of refugee settlement patterns and housing adequacy within Kebribeyah, Jijiga Refugee camp in Ethiopia. The findings of the study will inform policymakers, humanitarian organizations, and practitioners about the specific challenges and potential strategies for improving housing conditions and promoting sustainable development in refugee camp.

The study holds relevance for a range of stakeholders:

- Urban planners and shelter designers will benefit from spatial analysis and culturally grounded recommendations, which can guide the design of more inclusive, climate-sensitive, and context-appropriate refugee housing solutions.
- Policymakers and government agencies (e.g., RRS, ARRA) will gain evidence-based inputs for formulating practical housing policies, allocating resources, and implementing long-term camp improvement plans.

- Humanitarian organizations and NGOs, including UNHCR and implementing partners, can use the findings to develop more integrated and community-centered interventions that enhance dignity, safety, and service delivery for refugees.
- Host communities stand to benefit from improved refugee housing conditions that reduce social and environmental tensions and promote shared access to services.
- Academic and research institutions will find this study useful in addressing empirical gaps in refugee housing studies, especially in the under-researched Somali Region of Ethiopia.

Overall, study will contribute to the social, economic, and environmental well-being of refugees and host communities in the Kebribeyah, Jijiga Refugee Camp, ultimately emphasizing a broader concepts of inclusiveness, human rightand sustainable development trajectory.

## **1.6 Scope of the Study**

The thematic and spatial scopes are presented below.

### **1.6.1 Thematic Scope**

Housing and Sustainable development is a broader subject. As a result, this study narrows the thematic area to adequate housing within refugee camps, which is a crucial aspect of achieving sustainable development especially in humanitarian context. The study specifically investigates the adequacy of housing in Kebribeyah Refugee Camp, emphasizing its role in meeting the physical, social, and cultural needs of refugees.

The study adopts the UN-Habitat’s adequacy framework, analyzing six of the seven indicators of adequate housing:

- Habitability
- Security of tenure
- Accessibility
- Cultural adequacy
- Availability of services, infrastructure, and materials,
- Location

- Affordability is excluded, as shelter provision in refugee camps is largely aid-based and not market-driven. The thematic investigation includes the physical structure of shelters, spatial layout, access to services, and the cultural relevance of shelter design.

### **1.6.2 Spatial Scope**

The spatial scope of this study is limited to Kebribeyah Refugee Camp, located in the Somali Regional State of Ethiopia, approximately 28 km southeast of Jijiga town. The camp, established in 1989, spans an estimated area of approximately 1.2 to 1.5 square kilometers (120–150 hectares) and currently hosts over 20,000 refugees, primarily from Somalia.

The study focuses on the spatial distribution of shelters, density patterns, land use, and infrastructure layout using GIS tools and camp layout maps, where available, to examine how spatial organization affects housing adequacy. Given the high population density and unstructured growth patterns in the camp, spatial factors are considered central to understanding overcrowding, accessibility, and service distribution.

### **1.6.3 Temporal Scope**

The temporal scope of this study extends from the camp's establishment in 1989 to the present day (2025). It traces the evolution of shelter types, settlement patterns, and housing interventions over time, capturing both historical development and current conditions. The study incorporates both longitudinal observations and cross-sectional field data to provide a comprehensive understanding of the housing situation.

### **1.7 Limitation of the Study**

The study is subject to limitations and boundaries that could impact its findings and generalizability. Since the study only focuses on a single refugee camp, the findings only represent refugee camps in similar or closer context or settings. Also, during field visits and desk review, the proper boundary of the camp was difficult to find, which further led to the researcher's decision to highlight the boundary referring to repeated boundary lines

found from UNHCR Kebribeya – Camp overview map as of July 2006, UN Habitat report on Kebribeyah settlement profile 2012 and Google Satellite Imagery 2025.

### **1.8 Structure of the Thesis**

The research on assessing the adequacy of housing in refugee camp, the case of Kebribeyah refugee camp, Jijiga, Ethiopia, is organized according to Addis Ababa University guidelines for Dissertation and Thesis writing following the general structure of a monograph. As a result, the research has five chapters with the following major topics and discussion points.

1. **Introduction** - The first chapter briefly gives an introduction about refugee, adequacy and sustainable development from global to national perspectives. Then, it consists of the core elements of the study, which are statement of problem, research objective and questions, the study significance, and the scope and limitation of the research.
2. **Literature Review** – The second chapter of this research covers various written, published, and unpublished systematic document reviews about different theoretical and contextual reviews about sustainability concepts, adequacy of housing indicators, refugee and refugee settlement. In the contextual review, national and International (humanitarian) policies, guidelines, and institutional frameworks are also discussed.
3. **Material and Method** – The third chapter explains the research methodology used to conduct the study and focuses on research frameworks employed, the type and source of data, data collection and analysis techniques, sampling, and case selection techniques.
4. **Result and Discussion** - The fourth chapter covers the presentation of data collected from the survey, qualitative interview, focused group discussion, and observation during field visits. The data are presented in sequential order that answers the research questions, and discussion points were raised to interpret the data according to the research objective. Finally, a summary of findings from all the data has been included in the chapter.

5. **Conclusion and Recommendation** - The last chapter gives a deduction towards the general findings about the Kebribeyah Refugee camp and summarizes the core points about the adequacy of refugee shelter and settlement. It also includes future recommendations on the inclusion of the adequacy of the housing paradigm in the refugee shelter and settlement process and similar natural or manmade unexpected disasters that include displacement.

## **CHAPTER TWO: LITERATURE REVIEW**

This chapter discusses topics focusing mainly, adequate housing, and refugee shelter and settlement within the framework of sustainable development. The review is organized from a broader specific conceptual topics that are related to the research problem. The contextual review in this chapter are presented to describe the various contexts of the research including policy and legal frameworks.

### **2.1 Theoretical Framework**

#### **2.1.1 Sustainable Development Theory**

According to Brundtland's (1987) definition of "sustainable development is a development that meets the needs of the present without compromising the ability of the future generation to meet their own needs" (Brundtland, 1987). The new development paradigm initially started in 1970 from an environmental perspective where it prioritizes long-term social and environmental well-being over short-term economic growth (Meadows, Meadows, Randers, & Behrens III, 1972). Then the theory gained its global recognition by the World Commission on Environment and Development when it was further explained as meeting current needs with means of preserving and not over-exploiting for the future.

Afterward, comprehensive action plans, implementation strategies, and frameworks were developed throughout the year to further enhance the theory and its application. The action plan involved the integration of economic growth with social equity and environmental growth to encourage the implementation globally ( United Nations, 1992). The detailed implantation strategies for the action plan were introduced after a while during the World Summit on Sustainable Development in 2002. These strategies include implementation of the theory at all levels with the involvement of private sectors, local communities, and vulnerable groups focusing on specific issues that promote global economic growth, environment protection, and social equity (United Nations, 2002). Furthermore, a comprehensive framework consisting of 17 Sustainable Development Goals was introduced to have sustainable and equitable world. (United Nations , 2016)

### 2.1.1.1 Sustainable Development Framework

While development involves progressive transformation, sustainable development has two major alteration concepts that involve needs and limits (Brundtland, 1987). The needs are related to economic and social needs, whereas the limits are environmental shortages. The theory further highlights social equity, economic productivity, and environmental quality to promote sustainable development (Theis, 2022).

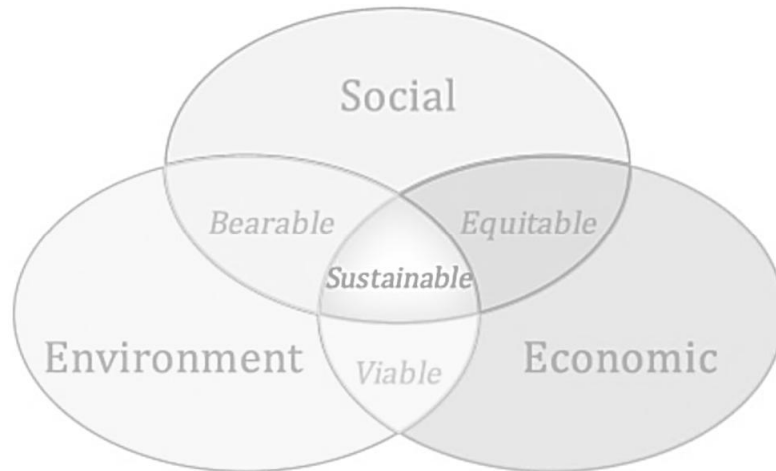


Figure 2.1-1 Overlapping Themes of Sustainability Paradigm

Source Sustainability, A comprehensive Foundation adapted from International Union for Conservation

Even if it is difficult to underpin sustainable development and the three-pillar paradigm, which has only theoretical background, the three dimensions have been used globally to further support the theory. (Ruggerio, 2021)

Table 2.1-1 Three pillar of Sustainable development

<i>Sustainability Dimensions</i>	
<i>Environmental Sustainability</i>	Ability to protective natural resources, minimizing pollution and ecological degradation, and promoting renewable energy and biodiversity conservation.
<i>Social Sustainability</i>	Practice of Fairness, inclusion, and social cohesion with in communities, access to basic services like healthcare, education, housing, and community integration and participation in decision making
<i>Economic Sustainability</i>	Maintaining economic growth for long time, being Resourceful and practicing economic inclusion.

### *2.1.1.2 Sustainable Development in Refugee Shelter Context*

People who are forced to be displaced across the border of their home country due to natural or manmade disasters are known as refugees (Clover, 2002). Whenever disaster occurs, refugees require a response for basic needs like food, clothing, and shelter for their survival. Here, refugee shelter is not only for survival. It further provides security, safety, and dignity for the occupant (UNHCR, 2013).

As sustainable development promotes economic growth with social equity and environmental protection, refugee shelter and settlement go hand in hand, considering the contextual location of the settlement with household shelter that is required to meet refugee needs without compromising the future (UNHCR, 2013). The theory of sustainability in this context prioritizes long-term planning since the traditional approach was for short term and only providing immediate response for survival (UNHCR, 2019). Meanwhile, the refugee crisis solutions are resolved within three years. One in 40 refugee crises, the majority of them last for decades as protracted situations (Crawford, Cosgrave, Haysom, & Walicki, 2015). Considering the refugee displacement situation and its duration, the sustainable development concept can be applied as a long-term resilience approach (UNHCR, 2019). Self-reliance, livelihood opportunities, local integration, voluntary repatriation, and resettlements can be means for sustainable development approaches (Crawford, Cosgrave, Haysom, & Walicki, 2015).

Referring to the three sustainable development dimensions, refugee shelter, and settlement context can be further discussed as follows. Refugee shelter and settlement response are initially planned to be temporary use, but many refugee camp fail and become semi-permanent for more than a decade, leading to long-term planning issues (UNHCR, 2022). Due to its continual existence, planning must consider the population growth of refugees, which will affect the capacity of basic services like housing, educational centers, and health centers due to unplanned demands that might arise over time. Hence, this will further lead to overcrowding, resource exploitation, and environmental degradation, resulting in a direct relation with Environmental Sustainability (Vitale, 2005). Furthermore, to minimize the environmental impact, shelter designs and settlements should incorporate the use of

local materials (UN Habitat, 2014). According to the Sphere handbook, refugee shelters need to respect the contextual background of the dwellers to promote inclusion and social cohesion, which relates to Social Sustainability (Sphere Association, 2018). As a result of their long-term planning, refugees also need to be independent after a certain period of time by having different livelihood opportunities like income generation, employment opportunities, vocational training, and education, which further fosters the local economic growth and integration with the host community to promote economic sustainability (World Bank Group, 2016)

Table 2.1-2 Three pillar of Sustainable development in refugee context

<i>Sustainability Dimensions</i>	
<i>Environmental Sustainability</i>	Minimize ecological degradation by using local materials and planned growth
<i>Social Sustainability</i>	Design shelters that align with cultural and social norms to foster inclusion
<i>Economic Sustainability</i>	Enable refugees to access livelihoods and participate in local economies

Source (Vitale, 2005), (UN Habitat, 2014), (Sphere Association, 2018). (World Bank Group, 2016)

According to the sustainable development paradigm, refugee's human, social, natural, physical, and financial capitals are recognized as valuable methods for implementing sustainable livelihood frameworks (DFID, 1999). To enhance the matter, refugee camp designs have to be self-sufficient and free of aid, which supports their long-term existence (Jacobsen, 2005). In addition to a sustainable livelihood, another framework named sustainable development goals has included different interventions that include refugee contexts. The most significant goals in relation to the refugee context are further highlighted below as follows.

- Goal 1 No Poverty – globally, refugees are one of the most vulnerable populations who are subjected to extreme poverty due to displacement (UNHCR, 2019). Since refugees are excluded from national safety nets and often face legal restrictions to support themselves, they have always been under the poverty line (World Bank Group, 2023). Therefore, addressing the SDG of no poverty in the refugee context requires development-based solutions like economic inclusion, social protection,

and the rights of refugees rather than continuous aid-based support. (*International Labor Organization* , 2024)

- Goal 6 Clean Water and Sanitation – usually, refugee camps are located in areas with no infrastructural resources because of major challenges in accessing safe drinking water and adequate sanitation, which are basic for maintaining health, dignity, and resilience during displacement (*UN Refugee Agency* , 2022). Trucked water or boreholes are usually the main sources of water, which are unreliable and cause strain on local water resources for the host community in long-term displacement (*United Nations*, 2018). Studies show that refugees' access to safe water is often below international standards, which causes a lack of sanitation (*Sphere Association*, 2018). Consequently, the goal is to implement sustainable infrastructure that benefits the refugees without creating tension in the host community and local environment in the future.
- Goal 10 Reduced Inequalities – since refugees are a vulnerable population, they are usually subjected to unfairness and inequality. While refugees are frequently affected by legal restrictions to get livelihood opportunities, social and cultural segregation in host communities SDG 10 basically focuses on minimizing inequality between individuals based on income, status, legal rights, and so on (*UN Habitat* , 2015) (*World Bank Groups*, 2019). In this perspective, the goal is to practice inclusive and integration approaches where policies and legal rights benefit all vulnerable groups including refugees (*World Bank Group*, 2019).
- Goal 11 Sustainable Cities and Communities – as a result of refugee settlement's long-term existence, they tend to evolve into semi-permanent cities like Zaatari Refugee camp in Jordan (*Parker & Maynard*, 2005). Accordingly, SDG 11 encourages refugee settlement to be adequate, inclusive, safe, resilient, and sustainable (*UN Habitat* , 2015). In current practice, refugee settlements are formed in informal patterns where there is limited infrastructure and overcrowding (*UNHCR*, 2022). Thus, the plan is to include refugee settlement in urban planning with planned infrastructure, adequate housing and services, and resilient camps considered part of the host community's urban fabric (*UN Habitat*, 2023).

### 2.1.2 Adequate Housing

The theory of adequate housing began in the legal framework as one of the human rights, the right to live in a secure, peaceful, and dignified way (UN Habitat, 2014). According to Turner (1977), housing is the physical structures or buildings that provide shelter and are involved in creating dwellers and the relationships within them (Turner, 1977). According to Leckie (1989), the lack of adequate housing has severe consequences for people's health, safety, and social well-being, and it extends poverty and inequality (Leckie, 1989). More on the subject, adequate housing is linked to capability deprivation, where housing is not just shelter but a way of living in dignity and having the chance to pursue education, health, and employment opportunities (Sen, 2000). Further, the discussion of the effect of inadequate housing, which can result in a restriction on basic needs and services, has an impact on human development (Nussbaum, 2011).

In addition, adequate housing goes beyond just providing a physical structure; it must also meet the physiological, psychological, health, and security needs of its occupants (Xiaolong Gan, 2019). According to Mallett (2004), housing that is affected by overcrowding and poor shelter quality has a significant effect on creating family stress and anxiety, especially for women, children, and vulnerable groups (Mallett, 2004). Adequate housing is also a social fabric where dwellers create sense of belongingness and built their socio-cultural identity.

#### 2.1.2.1 Adequate Housing Framework

UN-Habitat has outlined several criteria for housing to be considered adequate, including the security of tenure, availability of services and infrastructure, affordability, habitability, accessibility, location, and cultural adequacy, where these have been categorized as physical and nonphysical aspects (UN Habitat, 2018).

Table 2.1.2-1 Indicator for adequacy of housing

<i>Physical Aspects</i>
<i>Housing Unites</i>
<ul style="list-style-type: none"><li>• Housing sizes, function, layouts, and indoor environment, such as lighting, ventilation, noise insulation, thermal and humidity comfort, quality of housing materials and workmanship, structural durability and safety, and appropriateness</li></ul>

<p>of location, were also found to seriously affect the livability of housing. Privacy, flexibility, functionality, and provision of necessary amenities within housing should be considered in housing design.</p> <ul style="list-style-type: none"> <li>• Guarantee physical safety or provide adequate space, as well as protection against the cold, damp, heat, rain, wind, and other threats to health and structural hazards.</li> </ul>
<i>Housing Service and Infrastructure</i>
<ul style="list-style-type: none"> <li>• Access to basic services and infrastructures like water lines, electricity, sanitary and drainage facilities, garbage disposal, and road network.</li> <li>• Occupants do have safe drinking water, adequate sanitation, and energy for cooking, heating, lighting, food storage, or refuse disposal.</li> </ul>
<i>Neighborhood Environment</i>
<ul style="list-style-type: none"> <li>➤ The settlement pattern of basic public facilities throughout the neighborhood environment. Location of housing, available social services nearby, community facilities like recreational areas, public places, commercial facilities, and so on</li> </ul>
<i>Non-Physical Aspects</i>
<i>Tenure Security</i>
<ul style="list-style-type: none"> <li>➤ Occupants do have a degree of tenure security, which guarantees legal protection against forced evictions, harassment, and other threats.</li> </ul>
<i>Affordability</i>
<ul style="list-style-type: none"> <li>➤ Its cost does not threaten or compromise the occupants' enjoyment of other human rights.</li> </ul>
<i>Accessibility and Location</i>
<ul style="list-style-type: none"> <li>➤ The specific needs of disadvantaged and marginalized groups are taken into account. Fair access to employment opportunities, health-care services, schools, childcare centers, and other social facilities not located in polluted or dangerous areas.</li> </ul>
<i>Cultural Adequacy</i>
<ul style="list-style-type: none"> <li>➤ Respect and take into account the expression of cultural identity</li> </ul>

Source: (UN Habitat , 2024)

### 2.1.3 Refugee Housing and Settlement Theories

According to Christopher Chitereka (2008), the concept of the refugee has its historical roots in the religious persecution of dissident groups several centuries ago (Chitereka, 2008). According to Clover (2002), technically, the term "refugees" refers to those who have been displaced across the border of their home states (Clover, 2002). The UNHCR's founding mandate also defines refugees as people who are outside their country and cannot return owing to a well-founded fear of persecution because of their race, religion, nationality, political opinion, or membership in a particular social group (UNHCR, 2013).

As R. Zetter stated in the 1951 Geneva Convention, Refugees are assisted with basic emergency needs such as food, water, medical assistance, protection, shelter, and housing, which constitute a major humanitarian necessity (Zetter, 2021). Thus, refugee housing is a critical issue in ensuring refugees' survival by providing security and safety, protection from the climate, and resistance to ill health and diseases. As Bushnaq (2021) presented, refugees are usually housed in refugee camp built by the United Nations High Commissioner for Refugees (UNHCR) following the host government. The current form of these camp relies on the notion that these spaces are temporary. (Bushnaq, 2021).

Shelter and settlements are interconnected; consider shelter as a household living space with necessary things for daily life and settlement as a wider location where these households live collectively as a community (Sphere Association, 2018). As a result, refugee settlements have dynamic stages as they tend to evolve over time. The concept of refugee camp and settlements has no collective argument. Shelters and settlements have been described as temporary, transient, city–camp, semi-permanent spaces created "between war and city" (Agier, 2002).

#### *2.1.3.1 Refugee Shelter and Settlement Response*

According to UNHCR, refugee shelters and settlement responses are categorized as emergency responses, where the immediate response to a disaster is given, transitional shelters, where the immediate response transits to a semi-permanent; and lastly, durable shelters, where a long-term response is applied in the shelter and settlement context (UNHCR, 2007). The initial phase often responds to immediate solutions to basic services like food, shelter, water, and so on. Then, as they start to be stable, they will improve their living conditions and do modifications to better suit their need. Then again, if they stay in the settlement for more than a decade, they start requiring permanent housing and infrastructural solutions as it grows.

“Refugee camp is a temporary space intended for transition”; such a temporal concept is often made by international organizations and NGOs. (Rania Aburamadan, 2020). Both humanitarian assistance agencies and the host government accept the idea of short-term parametric solutions by providing massively tented and plastic sheets refugee camp as an emergency solution. The notion of temporary encampment is to reduce loads on the host

community where the sudden and large-scale increased population might bring to the table concerning local resource management, conflict, and political instability that might arise at arrival time while refugees are placed in dilapidated zones where the size, layout, and density of camp are dysfunctional (Zetter, 2021). In contrast, refugee camp and communities remain in place far longer than predicted, and refugee housing could become semi-permanent assets for the community. According to Zatter (2021), refugees are like urban migrants who consolidate their housing in informal settlements of cities (Zetter, 2021). They adapt, customize, and upgrade their shelters as more durable and long-lasting physical assets. (Rania Aburamadan, 2020).

#### *2.1.3.2 Spatial Settlement Theories*

According to camp layout, there are centralized and decentralized camp formations depending on where basic services are located. Centralization can enhance the delivery of service effectively, whereas decentralization promotes independence (Vitale, 2005). On the other hand, planning can be made with grid or cluster formation. The grid emphasizes uniform layout organization to maximize effective use of infrastructure and service, whereas the clustered formation group household in manageable zoning promotes social cohesion and administrative advantage (Davis, 2011). Camp are becoming a city in the sense of social and political space, yet there are shortages of services, and this temporary situation of accommodating people does not account for the long-term socio-economic situation (Lombard, 2014). Thus, the urban requirements frame a camp as a city or as an incomplete urban formation (Rania Aburamadan, 2020)

#### *2.1.3.3 Space and Design Theories*

Referring to Lefebure's theory (1991), social relations and power can be reflected by space; a house is a places that create identity and belongingness (Lefebvre, 1991). As a result, if refugee camp are places of long term existence they do create identity and belongingness through there protracted setting. In contrary camp are perceived as political agenda that often restrict and control livelihood opportunities which affects dignity and integration with host community (Agier, Michel, 2011). While designing a refugee shelter, it is crucial to consider its environmental setting with proper ventilation, sanitation, privacy, and cultural preference are important as it can affect the safety and security of the space and the refugees

themselves (Norwegian Refugee Council, 2023). Refugee housing is a critical issue to ensure refugee's survival by providing security and safety, protection from the climate, and resistance to ill health and diseases. The author presents that “shelter is a vital element to support human dignity and to sustain family and community life in conditions of severe deprivation” (Bushnaq, 2021).

Thus, camp can apply a defensible camp setting design where safety and security can be achieved for refugees, especially for women, children, and vulnerable groups (Newman, 1972). Besides that, space has a psychological attachment to the dwellers (Low, 1992). The place is broadly understood as spaces that people are attached to or spaces that have particular meaning to people. (Lombard, 2014). As Lombard noted in urban planning, a place is considered as a socio-spatial construct combining both physical and social elements that result from an understanding of the physical environment with psychological attachment to people (Lombard, 2014). Refugee houses have potential effects on the behavior and mental health of the refugees as the space needs self-control and personalization mechanisms (Robert Gifford, 2007).

#### *2.1.3.4 Refugee Integration and Localization Models*

The understanding of refugee response and settlement strategies has evolved, shifting from traditional humanitarian assistance to more inclusive and long term solutions. In recent years, the concept of refugees has been modified by new models as integration and localization. These models are foundational to this thesis as they directly influence how adequate housing is conceptualized and implemented within refugee contexts.

Refugee integration extends beyond physical settlement to encompass social, economic, cultural, and legal, where host community engagement is essential for social cohesion and community-based development (Strang, 2008). Housing in this framework is not merely a shelter, but a platform for inclusion, access to rights, and meaningful participation in society. Integrated housing systems help refugees transition from dependency to self-reliance, improving their quality of life and supporting national development agendas.

Localization, on the other hand, refugee involvement in basic decision-making processes in matters that affect their daily lives like shelter design, settlement, and livelihood

opportunities where, which can foster sustainability, a sense of ownership, and cultural acceptance (Barbelet, 2018). This approach enhances the sustainability and cultural appropriateness of housing solutions, as it values the **knowledge, preferences, and needs of refugee communities**

## **2.2 Contextual Review**

As discussed in the theoretical review, adequate housing is an essential subject in refugee shelter and settlement planning. Adequacy of housing is a human right that enables refugees to have appropriate housing that can enhance livelihood opportunities with local integration and access to basic services in a safe and secure environment. This section aims to cover international and local practices in relation to adequate housing and refugee shelter and settlement by referring to global frameworks, standards, policies, and intervention plans. Questioner, proposal and final document submission

### **2.2.1 Refugee Situation Globally**

The global refugee statistics show that over 117.3 million people are forcibly displaced worldwide, where 31.6 million are refugees (UNHCR, 2019). Basically, the reason for refugee displacement arises from natural and manmade disasters like conflict, persecution, climate changes, and socio-political instabilities (IOM, 2021).

#### *2.2.1.1 Global Frameworks and Guidelines on Refugee Housing*

There are various mechanisms that refugee response is being administered globally where they are found to be sustainable solutions that include a complete life-changing solution to improved solution of integration and inclusion. Refugee Resettlement where refugees are selected and transferred to a third country that is willing to give them a permanent residence permit. The process is mainly managed by UNHCR and the resettlement state by prioritizing disadvantaged populations. The tool is considered sustainable with long-term solutions (UNHCR, 2011). Humanitarian Corridors – where refugees pass to other country in safe and legal means by the help of non-governmental organization providing protestation and humanitarian based visa to vulnerable groups. This means is usually applicable in small scale different from traditional asylum or resettlement program (Migration, 2022). Refugee Compact- is a refugee integration approach where refugee self-reliance is encouraged, host community burdens are shared, third-country solutions are

created, and a return plan to the country of origin is planned (UNHCR, 2018). This approach is a long-term solution that might be challenging to implement depending on the host community's willingness and acceptance of the duration of time it might take before seeing its good effect (UNHCR, 2021).

As a global framework and standard, there are also various guidelines regarding refugee housing. This is the UNHCR Emergency Handbook – which is a guideline that incorporates shelter design and site planning with the integration of refugee involvement (UNHCR, 2007). The handbook suggests the need to completely avoid spontaneous settings to get adequate planning.

Table 2.2-1 Summary of Shelter Guidelines from UNHCR Emergency handbook

<b>Categories</b> <b>Description</b>	<b>Standard Requirement</b>	<b>per</b>	<b>Remark</b>
<i>Settlement Area</i>	minimum surface area 45 m <sup>2</sup>	1 person	including kitchen/vegetable gardening space
	minimum surface area 30m <sup>2</sup>	1 person	excluding garden space
<i>Service and Infrastructure</i>	1 water tap	1 community (80 – 100 persons)	
	1 latrine	family (6 – 10 persons)	
	1 health center	1 site (20,000 persons)	
	1 referral hospital	0 sites (200,000 persons)	
	1 school block	1 sector (5,000 person)	
	4 distribution points	1 site (20,000 persons)	
	1 market	site (20,000 persons)	
	1 feeding center	1 site (20,000 persons)	
<i>Shelter</i>	2 refuse drums	1 community (80 – 100 persons)	
	minimum of 3.5 m2	1 person	tropical, warm climates, excluding cooking facilities or kitchen
	4.5 m2 to 5.5 m2		cold climates or urban situations, include-

Sphere Standards – this is also a guideline for shelter design and settlement planning, which puts minimum standards and living conditions that enhance the safety and dignity of the refugees (Sphere Association, 2018).

Table 2.2-2 Summary shelter and settlement guideline from Sphere Standard

<i>Shelter and Settlement</i>	<i>Standards</i>	<i>Indicators and Measurements</i>
<i>Planning</i>	Well planned and coordination to ensure safety, well-being, and recovery.	Indicators The plan meets essential needs, is agreed upon by affected people and authorities, and reflects priorities leading to durable solutions.
<i>Location and Settlement Planning</i>	Safe areas with enough space and access to services and livelihoods.	Percentage of camp location in areas with minimal risk, access to essential service, people feeling safe in their shelter location, sites with adequate space for private/public activities 45 m <sup>2</sup> /person in camp, 30 m <sup>2</sup> /person if services are outside the site, Minimum living space-to-plot ratio: 1:2; aim for 1:3 or more
<i>Living Space</i>	People have safe, adequate living spaces that support daily and livelihood activities with dignity.	Percentage with enough space for daily activities, shelters meeting technical, performance, and cultural standards, people feeling safe in their shelter Min. 3.5 m <sup>2</sup> /person (excludes cooking/bathing/sanitation), 4.5–5.5 m <sup>2</sup> /person in cold or urban areas (includes services), Ceiling height: min. 2 m (2.6 m in hot climates)
<i>Household Items</i>	Household item support helps restore health, dignity, safety, and daily living.	min. 2 sets/person, climate- and culture-appropriate 1 blanket + bedding/person; extras for cold climates; nets as needed
<i>Technical assistance</i>	People receive timely, appropriate technical assistance.	Percentage of programmers involving local authorities in setting and monitoring standards, construction activities with active community participation, shelters built or improved using agreed safe practices, households reporting adequate technical guidance received
<i>Security of tenure</i>	Affected people have security of tenure in	Percentage with tenure security for the duration of assistance, appropriate tenure

*Environmental Sustainability*

their shelter and settlement options. Shelter and settlement support minimizes environmental impact.

agreements, tenure issues who accessed legal or dispute resolution support  
Percentage of activities with prior environmental review, environmental plan recommendations implemented, using low-emission materials and methods, site waste reused/recycled (target: >70%), temporary sites restored to better condition than before use

Inter-Agency Standing Committee Guidelines (IASC) is a framework that highlights coordination between shelter needs and protection. The framework highlights the safety, security, and dignity of refugees during refugee response (IASC, 2021). Also, the Comprehensive Refugee Response Framework (CRRF) is a strategy that includes adequacy of housing and community integration as a means of long-term and inclusive solution, which further helps stress humanitarian bodies, local governments, and host communities (United Nations, 2018). More on international frameworks Sustainable Development Goals – among the different goals SDG 11 promotes refugee inclusion in creating human settlement as inclusive, safe, resilient and sustainable solution with adequate housing and access to basic service (United Nations, 2015).

*2.2.1.2 International principles on Adequacy of Housing*

According to the definition of UN-Habitat & OHCHR, adequate housing is not a product but a human right that must be realized by adequate policies and legal frameworks (UN Habitat, 2014). To realize housing adequacy, the international human rights standard has outlined seven criteria as evaluating principles, namely Legal security of Tenure, Availability of Service, Affordability, Habitability, Accessibility, Location, and Cultural Adequacy (UN Habitat, 2014).

It is important to note that these criteria were originally formulated for conventional, permanent housing in urban and rural settings under stable governance and legal systems. However, they have since been adapted and increasingly applied to **refugee contexts**, particularly by humanitarian organizations such as UNHCR and Sphere, as benchmarks to evaluate shelter interventions in emergency and protracted displacement settings.

Despite the temporary or transitional nature of many refugee shelters, the underlying principles of adequacy remain relevant and necessary. For example:

- Legal security of tenure, while difficult in informal or camp settings, still applies in the form of protection against forced eviction or relocation without consent.
- Availability of services is critical in refugee camps, where access to clean water, sanitation, health care, and education often defines shelter quality.
- Affordability in refugee contexts may relate to refugees' dependence on aid, and the economic sustainability of housing solutions provided by host states or NGOs.
- Habitability involves protection from the elements, overcrowding, and exposure to health risks, all of which are common issues in refugee camps.
- Accessibility requires that shelter and services be inclusive of vulnerable groups, such as persons with disabilities, the elderly, or female-headed households.
- Location in a refugee setting refers to proximity to services, safety from conflict or natural hazards, and access to livelihoods or markets.
- Cultural adequacy demands that shelter design and settlement planning respect the social norms, privacy needs, and lifestyles of displaced populations.

In this way, while originally designed for conventional housing, these seven adequacy principles provide a valuable framework for evaluating and improving housing in refugee settlements. They serve as a universal reference point for governments, humanitarian agencies, and researchers to ensure that housing interventions in refugee contexts uphold dignity, safety, and rights of displaced persons.

This study adopts these criteria as a guiding framework to assess the adequacy of housing in Kebribeyah Refugee Camp, contextualizing each indicator within the lived experiences and physical realities of camp-based shelter.

### **2.2.2 Refugee Situation in Africa**

According to UNHCR statistics, more than 30% of the global refugee population is hosted by African countries like Ethiopia, Uganda, Sudan, and Kenya (UNHCR, 2019). The driving forces of these refugees are mainly conflicts, political instabilities, and

environmental factors (IDMC, 2022). Also ethnic-based violence is also another contributing factor to displacement in the Horn of Africa (ACCORD, 2021).

### *2.2.2.1 Legal & Policy Instruments*

Regionally, Africa has a legal and policy document that relates to refugees and displaced people. One of the initial documents was the Organization of Africa Unity, OAU Convention in 1969, which focused on governing specific topics in Refugee Problems in Africa (OAU, 1969). The convention starts by redefining the definition of refugee stated in 1951 Refugee convention, which was defined as "someone who owing to a well-founded fear of persecution, is outside their country of nationality and is unwilling or unable to return to it". More on the term, the OAU Convention defines refugees as those who are also outside of their country due to external violence, occupation, and foreign authorities or events extremely disturbing public order (OAU, 1969). Besides that, the AU Policy Framework on Post-Conflict Reconstruction and Development (PCRD) highlights the need for inclusive shelter and urban development as means of post-conflict rebuilding techniques by refugee integration in the planning and provision of basic services ( African Union, 2006). Following that, the Kampala Convention in 2012, which is the first legally binding document regarding internally displaced people IDP by the African Union Convention for the Protection and Assistance of Internationally Displaced Persons in Africa, was developed (African Union, 2012). The document mainly focuses on the host country's responsibility for refugee protection and assistance. Another AU framework called Agenda 2063, which promotes inclusive development for refugees, emphasizes the resilience of housing, infrastructure, and sustainable development in refugee settlement (Africa Union, 2015). Furthermore, Refugee support platform was launched by Intergovernmental Authority on Development (IGAD) to create coherent refugee policies and development approaches in Africa (IGAD, 2020).

### **2.2.3 Refugee Situation in Ethiopia**

According to UNHCR Operational Update, Ethiopia is currently hosting more than one million refugees and asylum seekers, majorly from Sudan, Somalia, and Eritria (UNHCR, 2024) . The majority of refugees live in 24 refugee camp established across the five regional states, including the Keribeyah Refugee Camp in the Somali Regional State.

### *2.2.3.1 Ethiopian Refugee Policy and Frameworks*

Referring to Ethiopia's long-standing history of hosting refugees, the country has developed different policy frameworks regarding refugees, which align with international refugee laws and the global compact on refugee rights. According to Refugees Proclamations No. 1110/2019, a developing law for refugees' rights to get proper documentation, access to education, access to health services, employment and housing, and freedom of movement, which are mentioned as a guiding law to protect the refugee rights (Federal Negarit Gazette, 2019). More on freedom of movement, the country has a supportive policy called Out of Camp Policy (OCP), which allows refugees to live outside camp if they are capable of supporting themselves and properly registered under the Ethiopian Refugee and Returnees Service (Tadesse Kassa). Despite the policy being developed and implemented there are still more than 90% refugees who are living in the camp setting (Ghebregergs, 2024). To support refugee self-reliance and freedom from aid the country implements Comprehensive Refugee Response Strategy (CRRF) which allows refugees to access national service and integration with national development plans (CRRF, UNHCR, 2018). Furthermore, as a main role player in the Global Compact on Refugees, Ethiopia is one of the countries that is proactively recognizing refugee protection policies internationally and nationally (UNHCR, 2021).

The country has a government office under the National Security and Intelligence Service known as Refugee and Returnees Service (RRS) that has a mandate to manage refugee affairs, including registration, protection, and shelter provision (RRS, 2023). The office works in collaboration with UNHCR and different NGOs as the main country representative in any refugee-related response, considering the legal laws and policies with the host community dynamics.

### *2.2.3.2 Refugee Housing Guidelines and Standard*

Even if the country lacks specific guidelines for refugee housing, the Ethiopian Housing Policy's general focus on affordable housing and urban development can support the refugee housing concept indirectly (Abraha, 2013). Since the country has policy gaps in rural and urban settings, there has always been a loophole in refugees living in urban cities and those in rural areas basically in camp settings. On the other hand, the Shelter / NFI

Cluster coordinates' shelter planning and response, focusing on shelter quality, disaster reduction techniques, and access to basic services in collaboration with UNHCR and RRS. The country follows the UNHCR Shelter Standard and Sphere Handbook as the main guideline and standard for refugee housing, which usually faces resource limitations, climatic effects, or tension with host communities, which results in standard kind of housing quality for refugees.

### **2.3 Conceptual Framework**

In general the reviewed literature highlights how sustainability, adequacy, and refugee theory converge to frame housing adequacy in protracted displacement contexts. The proposed conceptual model integrates Refugee needs, site context, policy environment such as international standards, national policies, and camp-specific interventions directly shape the settlement layout, shelter form, and material quality as an input with UN-Habitat's adequacy criteria as assessment dimension to determine housing adequacy, which is assessed based on habitability, service access, cultural appropriateness, and safety/security perceptions. Findings will inform improvement measures, including design recommendations, policy advocacy, and community-led planning. Moreover to gaining final outcome of sustainable housing recommendations that support social inclusion, resilience, and long-term planning.

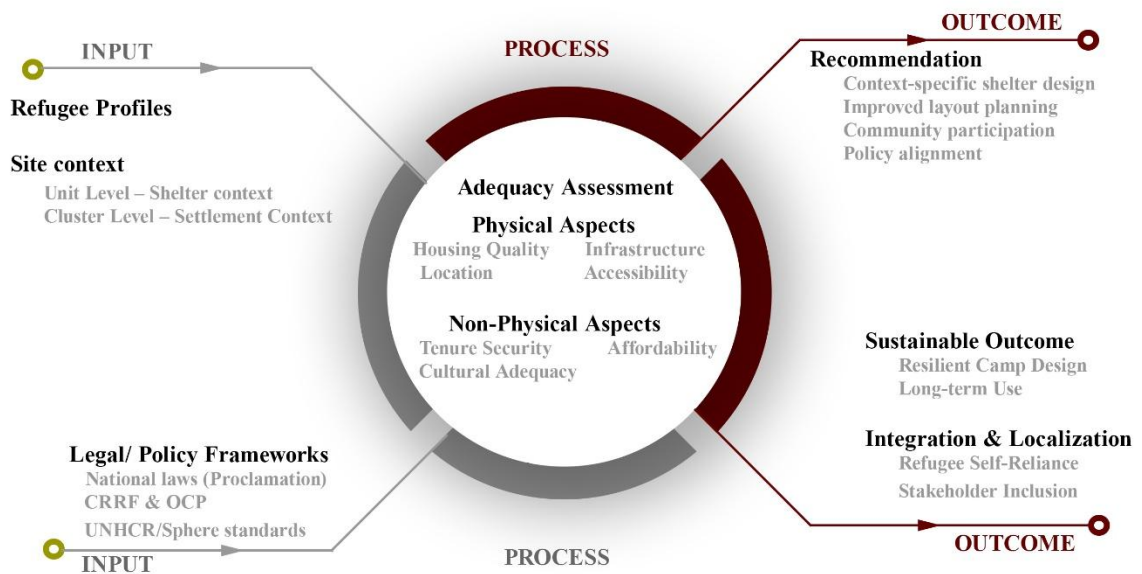


Figure 2.3-1 Contextual Framework Diagram

#### 2.4 Summary of Literature Review

The theoretical review has developed a robust foundation for the study by offering a systematic review of multiple conceptual frameworks to investigate refugee housing adequacy, specifically in the case of Kebribeyah Refugee Camp, Jijiga, Ethiopia; to assess the spatial characteristics and adequacy of housing in a refugee context where settlement often continues for decades and requires durable solution.

The theory of sustainable development provides the overarching framework for evaluating housing adequacy in refugee settings. As per Brundtland (1987), sustainable development ensures that current needs are met without compromising future generations (Brundtland, 1987). In refugee contexts where settlements often become long-term environments housing must balance immediate humanitarian needs with environmental, social, and economic sustainability (UNHCR, 2013). Sustainable development in refugee context outlines how sustainability is applied in refugee shelter planning. Historically seen as short-

term responses, refugee shelters now demand long-term planning due to the protracted nature of displacement (Crawford, Cosgrave, Haysom, & Walicki, 2015). Applying sustainability principles ensures that housing interventions account for population growth, resource strain, social inclusion, and economic self-reliance.

Adequate Housing adequate housing as a multidimensional right that includes not just physical shelter, but also dignity, security, and access to services (Turner J. , 1977). Sen (2000) and Nussbaum (2011) expand this by linking housing to broader human development and freedom (Sen, 2000), (Nussbaum, 2011). UN-Habitat (2018) identifies physical (housing quality, infrastructure, and environment) and non-physical (tenure, affordability, location, cultural relevance) indicators for adequacy (UN Habitat, 2018).

To contextualizes refugee housing and settlement evolution. Traditionally seen as temporary and emergency-based, refugee settlements like Kebribeyah often become semi-permanent, requiring rethinking in terms of planning, design, and service delivery (Zetter, 2021). UNHCR's shelter response typology (emergency → transitional → durable) helps frame the evolutionary phases of refugee housing. Kebribeyah's shelters can be placed within this spectrum to determine whether they reflect durable solutions. Spatial models such as centralized vs decentralized service layout and grid vs cluster formations help evaluate how the physical layout of the camp supports or hinders functionality and equity (Vitale, 2005). Space is not only physical but also social and psychological (Robert Gifford, 2007). Refugee housing must foster safety, personalization, and identity. Poor design can increase stress, especially among women and vulnerable groups. Recent trends promote refugee participation in planning and local integration for sustainability and dignity (Barbelet, 2018). This aligns with the shift toward bottom-up, participatory shelter solutions.

Bringing together sustainability, adequate housing, and refugee settlement theories enables a structured analysis of Kebribeyah Camp's shelter adequacy across time and space. The literature supports a multi-dimensional evaluation framework where:

- Historical evolution and physical layout are analyzed using spatial and settlement theories.
- Current adequacy is assessed against UN-Habitat and sustainability indicators.
- Improvement strategies are informed by long-term planning, participatory approaches, and sustainable design.

Table 2.4-1 Literature Review Relevance based on research objective

<b>Specific Objective</b>	<b>Relevance</b>
<b>Sustainable Development</b>	
1 Historical Evolution	
2 Adequacy Evaluation	The three sustainability pillars offer a foundation for assessing whether Kebribeyah’s shelters meet international standards in ways that ensure long-term viability and dignity
3 Strategic Recommendations	Sustainable development principles guide future-oriented interventions that align refugee shelters with host community systems and minimize long-term vulnerability.
<b>Sustainable Development in Refugee Shelter Context</b>	
1 Historical Evolution	This section helps understand how the shift from emergency to durable planning emerged and frames the evolution of Kebribeyah Camp in a global context.
2 Adequacy Evaluation	Assesses whether shelter design and service access in Kebribeyah reflect sustainability indicators, such as ecological impact, social cohesion, and economic integration.
3 Strategic Recommendations	Informs sustainability-based recommendations, including durable materials, renewable infrastructure, and livelihood planning.
<b>Adequate Housing Theory</b>	
1 Historical Evolution	
2 Adequacy Evaluation	Provides a theoretical and standards-based framework to evaluate the existing spatial and structural adequacy of shelters in Kebribeyah against globally recognized indicators.
3 Strategic Recommendations	Offers a benchmark for identifying gaps and developing interventions to upgrade housing to meet adequate standards.
<b>Refugee Housing and Settlement Theories</b>	
1 Historical Evolution	Provides historical background and typology for understanding how Kebribeyah evolved from a temporary site to a long-term community.

	<p>Helps trace the historical phases of shelter development in Kebribeyah.</p> <p>Supports spatial analysis of the layout patterns of Kebribeyah's settlement.</p>
2 Adequacy Evaluation	<p>Offers insights into typical limitations of refugee camps—such as poor infrastructure, spatial disorganization, and lack of services—that will be evaluated in Kebribeyah.</p> <p>Assists in classifying the current shelter type and assessing its appropriateness for long-term habitation.</p> <p>Helps assess if the current spatial structure supports service access, equity, and social cohesion.</p> <p>Assesses how current shelters in Kebribeyah meet psycho-social and cultural adequacy.</p> <p>Evaluates whether shelter delivery in Kebribeyah reflects principles of localization and participatory planning.</p>
3 Strategic Recommendations	<p>Informs redesign recommendations for spatial reconfiguration.</p> <p>Informs design-based improvements like culturally appropriate layouts, defensible spaces, and privacy features.</p> <p>Strengthens the argument for involving refugees in co-design and decision-making for future interventions.</p>

The contextual review highlights how the refugee crisis is continuously growing globally and the significance of adequate shelter considering the varicose global frameworks such as the UNHCR Emergency Handbook, Sphere Standards, and the Global Compact on Refugees. Correspondingly, at the continental level, Africa also hosts a significant number of world refugees with guiding legal instruments like the Kampala Convention. In Ethiopia, where the open door policy is practiced, there are more than one million refugees who are hosted in different regional states of the country. The country has adopted progressive policies regarding refugees, like Proclamation NO. 1110/2019 and OCP, which promotes refugee rights and self-reliance. Even though the country has different legal and policy documents, the adequacy of shelter remains challenging, especially in refugee camp like Kerbribeyah Refugee camp, which have a long-standing camp history. Therefore, assessing the spatial characteristics and adequacy of housing in the Kebribeyah Refugee camp could contribute towards filling the research gaps and show realistic practices for other camp in Ethiopia and the Horn of Africa.

## CHAPTER THREE: METHODOLOGY

In this section, the research methods used are discussed. Here, the research design and approaches used, the study area where the data is collected, the population and sample size, the data source, and collection techniques, including implementation to maintain the validity and reliability of the instrument, are described.

### 3.1 Research Design and Approach

According to the nature of the problem and the research objective, which is derived from a complex setting such as refugee shelter and adequacy of housing, the research requires multiple research methods to capture different dimensions like social, political, cultural, and environmental settings of refugees. As a result, the study has employed research approach

*Descriptive research* basically acts as a fundamental approach for this study by extracting its data from observation and documenting different aspects of its existing circumstance (Bender, 2010). It supports the first objective of the research by detailing how the camp has evolved physically. Here, observations can be made by the researcher, refugees, and key informants like RRS, UNHCR, and other NGO officials as a base for understanding the physical existence of shelter and settlement within the camp and refugees' daily experiences. Documentation on the other hand, includes description of what currently exists in Kebribeyah Refugee camp, focusing on refugee housing system formation and characteristics (Bender, 2010).

As a Research Method Mixed and Case Study has been used to study particularly benefits in creating a coherent and comprehensive research framework.

#### Mixed Method Approach

To gain various benefits regarding offering logical ground, methodological flexibility, and in-depth understanding of the study, employs a *Mixed Method research design* combining both qualitative and quantitative methods to provide a comprehensive understanding of the research problem. (Saraswati Dawadi, 2021) (Creswell, 2009).

- Qualitative method explores refugee perception and experience in relation to the adequacy of shelter. Semi-structured interviews and focus group discussions *with*

refugees, camp leaders, and key informants (RRS and UNHCR staff) to explore lived experiences, safety concerns, cultural relevance, and housing perceptions

- Quantitative method assesses the seven indicators of adequacy of housing in terms of their shelters. Structured household surveys targeting a sample of refugee households (randomly selected across different camp zones) to assess the seven UN-Habitat adequacy indicators (e.g., habitability, service access, tenure).

In addition, to gain more information about a particular area like the Kebribeyah Refugee camp and to obtain a comprehensive understanding of the social and spatial unit,

- Case Study Methods have been employed to further support both the descriptive and mixed methods. (Devi, 2020). Kebribeyah Refugee Camp is treated as a single, bounded case to enable an in-depth exploration of its unique socio-spatial dynamics.

Finally, the implantation of all three enables the researcher to have a holistic analysis that can reinforce the study's validity and reliability (Teddlie, 2010). Each method complements the others to link spatial patterns, adequacy indicators, and community perceptions, aligned directly with the study's objectives.

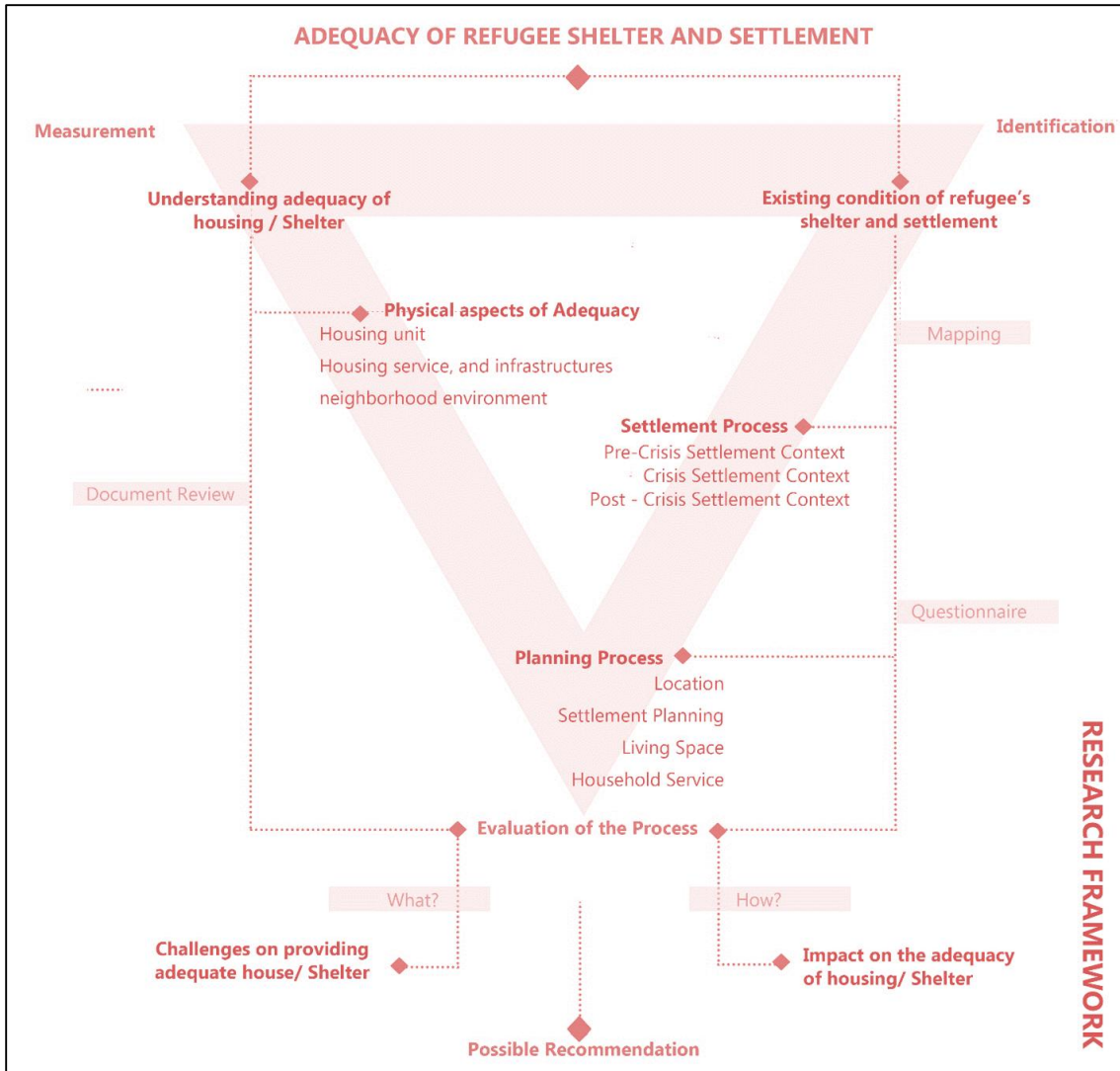


Figure 3.1-1 Research Framework

### 3.2 Case Study Selection Criteria and Process

#### 3.2.1 Selection Criteria

- Historical significance and Duration of the camp
- Location and Accessibility relative to other camp found in remote area
- Demographic Variation that helps to assess the adequacy of shelter regarding cultural and family structure
- Security and Logistic feasibilities

### 3.2.2 Selection Process

The case area selection process began with a desk review by conducting a literature review of refugee camp found in Ethiopia. The information extracted from the review basically focuses on the criteria mentioned above as camp duration, population size, security, and Accessibility. Then, by approaching RRS and UNHCR Ethiopia, the relevance and feasibility of the case areas were consulted in comparison to other camp like Sheder, Berhale, and Aw-barre. Finally, Kebribeyah refugee camp was selected due to its long-term existence, refugee population size, and camp relative stability, safety, and logistic feasibility.

## 3.3 Description of Study Area

### 3.3.1 Location and Environmental Context

The research study area is Kebribeyah Refugee camp located in Kebribeyah town, within Fafan zone of Somali regional state in Eastern Ethiopia.

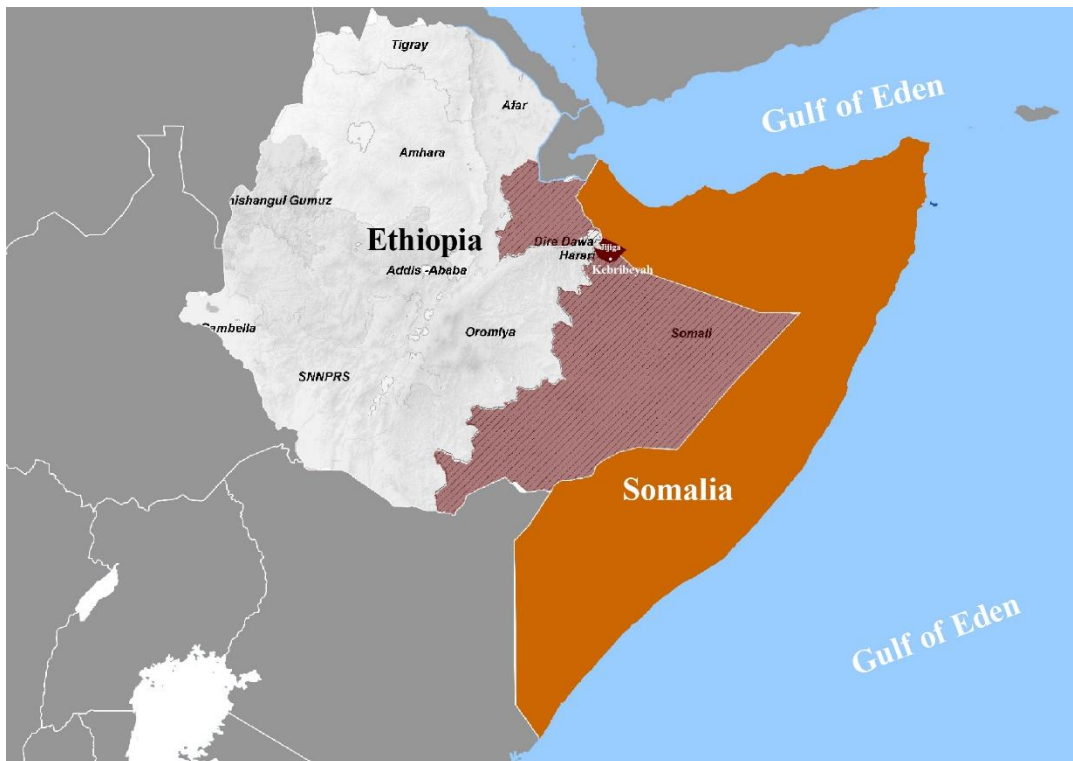


Figure 3.3.1-1 Keberibeya Refugee Camp Location Map

The camp is located 50km Southeast of Jijiga and 700km from Addis Ababa, the capital city of Ethiopia. See Figure 3.3.1-1. The camp location is environmentally characterized as a semi-arid region with high temperature, limited vegetation, low and unpredictable rainfall, which makes the area prone to drought and water shortage.

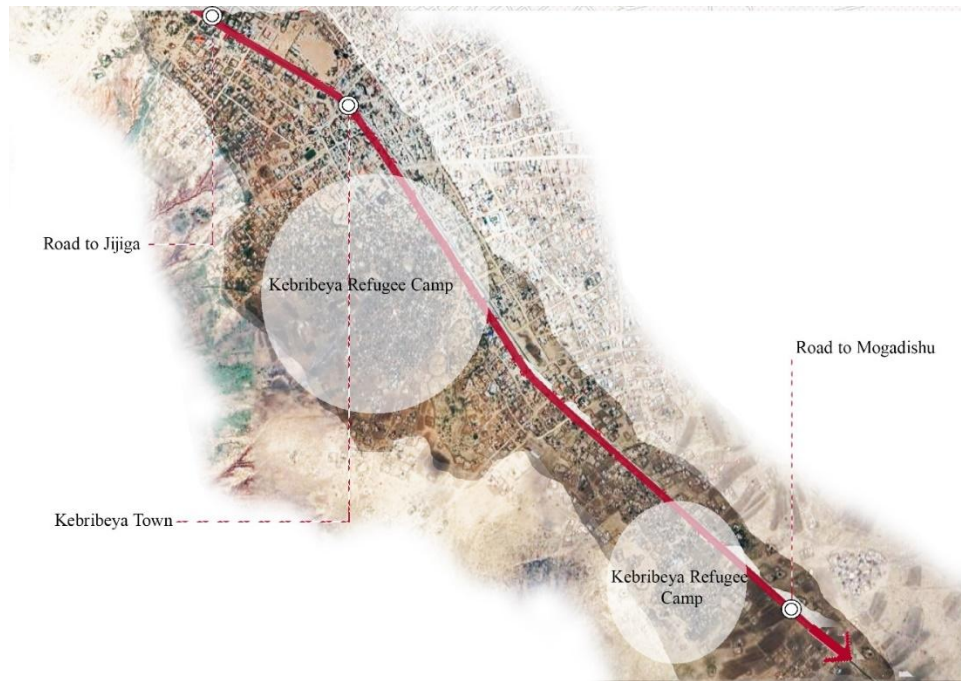


Figure 3.3.1-2 Relative Location Map of Kebribeyah Refugee Camp

Source (Google Earth Satelliet, 2025)

### 3.3.2 Historical and Demographic Background

Kebribeyah Refugee Camp is one of the oldest refugee camp in Ethiopia, which was established in 1991 (UNHCR, 2024). The camp was formed as a rapid response to the sudden influx of Somalia citizens following the escalation of the Somalia Civil War in the 1990s. (Project Gaia, 2015). At the start, the camp was intended to be a temporary site for returnees, but due to clan-based tensions, a group of refugees were resettled in the camp, which further led to permanent settlement beyond its original plan. (Habitat, UN, 2021). Gradually, the camp began to evolve as a long-term settlement area, which is currently hosting more than 20,000 Somalian refugees for over three decades.

### 3.3.3 Camp Administrative System

The camp is mainly administered by Ethiopian refugee and returnee's service with additional support from different humanitarian organizations like UNHCR, NRC and so on. For administrative service and management, the camp has 4 distinctive zones with 9 sections (UNHCR, 2006).

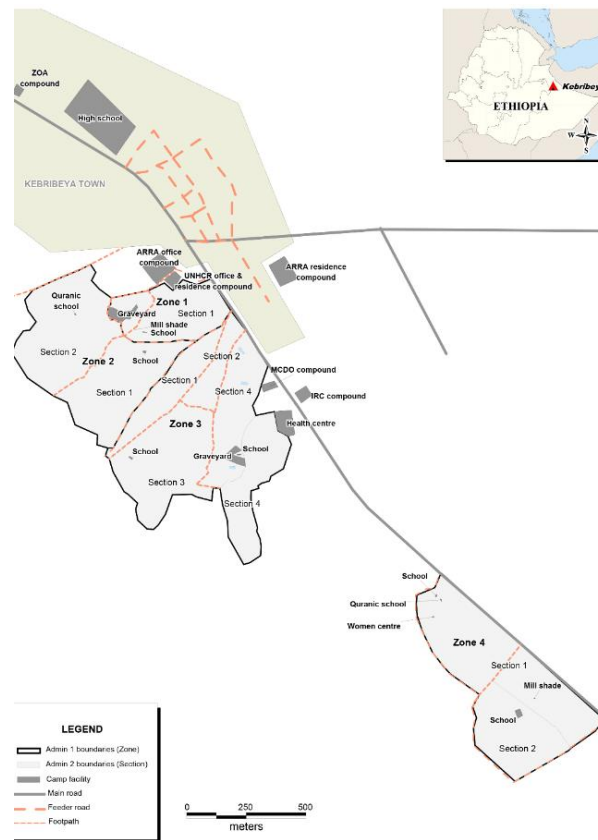


Figure 3.3.1-3 Kebribeyah Refugee Camp Administrative Map

Source – adapted from UNHCR, 2006, Kebribeyah Camp Overview

### 3.3.4 Why Kebribeyah Refugee Camp?

The study emphasizes the sustainable development theory, focusing specifically on the adequacy of housing in a broader context, which requires a study area that stayed for a long period of time. Considering Kebribeyah refugee camp's old history, the camp further presents an exclusive case that helps the study in achieving its objective. The camp has a characteristic of stable but wide population density that has prior experience in all refugee response phases. Therefore, the protracted setting of the camp has a significant effect in

achieving the research objectives and goals to assess adequate housing in refugee camp. Kebribeyah Refugee Camp was selected as a benchmark case area due to its historical significance as one of Ethiopia's oldest refugee camp that has a broader historical timeline considering refugee shelter. Also due to its ongoing shelter and other infrastructural challenges that have been unresolved for over three decades highlights its practical significance to study interventions and improvement in adequacy perception. Since the area has a protracted setting the different refugee policies that have been developed throughout the year have been applied in camp development and management which further makes the study area relevance to evaluate refugee policies and practical experience of shelter adequacy in Kebribeyah Refugee camp setting. In addition, the findings from the study area could indicate research gaps and best practices that can be applied to other camp in Ethiopia and Africa that have similar or relatable community and cultural practices in shelter planning.

### **3.4 Sampling Design**

#### **3.4.1 Sampling Technique**

The sampling techniques used for this study to conduct the case study and semi-structure the interview were purposive sampling, which is a type of non-probability sampling where the researcher intentionally selects participants based on specific characteristics or criteria (Yu, 2007) and Stratified Random Sampling to select participants for surveys within refugee settlements. The settlements will be stratified based on factors such as population size, geographical location, and level of services available. From each stratum, a proportional number of households will be randomly selected.

#### **3.4.2 Sampling Strategy**

- **Refugee Households:** A representative sample across different blocks based on household size, shelter type, and duration of stay.
- **Key Informants:** Purposeful selection of RRS and UNHCR officials, NGO representatives, and community leaders.
- **Observation Sites:** Selected based on diversity in layout, shelter type, and proximity to services.

### 3.4.3 Sample Population and Sample Unit

As of March 2025, the total population size of Kebribeyah refugee camp is 20,172. (UNHCR, 2025) Since the study focuses on the adequacy of housing, the sampling unit used was the individual household within the camp, which is basically assessed at the household level rather than the individual level. According to UNHCR (2025), the average household size of Kebribeyah refugee camp is 6 people per household, which leads to 3362 households (sampling units) (UNHCR, 2025). To meet the desired statistical constraints, the study size was calculated by using Standard Sampling Size Formula

$$n = \frac{N * Z^2 * p * (1 - p)}{e^2 * (N - 1) + Z^2 * p * (1 - p)}$$

Where:

- $n$  = required sample size
- $N$  = total population (in this case, 3,362 households)
- $Z$  = Z-score corresponding to the confidence level (for 95%,  $Z=1.96$ )
- $p$  = estimated proportion of the population (commonly 0.5 is used to ensure maximum sample size)
- $e$  = margin of error (0.05 or 5%)

$$\begin{aligned} n &= \frac{N * Z^2 * p * (1 - p)}{e^2 * (N - 1) + Z^2 * p * (1 - p)} \\ &= \frac{3362 * 1.96^2 * 0.5(1 - 0.5)}{0.05^2 * (3362 - 1) + 1.96^2 * 0.5(1 - 0.5)} \\ &= \frac{3362 * 3.84 * 0.25}{0.0025 * 3361 + 3.84 * 0.25} = \frac{3362 * 0.96}{8.40 + 0.96} = \frac{3227.52}{9.36} = 344.82 \\ &\approx 345 \end{aligned}$$

The minimum number of necessary samples size is 345 households to achieve 95% Confidence Level with a 5% Margin of Error

### **3.5 Data Source**

The study used both primary and secondary data sources, where the primary data was extracted from Kebribeyah refugees, Field visits/on-site observation, and Key informants such as RRS and UNHCR Kebribeyah Refugee camp officials and Refugee community coordinators. The secondary data was sourced from government and non-governmental agencies responsible for managing refugee camp, such as RRS, UNHCR, and UN-Habitat official reports, datasets on refugee population statistics, demographic data, maps, and policy documents. Also, academic research and reviews like journal articles, theses, and reports focusing on adequacy of housing and refugee shelters were another source of data collection.

### **3.6 Data Collection Techniques**

The study has employed a mixed-method approach to insure in-depth understanding of refugee housing in terms of adequacy. Thus, the collection techniques are

#### **3.6.1 Quantitative Method**

Quantitative data was collected by Survey questionnaire for 356 refugees who are registered in Kebribeyah Refugee camp to gain measurable data on refugee living conditions, housing satisfaction, compound perception, and housing needs as a means to support the qualitative data. The survey questions were both closed-ended (Likert Scale) and semi-structured questions.

#### **3.6.2 Qualitative Method**

The qualitative data was collected by using various instruments to ensure methodological precision in data collection and analysis. The instrument included interviews, focused group discussion, Observation, case study, and archive document analysis. In-depth, Interviews were conducted with 10 refugees whose shelters were further selected as a case study for spatial analysis. The interview was made to gain refugee living experience and understand their camp environment. The questionnaire for the interview was an open-ended semi-structured interview conducted in a suitable area to speak freely. Other in-depth interview was conducted with key informants that are directly related to Kebribeyah Refugee camp. This was a semi-structured interview with camp officials and Stakeholders

such as RRS camp coordinator, RRS humanitarian shelter assistance, UNHCR Camp coordinator, and refugee community leader. The interview was conducted to gain an understanding of the camp management process, including good practices and challenges in shelter planning and administration. The interview was conducted in person in the officials' private office and with Google meetings. In focused group discussion, three groups of 8 to 10 refugees participated to understand shared experience and perception of refugee shelter and adequacy. The discussion was moderated by the local data collectors using open-ended questions to guide the discussion and extract daily challenges, cultural practices, and housing satisfaction. During field visits, direct observation to refugee shelters and camp was captured to document the physical condition of the shelter and built environment. The method used here was notes, Photographs, sketches, rough architectural drawings with actual dimensions focusing on shelter types, layouts, zonings, infrastructure and basic service location, and general usage pattern of the camp. The observation was further focused on case study analysis to document in-depth shelter and settlement information in terms of adequacy of housing in selected refugee shelters. Here, specific shelters were selected based on different variables like size, form, location, and infrastructure. The final instrument was a desk review of archival maps, satellite imagery, regional and humanitarian reports to identify spatial and settlement changes in camp layout and shelter arrangements by cross-referencing historical maps with recent satellite images.

### **3.7 Data Analysis and Presentation Techniques**

As the study used a mixed research method, data was analyzed using different techniques. Descriptive statistics methods have been used to analyze the quantitative data and cross-tabulation was also used to compare variables with shelter satisfaction rates. Here, the presentation techniques are tables, charts, and graphs with statistical summaries showing frequency and percentage. The qualitative data analysis techniques are mainly thematic and content analysis, where repetitive patterns in individual answers are analyzed, and housing experience and spatial narratives are explored. The qualitative analysis is presented in verbatim quotes or word clouds to support quantitative data and thematic issues. Finally, the spatial data collected by observation and desk review will be analyzed by Spatial Urban morphological Analysis, where the presentation will be dichromic and synchronic analysis using spatial mapping techniques (Alnwick, 1960). Spatial documentation was analyzed

by mapping, spatial configuration, overlaying, comparative spatial analysis and photos. The presentation here was sketches, maps, diagrams and annotated architectural plans, elevations and sections. In general, the data is presented in sequential order in a way that answers the research questions and supports the adequacy indicator list. Thus, the above data analysis and presentation will be inserted in all relevant places of each topic, supporting and further narrating what one method has discovered through the data.

### **3.8 Validity of the Study**

As Robert K. Yin (2014) stated, this study will validate data through the triangulation of multiple sources of evidence, chains of evidence, and member checking (Robert K. Yin, 2014). Accordingly, the research validates its findings by triangulation of data found from three main sources. These are observations conducted during field visits by the research itself, qualitative interview data conducted with both refugees (private and focused group discussion) and key informants, and quantitative survey conducted by multiple refugees. As a result, the data collected from different sources, cross verification and support to one another, was made to gain harmonizing insights about the adequacy of refugee shelters. Therefore, the research's internal validity was established through the use of established analytic techniques such as pattern matching, external validity through analytic generalization, and reliability through case study protocols and databases (Robert K. Yin, 2014) .

## CHAPTER FOUR: RESULTS AND DISCUSSION

This section will present the result and the in-depth discussion point that has been extracted from the collected data to meet the aim of the research, which is to assess the adequacy of housing in the refugee camp context, particularly in Kebribeyah Refugee Camp. The section will be outlined according to the objective and research question of this study. Since the research used a mixed-method approach, both qualitative and quantitative data will be presented in a balanced manner from all data sources.

### 4.1 Demographic and Household Profile

#### 4.1.1 Respondent Profile

In order to better understand the adequacy of housing in the Kebribeyah Refugee Camp, it is important to understand the refugees and their shelter and settlements.

##### A. Respondent Age Group

The majority of the refugees living in the camp, covering 71.3%, are aged between 36 and 65, and about 19.7% are aged group from 18 to 35. This shows that a significant number of the total population has spent their golden or productive year in the camp, or they were born or were at a young age when they arrived in this camp, considering that the camp has been almost 35 years since its establishment. See Table 4.1-1

Table 4.1-1 Respondent Age Group

Age Group	Frequency	Percent
18-35	70	19.7
36-65	254	71.3
66+	32	9.0
Total	356	100.0

UNHCR (2023) defines the refugee situation in terms of population and duration. Protracted refugees are those refugees populated 25,000 and above or refugees who have been displaced for more than five consecutive years (UNHCR, 2019)

In this condition, the Kebribeyah Refugee Camp was established in the 1990s with a population of around 25,000, which is clearly under the UNHCR's definition of a protracted refugee camp. Such long-term existence in refugee camps creates dormant livelihood and identity loss, which further affects refugees' psychological and social well-being and aspirations (Milner, Dr James, 2011).

*B. Respondent Gender*

Similarly, the frequency of gender of the dwellers was 57% for females and 43% for males. As mentioned in the interviews and focused group discussions, in Somalia culture, the household head is usually the female, who is the mother or head of the house. Thus, a greater percentage of female respondents support the above mythical justification. See Table 4.1-2

Table 4.1-2 Respondent Gender

Gender	Frequency	Percent
Male	153	43.0
Female	203	57.0
Total	356	100.0

Even if women household heads in Somali culture bear the unshared burden of maintaining a household in refugee camps, it affects how shelter adequacy is experienced and evaluated according to the women's perceptions (Turner S. , 2016).

In addition, according to UNHCR in Displaced settings, the perception of Women Education makes responses gender-sensitive, which furthers all shelters to prioritize dignity, safety, and autonomy (UN Women, 2021)

*C. Respondent Education*

The educational background of the respondents from the total respondents is that about 61.5% are illiterate; as a result of the Somalia Civil War, the long-term refugee experience has led the majority of the refugees to not get proper education. Likewise, 21.1% and 17.4% have completed primary education and secondary education, respectively. Here, it is revealed that their displacement experience and educational background have impacted

their view towards the camp and shelter. They repetitively mentioned that their priorities about housing have shifted majorly to immediate functionality and usability rather than long-term durability and structural integrity See Table 4.1-3

Table 4.1-3 Respondent Education Level

Education Level	Frequency	Percent
Illiterate	219	61.5
Primary Education	75	21.1
Secondary Education	62	17.4
Total	356	100.0

As indicated in the survey, a disruption caused by conflict and displacement resulted in 61.5% of the respondents being illiterate. As explained by Dryden Peterson (2011), low education levels in protracted refugee settings lead to self-reliance and informed participation in shelter design and improvement (Dryden-Peterson, 2011).

Also, the prolonged displacement without proper education creates refugee dependency on aids and continues vulnerability (Kirk, 2006).

*D. Respondent Area of Origin*

Even though Kebribeyah refugee's country of origin is Somalia, they have been displaced to Ethiopia from different parts of their country. The bar chart below (See Figure 4.1-1) shows their specific origin. The majority of the refugees came from Woqooyi Galbeed and Bari with 35.4% and 20.2%, respectively. To have spatial understanding, it is further discussed in a map. See Figure 4.1-2

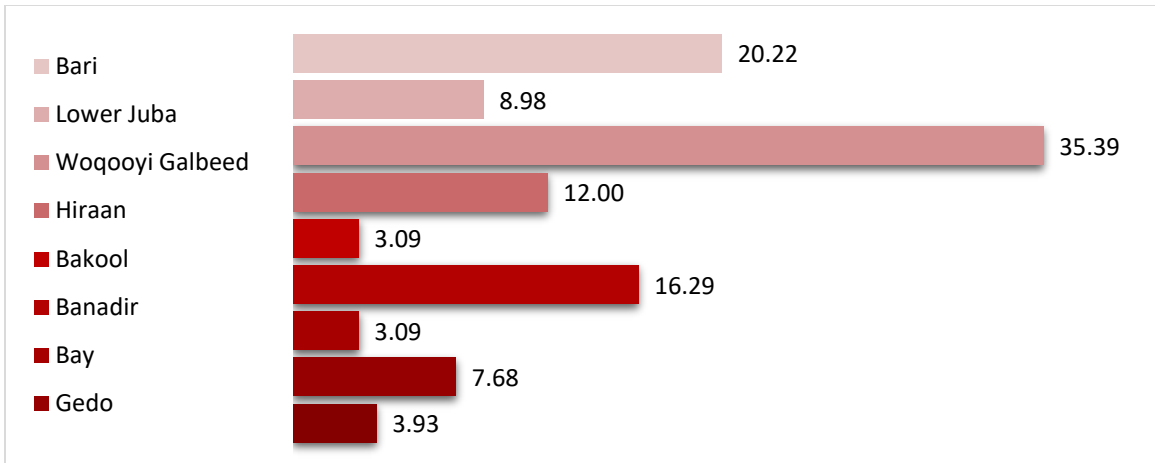


Figure 4.1-1 Refugee Area of Origin

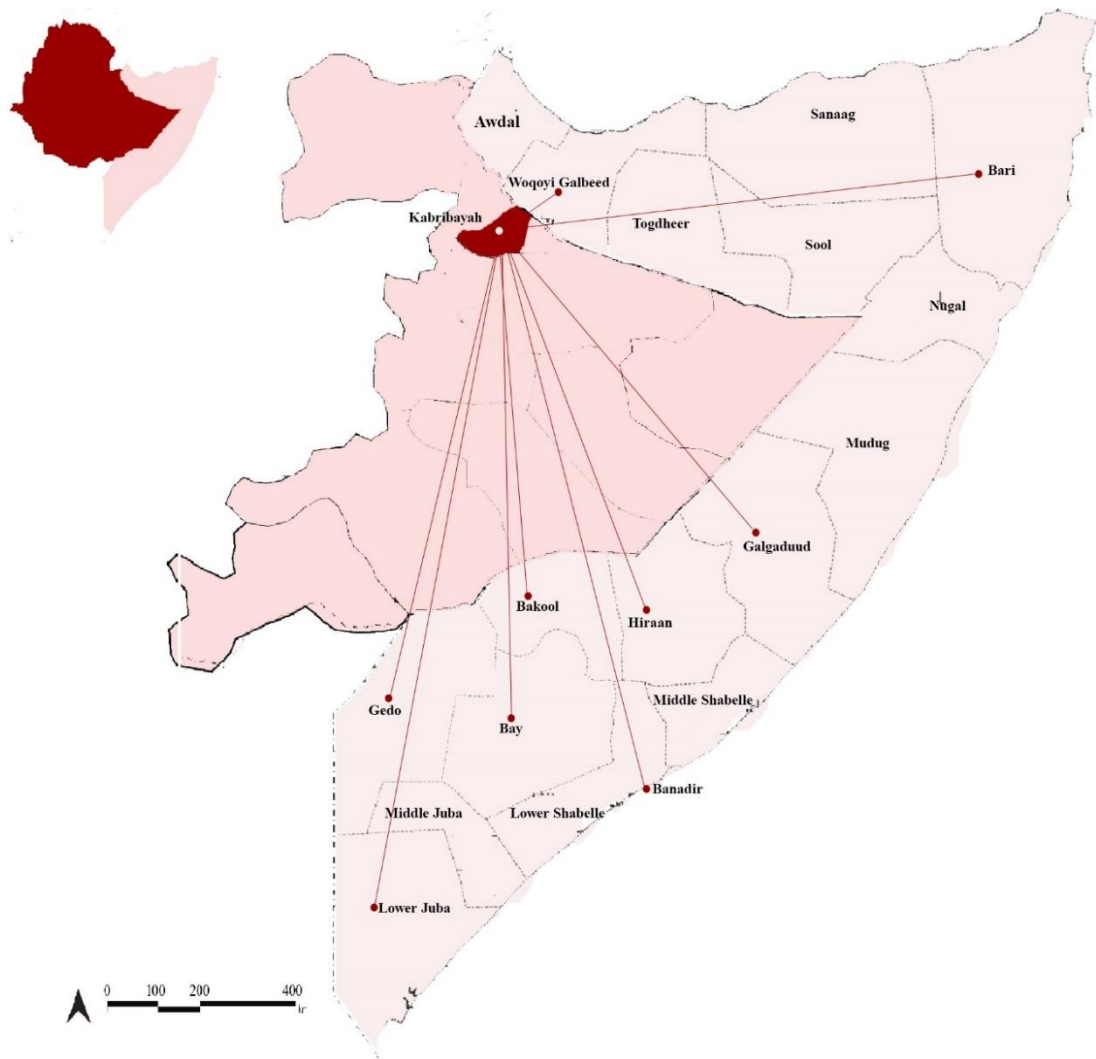


Figure 4.1-2 Refugee Area of Origin Map

By reviewing the area of origin where the refugees came from, Woqooyi Galbeed is found to be a very strategic place with rich farmland and large ports where the resident's livelihood very much depended on tending sheep, goats, and camels, cultivating sorghum and raising cattle (ReliefWeb, 2012). During the qualitative interview and focus group discussion, it was understood that the refugee's perception towards the camp and shelter is very dissatisfactory considering their previous lifestyle of owning a large plot of land and having multiple livelihood opportunities, which was basically related to their large plot of farmland, an enormous number of rearing cattle's and access to the large port for exchanging good, the camp is found to be disruptive place in relation to their norms, lifestyle, and dignity. As Jacobsen stresses, refugees' shelter experiences are influenced by their pre-displacement housing and livelihood opportunities (Jacobsen, 2005). Similar to the Somali refugees who used to own their own houses, land, and livestock, the primary source of many refugees was Woqooyi Galbeed. The socio-economic structure of the rural, livestock-based lifestyle highlights the area.

The dissatisfaction with the current camp lifestyle stems from feeling disempowered in a narrow, communal, and overcrowded shelter (ReliefWeb, 2012).

#### *E. Respondent Previous Shelter Experience*

While extracting information about the previous residential exposure majority of the refugees (about 50 to 52 %) responded the irrelevance of the information since they were born in the camp or were children during the time of displacement from their country. But then from general data set about 39.3% were living in rural area with private ownership of the house. Around 31% were living in traditional Somalia House. In the view of their duration in their previous residence only 18.3% are the one that stayed longer for about 11 to 15 years. See table 4.1-4 & table 4.1-5

Table 4.1-4 Location and Ownership of Previous Residence

	Frequency	Percent
Not Applicable	181	50.8
Rural Area	140	39.3
Urban Area	35	9.8
Total	356	100.0
Ownership	Frequency	Percent

Not Applicable	186	52.2
Private House	170	47.8
Total	356	100.0

Referring to the quantitative survey, which shows that refugees own their previous homes, the Kebribeyah encampment model restricts their dignity and long-term planning for the camp (UN Habitat, 2014).

Table 4.1-5 Type and Duration of Previous Residence

Type	Frequency	Percent
Not Applicable	186	52.2
Traditional House	111	31.2
Modern House	59	16.6
Total	356	100.0
Duration	Frequency	Percent
Not Applicable	186	52.2
1-5 Years	22	6.2
5-10 Years	50	14.0
11-15 Years	65	18.3
More than 15 years	33	9.3
Total	356	100.0

During the qualitative interview, the refugees discussed their previous experiences, which influenced their perception of the camp. Refugees who have lived in the urban area have a better understanding of having well-planned infrastructures, quality housing, and livelihood opportunities. Even if the majority of refugees lived in traditional houses, their ownership rights have given them a chance to feel more stable and secure.

*“My families used to have a farming land and lots of camels in Somalia, now that we are refugees we have nothing to own or count as ours.” One of the refugees*

On the other hand, such stability and security were not in the heart of the refugees as their home ownership, tenure, and stability were in the hands of the host community, and universal knowledge of refugee camp life was to be temporary. Thus, the refugees have survival-focused thinking towards their shelter rather than evaluating it according to adequacy and sustainability.

As the findings show, refugees prioritize functionality over durability, which aligns with survival strategies in camps. According to Schmidt( 2003), a temporary shelter planning in refugee camps ignores long-term usability, which leases to survival needs perception rather than standard shelters and settlements (Schmidt, 2003). Refugees usually adapt to what is available and given to them, which leads to meeting daily needs rather than long-term needs with durable solutions (Corsellis & Vitale, 2005).

#### 4.1.2 Household Profile

##### A. Household Age Group

The average household size of the respondent is 8, with 49% male and 55% female children. The additional household members that are accommodated in the house are about 4.8%. As the analysis shows, the majority of the household is aged between 5-12 and 1-15, which is 38.2% and 30.5% of the total. See Figure 4.1-3. The UN-Habitat defines overcrowding as a major shelter inadequacy resulting in a lack of privacy, safety, and comfort. Kebribeyah Refugees, considering the Somali Muslim households' culture and religion, have critical issues related to the social and moral functions of the camp (UN-Habitat, 2011).

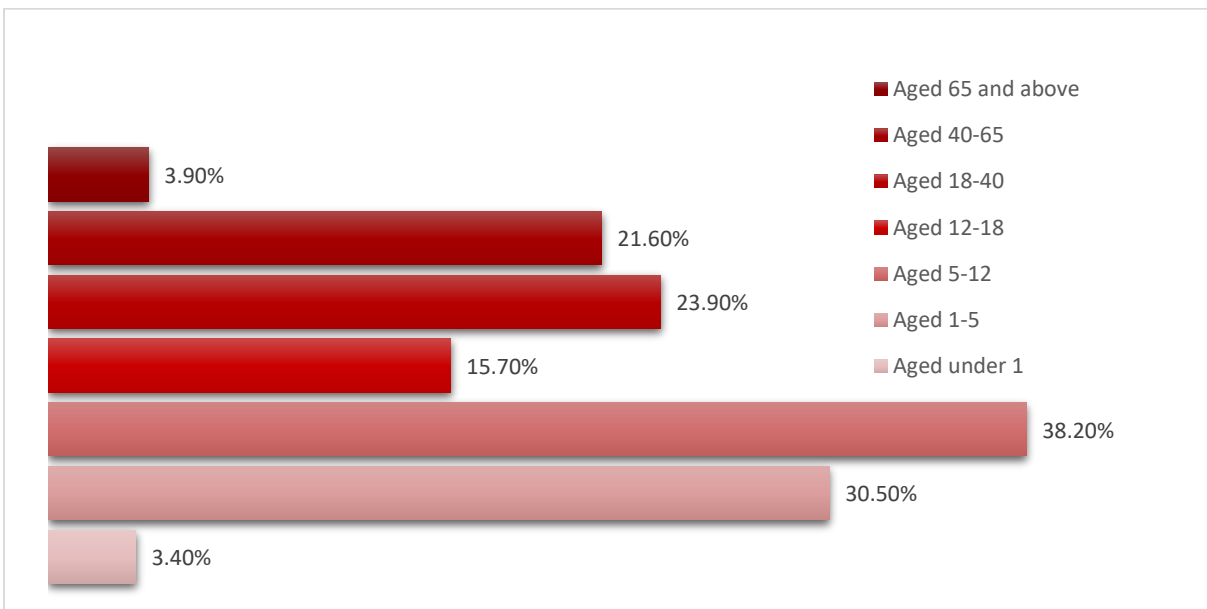


Figure 4.1-3 Household age group

Since the average household size is 8, shelters are highly affected by overcrowding and might require additional spaces to accommodate all family members and have better shelter quality.

When overcrowding occurs, women, especially in an Islamic religion, believe that community privacy, security, and safety can't be overlooked in relation to shelter adequacy. Likewise, the age group data reveals that 73.1% are children under 18 years old. They require a safe and secure environment protected from hazards. Also, this data shows that the shelter might be overcrowded, which might impact a lack of privacy and appropriate usage of space for its intended purpose. In a humanitarian context, 3.5m<sup>2</sup> per individual is the minimum standard for shelter space per person; if a shelter does not meet the standard, children, women, and disadvantaged groups are the first to be affected by overcrowding risks such as abuse, Gender-based violence (GBV), lack of cultural appropriate privacy and health issues (Sphere Association, 2018). In addition, the UN (2014) highlights the importance of including age structure and size in shelter planning to accommodate household composition and avoid risks that might be raised as a result of overcrowding (UNHCR, 2014). Supporting this refugees often perceive shelter adequacy in physical and non physical ways such as culture. In Islamic household like Kebribeyah Refugee camp gender segregation and spatial privacy are important but have been compromised due to the overcrowding shelters (Brun & Fabos, 2015).

#### *B. Household Education Level*

The education background illustrates that 34.1% and 28.9% of the total households have completed their primary and secondary education, respectively. See Figure 4.1-4. To improve livelihood opportunities, civic engagement, and understanding of rights, including housing adequacy and education, plays a vital role for displaced people (Dryden-Peterson, 2011). In protracted displacement situations like Kebribeyah, education enhances the ability to advocate for better services, adopt effective shelter solutions, and participate in the design and planning process (Global Education Monitoring Report Team, 2018). Education in refugee households promotes innovative shelter adaption strategies, builds a safe environment, and seeks livelihood-based improvements that serve for a more extended period (Betts, Bloom, Kaplan, & Omata, 2017).

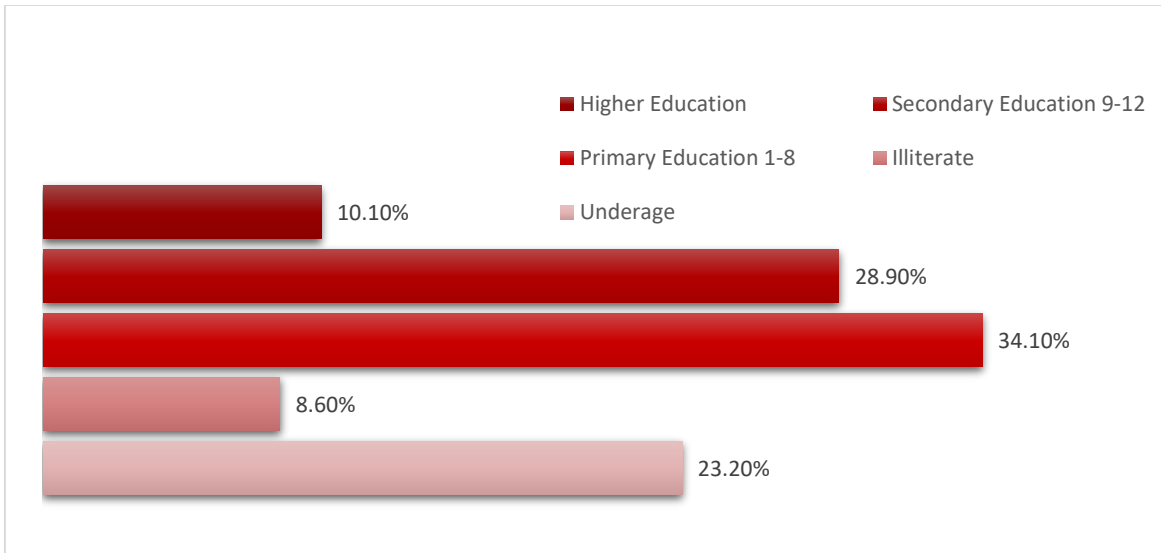


Figure 4.1-4 Household Education Level

*C. Household Members with Special Needs*

Considering the household members who require special needs, about 2% are visually impaired, and 1.7% have hearing deficiency. See Figure 4.1-5. Household members with special needs often require special attention in camp layout, and shelter, where they require smooth and planned physical accessibility, which can enhance their movement, access to basic services, and ability to live independently. Refugees with special needs often face disproportional service when it comes to shelter and other WASH services, which limits accessibility, leading to reduced autonomy and safety (World Health Organization & World Bank, 2011). UNHCR (2019) highlights the need for inclusive design in refugee camps, especially in shelters, focusing on physical accessibility, inclusion, and safety for all refugees with special needs (UNHCR, 2019). Another supporting design approach in humanitarian shelter interventions is also promoted by CBM International, which advocates for shelter design and space to be usable by all people to the maximum extent possible (CBM International, 2018).

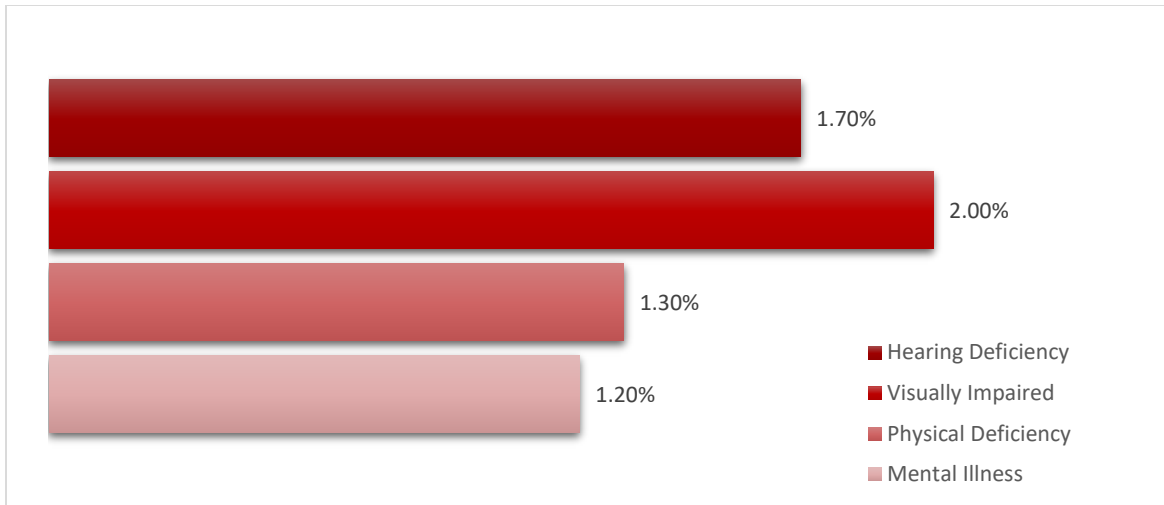


Figure 4.1-5 Household Members with Special Needs

## 4.2 Refugee Shelters and Settlement in Kebribeyah Camp

According to Tom Corsellis & Antonella Vitale (2005), to have a broader understanding of individual shelters which does not exist in a void space, an understanding of shelter within the settlement layout is significant to this study (Corsellis & Vitale, 2005). Thus this section has incorporated data about settlement layout and individual shelters collectively.

### 4.2.1 Refugee Settlement Pattern

Kebribeyah Camp, established in Jijiga, Ethiopia, in 1991, emerged as a rapid response to the sudden influx of Somalian citizens following the escalation of the Somalia Civil War in the 1990s (Project Gaia, 2015).

#### 4.2.1.1 Settlement Fact

The settlement Trends of the Kebribeyah refugee camp registered data shows that the area was formed 35 or more years before due to the Somalia Civil War and the sudden influx of its citizens to the area.

Primary Element – The settlement of Somalia citizens due to a civil war in Somalia, which lead to the displacement of thousands of citizens to Eastern Ethiopia and the formation of Kebribeyah Returnees Center.

Secondary Element – The settlement of Somalia Refugees due to a civil war and clan tension was raised once again in 1991 and brought a massive number of the Somalia population to re-settle in Kebribeyah refugee camp.

#### 4.2.1.2 *Settlement Chronology and Growth*

At the start, the camp was intended to be a temporary site for returnees, but due to clan-based tensions, a group of refugees were re-settled in the camp, which further led to permanent settlement beyond its original plan (UN Habitat, 2020). Kebribeyah refugee camp as a settlement has demonstrated a population growth rate of 64.29% over the past 10 years based on the analysis carried out for this study by examining the initial population census data in 2018 (14,413) and the current population in 2025 (20,172)) (UNHCR, 2018).



Figure 4.2-1 Aerial View of Kebribeyah Refugee Camp

Source UN Habitat Keberibeyah Settlement Profile

Despite refugee camps being initially formed as temporary responses, refugee camps often become protracted settlements due to prolonged conflicts, as seen in Kebribeyah (UNHCR, 2019). Betts (2017) argues that protracted refugee settlements often lead to informal urbanization, where planning and infrastructure lag behind population growth, as seen in Kakuma and Dadaab refugee camps (Betts, Bloom, Kaplan, & Omata, 2017).

Even though the population growth rate suggests an extremely high population growth rate, the refugee community has been static as a result of new influxes being hosted in different Somali Refugee camp since 2009.

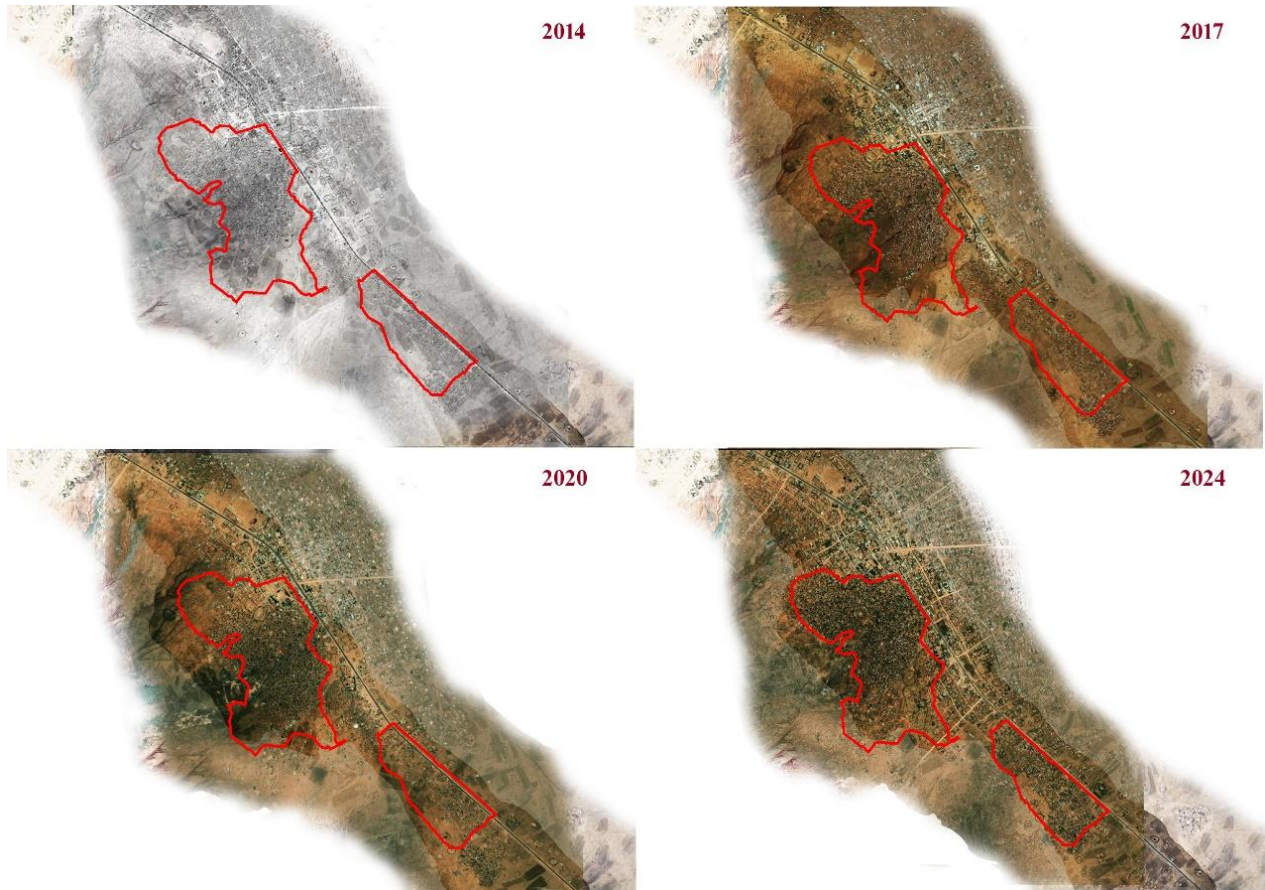


Figure 4.2-2 Settlement timeline chronology

Source; Adapted from ArcGIS Google Map

The physical expansion of the camp can be seen in the northwest and southeast of the main road from Jijiga to Keberibeyah in nearby land. The expansion clearly shows that the initially defined boundary line that segregates the host community from the refugees has been kept so far, but as the town of Keberibeyah spread through nearby undeveloped lands, the host community has blurred the segregation and tried to settle in the southwest are across the main road. According to Crisp (2000), refugees and host communities require spatial integration as settlements, which affects land use, tenure rights, and infrastructure stress, especially in older camps like Keberibeyah (Crisp, 2000).

Despite the importance of integrating refugees and the host community, urban expansion and blurred boundaries between host and refugee communities can lead to planning challenges and resource competition (O'Callaghan & Sturge, 2019).

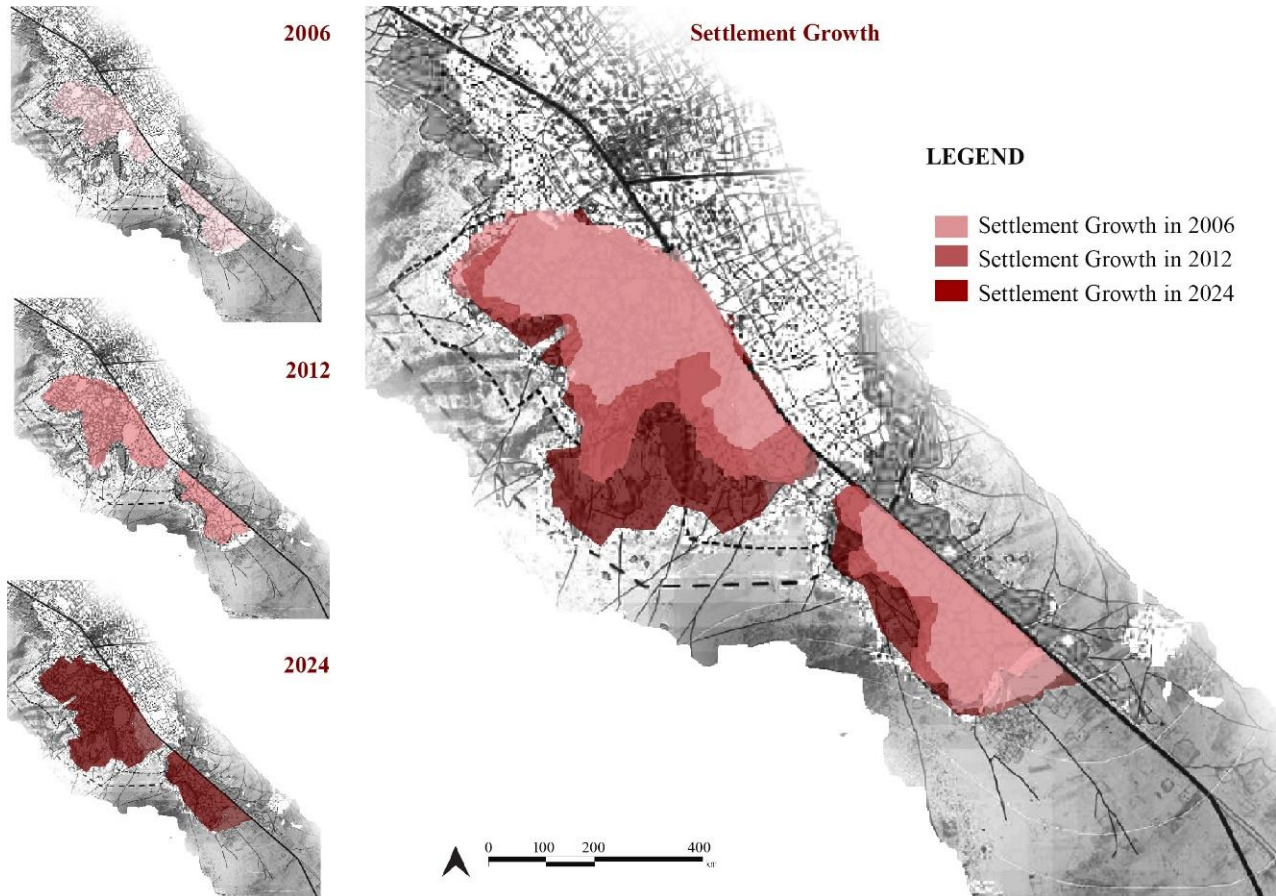


Figure 4.2-3 Settlement Growth Map

Gradually, the camp began to evolve as a long-term settlement area, which is currently hosting more than 20,000 Somalia refugees for over three decades.

As mentioned by different officials and camp coordinators, there hasn't been any major intervention done over a decade to upgrade or re-plan the camp. But throughout the years, there have been temporal milestones that include influx waves, policy changes, and local (UN Habitat, 2020). These are:

- *During the initial influx and political instability, the country created a Cross- Mandate Policy in Somalia Region in 1992*
- *In 1997, a high level of repatriation and resettlement was under operation by volunteer refugees.*
- *In 2009, due to capacity limitation, Camp under the Fafan zone, including Kebribeyah, had a policy shift and began settling newly arriving refugees in Dolo Ado.*
- *In 2016, Ethiopia signed the New York Declaration to integrate refugees with host communities who have lived in Ethiopia for more than 20 years.*

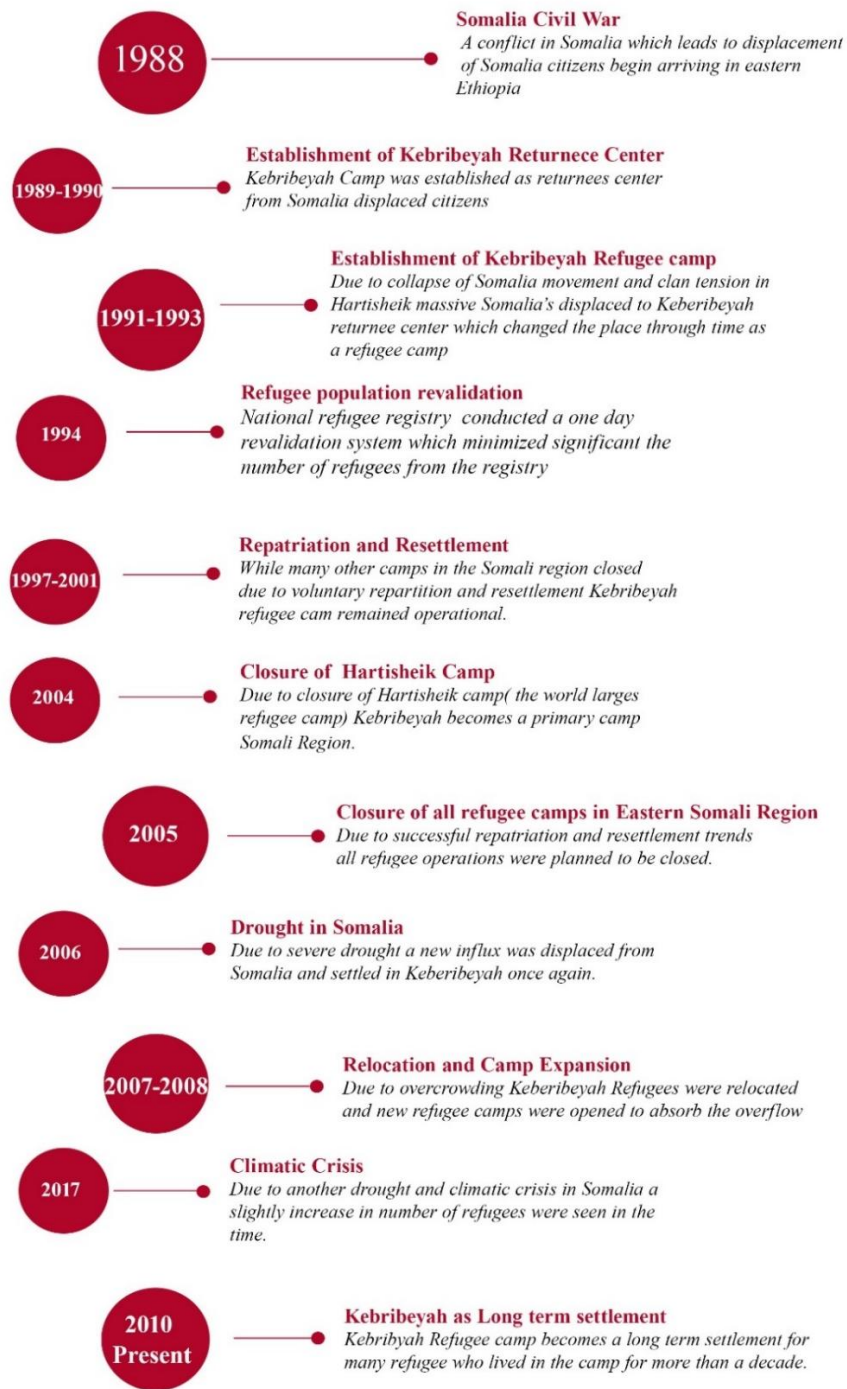


Figure 4.2-4 Settlement Timeline

#### 4.2.1.3 Settlement Pattern collapse

The refugee settlement is categorized into four different zones and nine sections for administrative purposes. The zones are found on the southwestern side in close proximity along the main highway road.

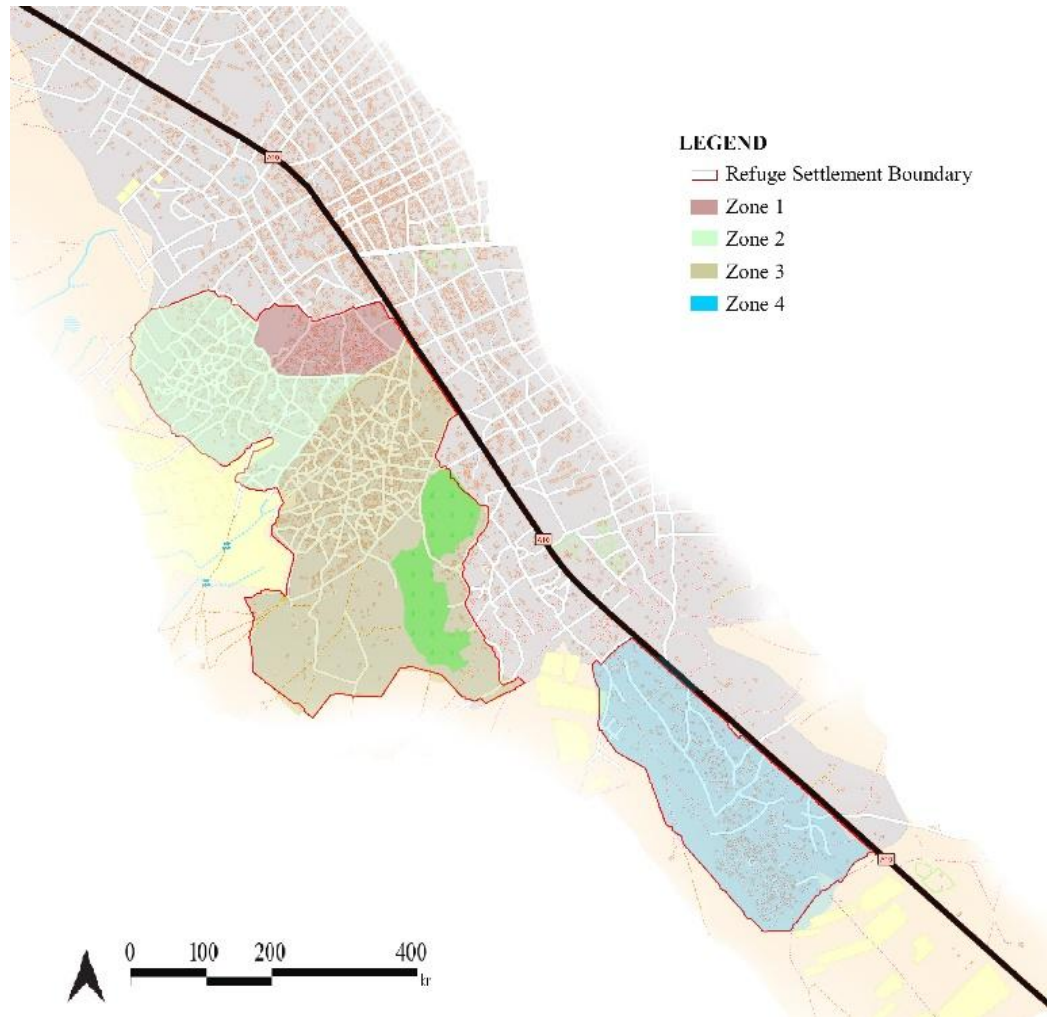


Figure 4.2-5 Settlement Zonal Classification Map

The spatial layout of the camp shows a clustered organization where land parcels are formed in an organic pattern. The settlement was not designed to have some specific pattern; it grew gradually following a natural topography and settlers' movement pattern. The buildings are detached and vary in size, though they are generally rectangular and proportionally scaled. These structures do not align with a clear parcel layout or street grid. As a result, the spatial arrangement is irregular, creating amorphous-shaped open spaces throughout the compound. These open areas are mostly

used for various domestic activities. In the image above, different types of building densities, spatial patterns, and shapes can be observed, reflecting the variations in location and stages of development.

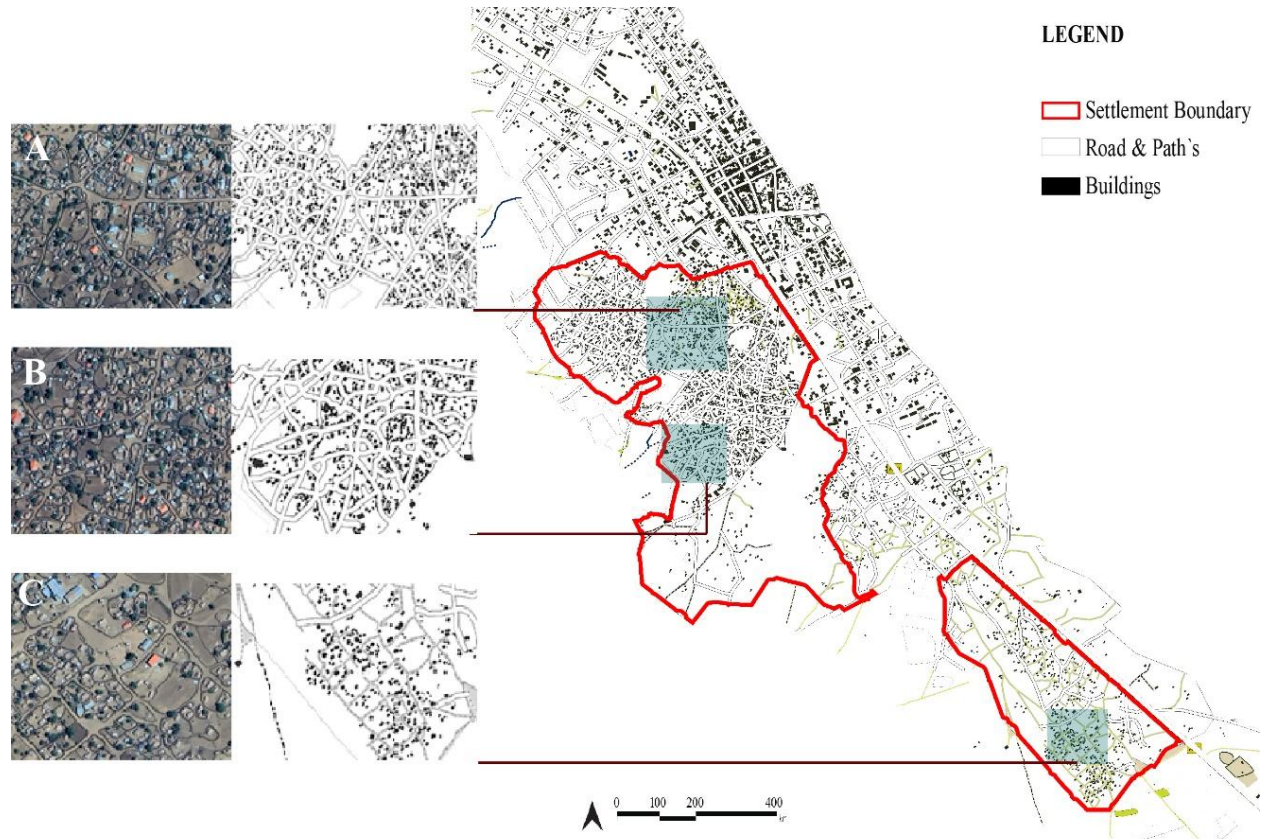


Figure 4.2-6 Camp Settlement Pattern

Source adopted from Google Earth Imagery

Considering the dynamic characteristics of refugee settlements, it is essential to analyze refugee camps through an urban lens, taking into account their distinct land use and spatial characteristics (Hagen-Zanker & Mallett, 2016).

Refugee camps, such as Kebribeyah, can evolve into urban settlements over time, developing characteristics similar to those found in urban areas, including informal economies, social networks, and spatial dynamics, as seen in the Kakuma Refugee camp (Jansen, 2011).

#### 4.2.1.4 Settlement Topographic Pattern

The town is found on slightly elevated topography following the Valley found to the South and West of the region. The camp settlement, on the other hand, is found to be settling within the flat area along the main road and expanded toward the southwest to a slightly depressed area.

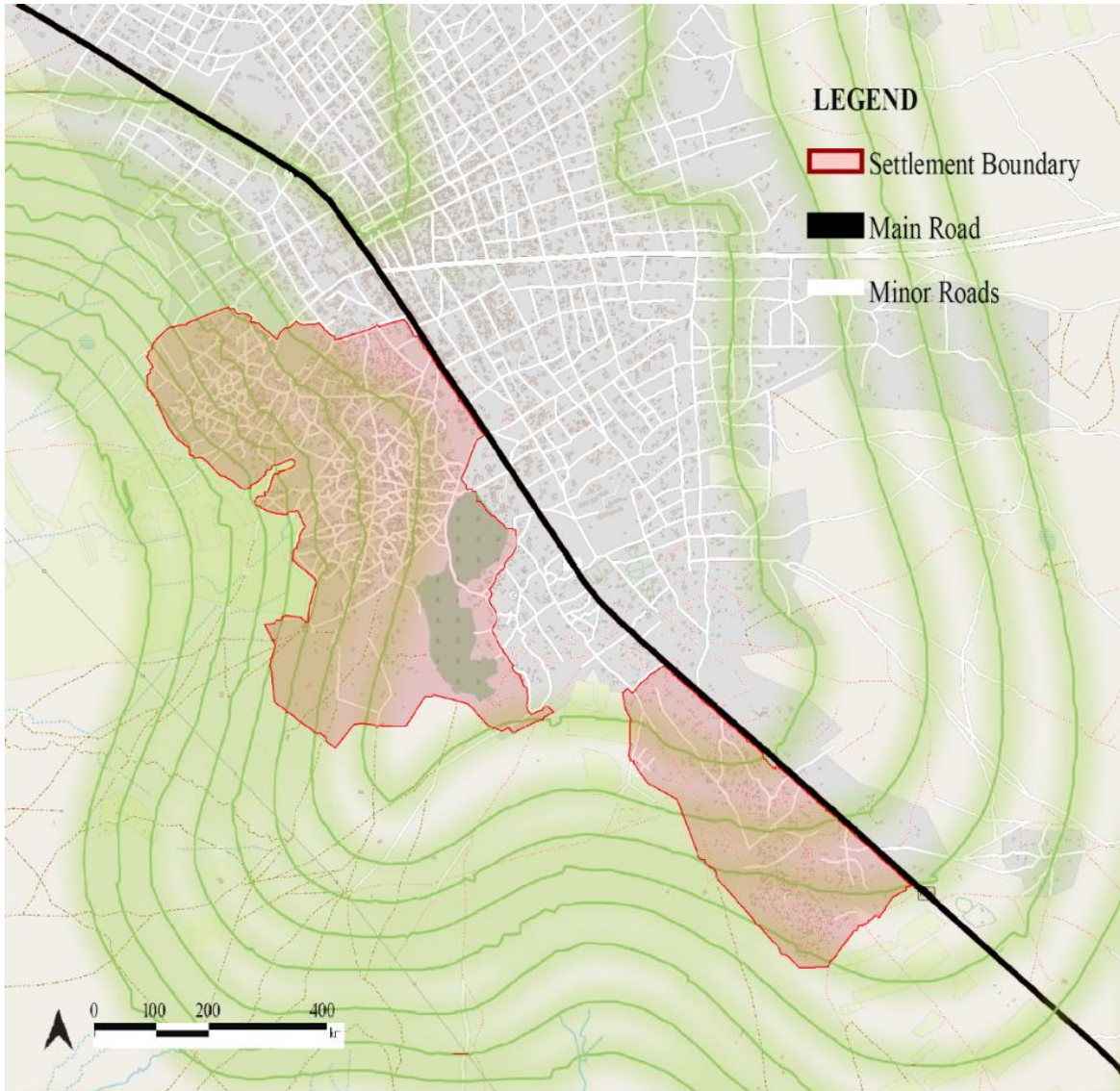


Figure 4.2-7 Slop Analysis and Contour

Source Adapted from Open Street map

Since the refugee settlement area is planned on a left-over area that was not occupied by the host community, the settlement is prone to flood. The slight depression in the camp settlement has

formed natural drainage and watershed towards refugee shelters. While some shelters remain safe from runoff, the main pathway across the camp is prone to extreme erosion and major drainage problems. The Sphere Standards require refuge shelter settlement sites to be free of flood-prone zones and to provide easy access to adequate drainage and physical access to basic services and infrastructure (Sphere Association, 2018). As UN-Habitat recognizes, protracted refugee settlements that are informally growing require upgrades or redevelopment plans, which do not prevent overcrowding and poor access to basic services and infrastructure (UN Habitat, 2020).

According to Sphere Standard, camp settlements should be free of floodplains and drainage problems as it will limit refugee living space, mobility, and access to services (Sphere Association, 2018). Thus, the current Kebribeyah camp settlement is not an ideal site to construct shelter for refugees. Moreover, the topography has constrained the settlement growth pattern as it follows the southwest direction towards the depressed area, forming an irregular settlement pattern. At the international scale, refugee camps emerge informally when displacement becomes prolonged, as in Kakuma (Kenya) and Dadaab, where short-term measures cannot meet longer-term living needs (Betts, Bloom, Kaplan, & Omata, 2017). In Kebribeyah, the lack of formal spatial planning mirrors similar deficits, violating key Sphere Standards in site planning and infrastructure provision (Sphere Association, 2018)

#### *4.2.1.5 Settlement Street Network*

According to the spatial map, the Street network shows a formal pattern to the northeast where major host communities settled and organic patterns around the camp settlement. In refugee settlements, it is required to have a coherent road network, land-use zoning, and disaster resilience as the framework for planning post-disaster and refugee settlements (Corsellis & Vitale, 2005).

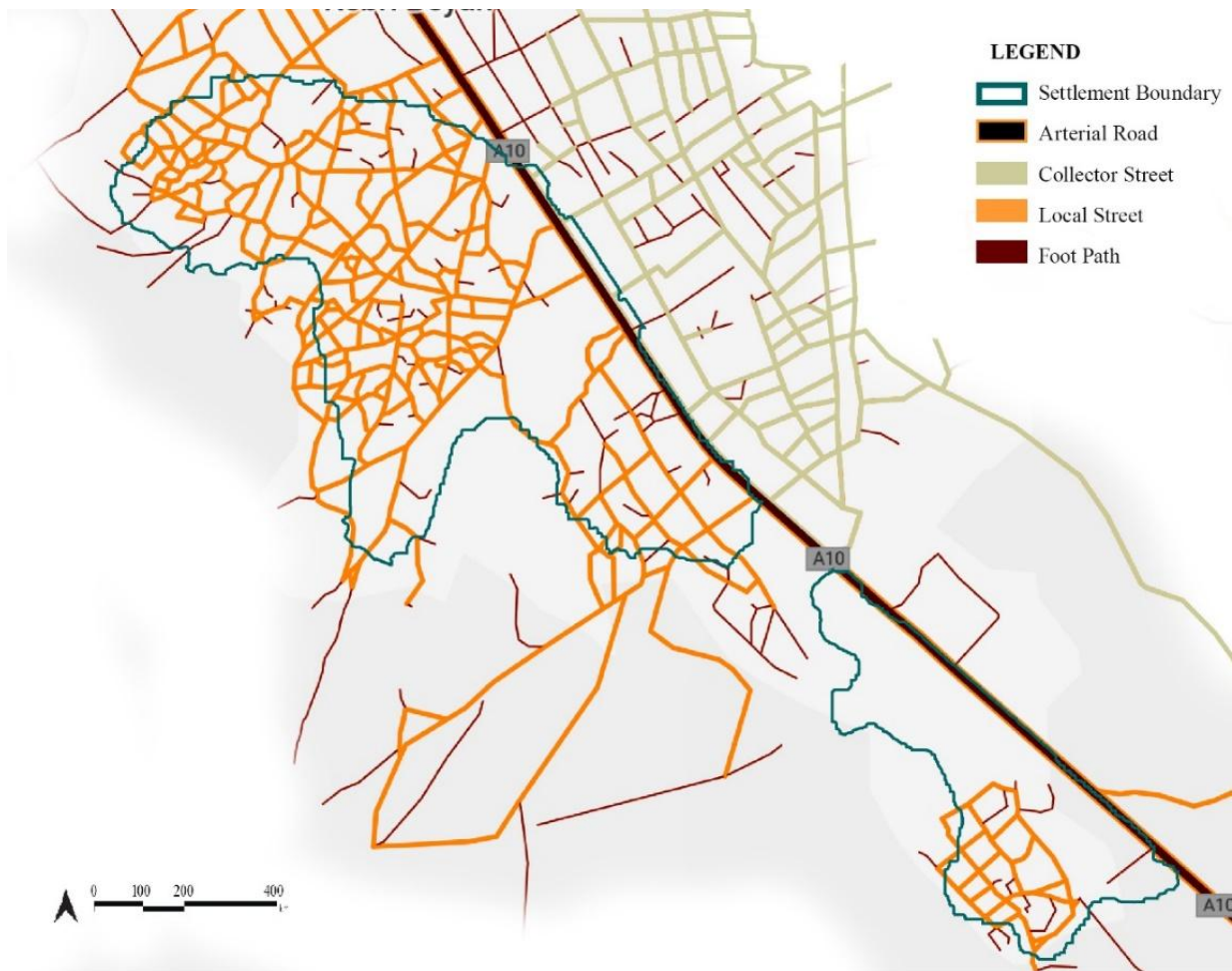


Figure 4.2-8 Street Network Map

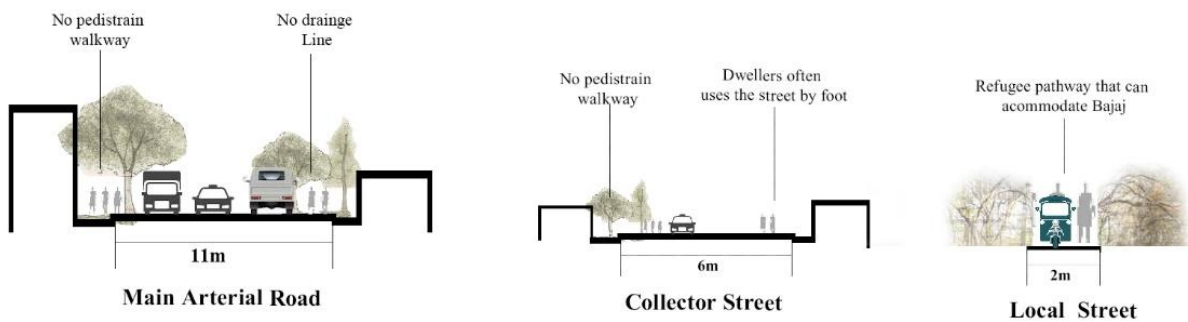


Figure 4.2-9 Street Section

According to the UNHCR (2018) Shelter and Settlements Guidelines, the minimum road width required for internal access is 3.5m, with durable paving and emergency access pathways. However, Kebribeyah Refugee Camp fails to meet all these requirements (A- UNHCR, 2018). See

Figure 4.1-9. As refugee camps are initially created as an emergency response where planning is limited by time, un planned layouts and poor road connectivity in the camp settlement will restrict mobility, access to basic services, and emergency response as camps stay longer beyond the initial plan.

- *Street Linkage*

The major street that is found between the host community and the refugee camp is the only road that connects the camp to major hubs like markets, higher education, and public transport terminals/ bus stations. Since the routes found in the camp are very much clustered and organic in pattern with breaks and dead ends, the continuity and linkage between shelter to shelter and to other services has affected the ease of movement and accessibility on daily activities and during emergency conditions. See Figure 4.1.-10

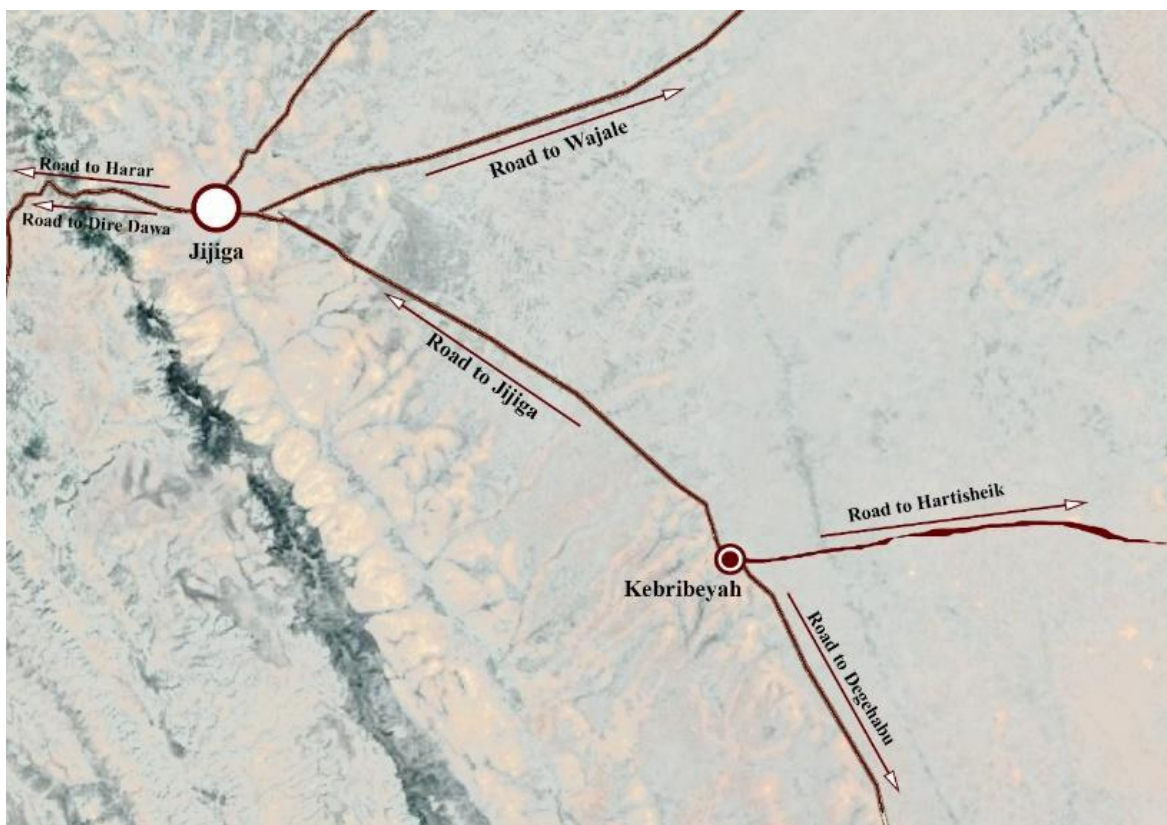


Figure 4.2-10 Linkage map 1

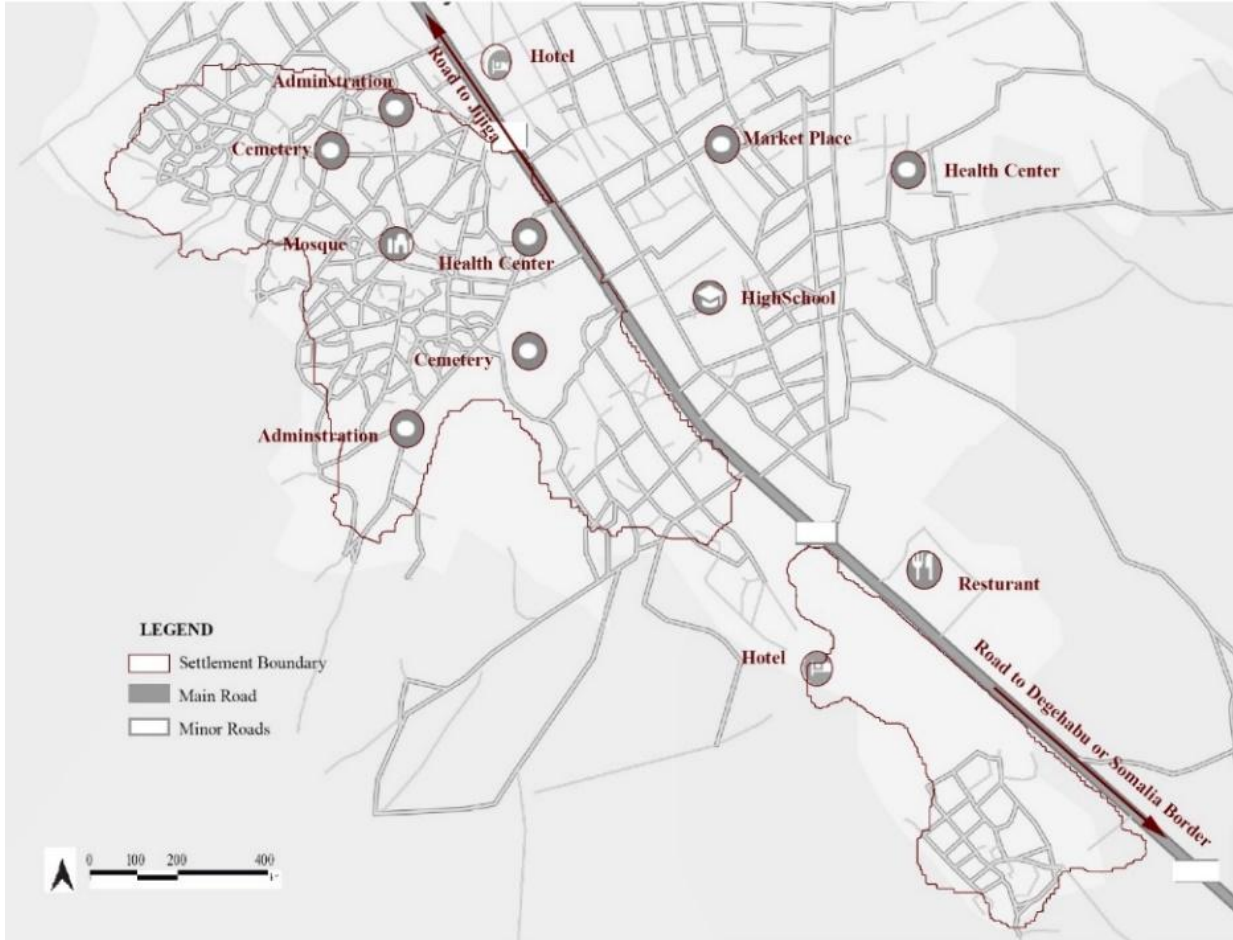


Figure 4.2-11 Linkage Map 2

- *Street Hierarchy*

The camp has two road structures, including the main street. As observed in a field visit, the major routes inside the camp compound are similar in size and use. According to UNHCR Shelter Guidelines, the minimum standard for road width is 3.5m, where the current camp routes are below standard.



Figure 4.2-12 Street Hierarchy Map

- *Street Accessibility*

The routes can be accessed by foot and Bajaje effectively, but vehicular access is difficult considering the topographic effect and road width. Due to various block sizes, the walkability around the camp compound and equal access to basic service is affected. Such challenges have a significant impact when there is an emergency and vehicular access is limited to certain camp areas. See Figure 4.1-14.



Figure 4.2-13 Street Accessibility in Kebribeyah Camp



Figure 4.2-14 Street Accessibility Map

During the field visit and focused group discussion, the refugees mentioned recent fire hazards in the Zone 3 area, and the refugees and the administrative bodies faced challenges in accessing the site on time and controlling the fire. Due to limited vehicular access and a shortage of water, the fire had spread to nearby shelters and caused a significant amount of damage before it was taken under control.

- *Street Traffic flow*

Street traffic flow around the refugee settlement is very dormant and low due to the irregularity of the street /footpath. The main highway that comes from Jijiga is the major road with high traffic flow, with people going back and forth from Jijiga to Kebribeyah Town. See Figure 4.1-15. The town that is found on the Northeast side along the city center has a medium traffic flow with day-to-day host community movement with Bajaja and governmental and non-governmental vehicles.



Figure 4.2-15 Street Density Map

- *Street Material*

As seen in a field visit, the camp has mud and sand pavement material applied to the local routes, which results in an unsuitable path considering the surface quality in terms of dust generation and slipperiness under rainfall. See Figure 4.1-16. Besides, the pathways are prone to runoff and erosion during heavy rains, which is safe and comfortable for the refugees.



Figure 4.2-16 Street Pavement material within the Refugee camp

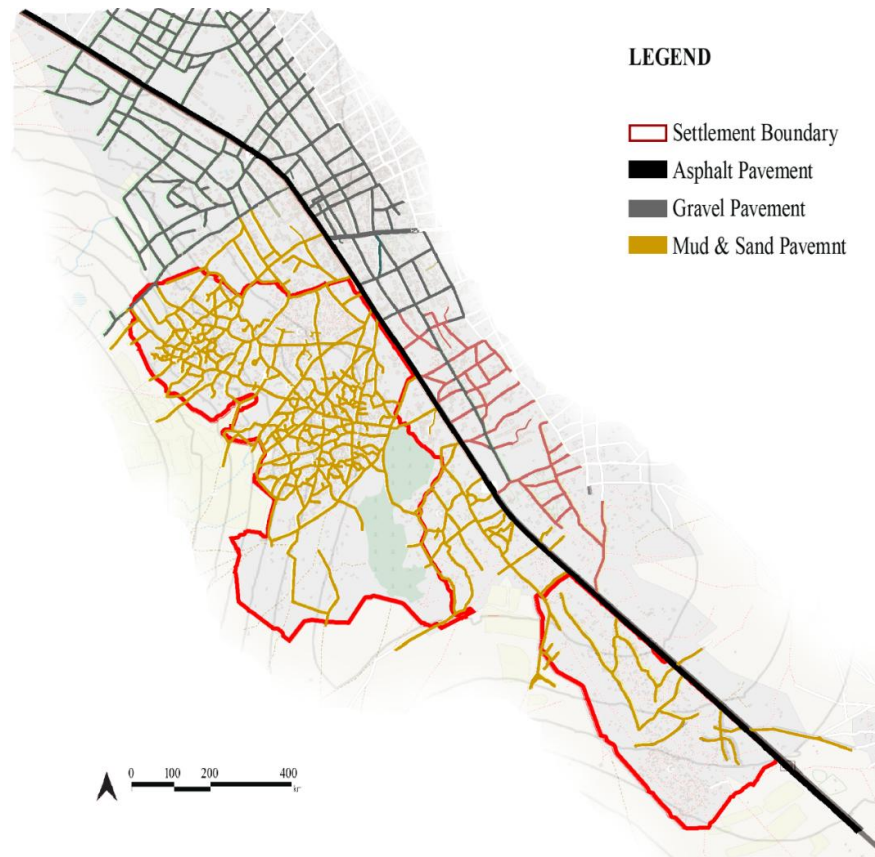


Figure 4.2-17 Settlement Street Material

#### 4.2.1.6 *Settlement Land use Patterns*

Kebribeyah Refugee Camp is located along the main road from Jijiga to the Southern Somali Region. The major commercial and administrative zones are located at the center of the city (Habitat, UN, 2021). The host community and the refugees are bordered mainly within the main road, and some residential areas of host communities live along the North West lea, leaving the refugees to settle in the southwest.

The refugees have settled in an informal layout in terms of shape and size of plot area. Considering the static nature of the camp growth, the town of Kebribeyah has grown, and the host communities has started settling in north western side and southern side blurring the original pattern that used to split the refugees with the host community along the road, having the host communities in the north east and the refugees in south west.

The settlement shows that the first three zones are advantageous to access service and administration relative to zone 4. Major Service areas like preschools, Islamic schools, health centers, cemeteries, and administrative functions have been fairly incorporated into the refugee settlement. Even if there is no market area inside the refugee settlement, there are market amenities like shops and small kiosks along the main road and pathway junction where the first three zones can access the town market within a workable distance of 20 minutes.

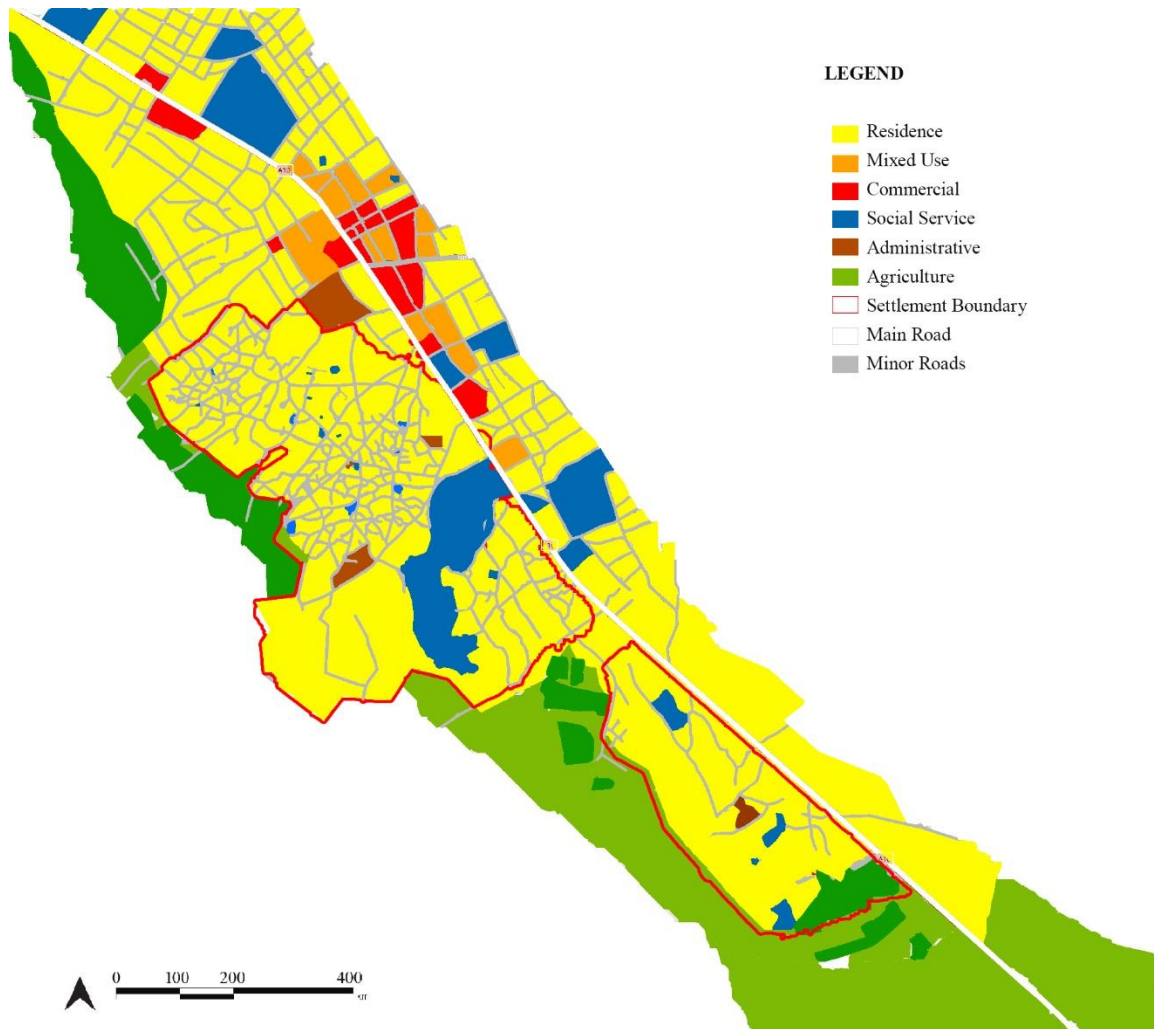


Figure 4.2-18 Settlement Land use Map

As seen in field visits and information from the key informants, the land use planning has major challenges regarding waste disposal and drainage systems since the informal residential settlement of both host communities and refugees in the southwest has created indistinct waste disposal systems and drainage patterns which affects the safety and wellbeing of the refugees.

## 4.2.2 Shelter in Kebribeyah Camp

### 4.2.2.1 Evolution of Shelter

According to refugees and key informant discussion, Kebribeyah Rcamp initially provided emergency shelter to Somali refugees during the emergency phase. Shelter during that time was simple, covering tents and temporary structures constructed from locally available material from

the area, considering only immediate protection from matter. During 1991, the displacement was at its peak, and Kebribeyah remained in operation as a refugee camp. The temporary shelters evolved from temporary tents to more durable and permanent structures like mud-brick houses. Then, when a new influx got displaced in 2006 due to draught, the camp, which was already facing significant overcrowding, encountered major challenges in all infrastructural elements, including shelter.

Supporting this data during the survey from the total respondents, 175 Refugees have transitioned from shelter to shelter during the camp transformation. At arrival, 33.4% were living in communal plastic tents with their relatives and neighbors, and the rest, 8.4 % and 6.5% were living in private plastic tents and more durable shelters. The duration they stayed in the shelter provided at arrival was between 1 to 5 years for 31.5% of the respondents. Then, when the camp was transferred to a permanent refugee camp, around 26.1% had the chance to modify their shelter into a private, more durable shelter. Even if the permanent and durable solution were shown in the second or transitional shelter, almost 26.7% of the respondents have lived for more than 10 years.

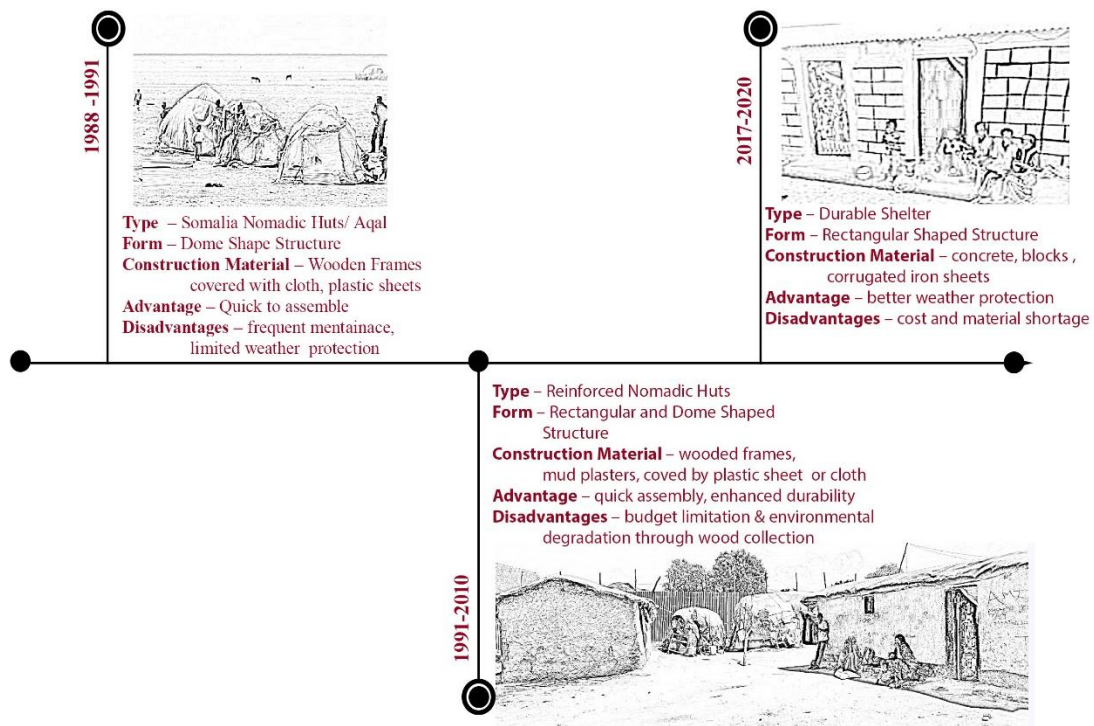


Figure 4.2-19 Shelter Evolution Timeline

The replacement of emergency plastic tents with mud and wood semi-permanent houses in Kebribeyah refugee shelters demonstrates an implicit evolution from short-term to long-term stay, thus shattering the original planning assumptions based on short-term displacement. The observation aligns with the Adequate Housing Theory, which posits that housing for all individuals, including refugees, should transition from immediate relief to long-term adequacy and security (UNHCR, 2007) (UN Habitat, 2014).

As the camp coordinator mentioned during the interview currently, the camp is in the process of strategically implementation the "Kebribeyah Inclusion Roadmap (2023-2027) Building Resilience Together," where one of the key components is physical integration by developing a harmonized master plan for improved shelter for refugees (UNHCR, 2023). This was a memorandum of understanding signed between the Ethiopian Refugee and Returnees Service, UNHCR, and the Somali Regional authorities to include the camp as an integral part of Kebribeyah town development.

According to the quantitative survey of 356 refugees from all administrative zones, responses about the shelter journey, layout, density, and space will presented as follows.

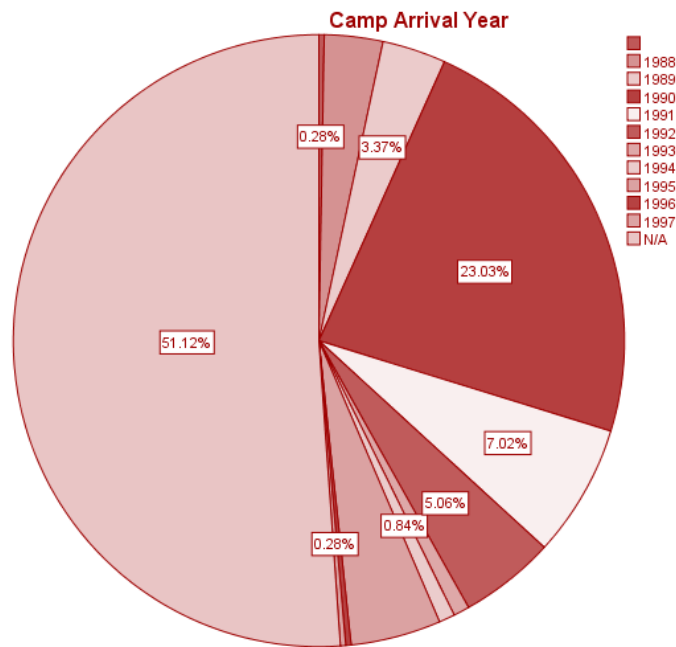


Figure 4.2-20 Camp Arrival Year

The data shows that the refugees started to arrive in the camp since 1988. Around 23.03% of the respondents arrived in 1990. Surprisingly, about 51.12% of the respondents were born either in the camp or didn't remember the time of arrival since they were brought here at a young age.

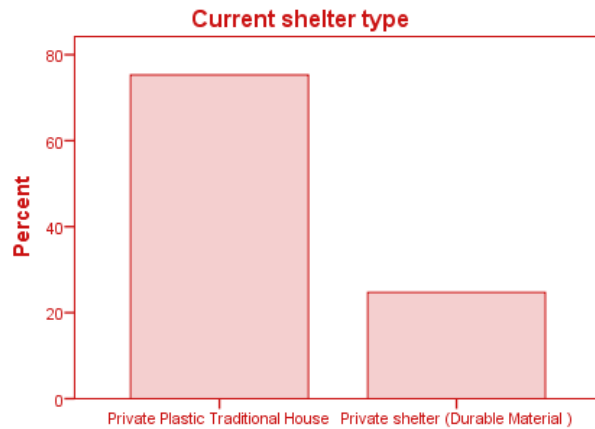


Figure 4.2-21 Refugee Shelter Type

The current shelter condition was further discussed and showed that 75.3% of the respondents were living in private plastic shelters, which are similar to traditional Somali houses, and about 24.75 were living in private shelters with more durable materials like mud.



Figure 4.2-22 Typical Refugee Shelter in Kebribeyah

The refugees lived in the shelter for more than 10 years, with no significant modification and maintenance made throughout the years.

#### 4.2.2.2 Block, Plot and Shelter Unit Documentation

During field visits and observation, the shelter space documentation was conducted to understand the shelter layout and space usage of the dwellers. For documentation and understanding of the actual shelter, a variety of free-hand sketches of the space layout were done during the time of observation. For the purpose of in-depth discussion, 9 different shelter typologies were selected as

case studies for this research. The case studies were selected according to their unique character and as their collective representation of the majority of housing typologies found in the camp.

The site features a diverse range of lot sizes and shapes, reflecting an organic development pattern over time. Blocks were formed gradually rather than through formal planning, resulting in irregularly shaped parcels and non-uniform street alignments. Some of the blocks are large in size, which leads to inaccessible plots and longer distances for basic movement and access. The blocks vary in both density and shape. Their irregular forms were developed without adequate consideration for accessibility, not just size. This lack of planning has contributed to irregular plot configurations and a fragmented settlement pattern. For analysis purposes, four different blocks are selected to further study their spatial arrangement and character as follows.

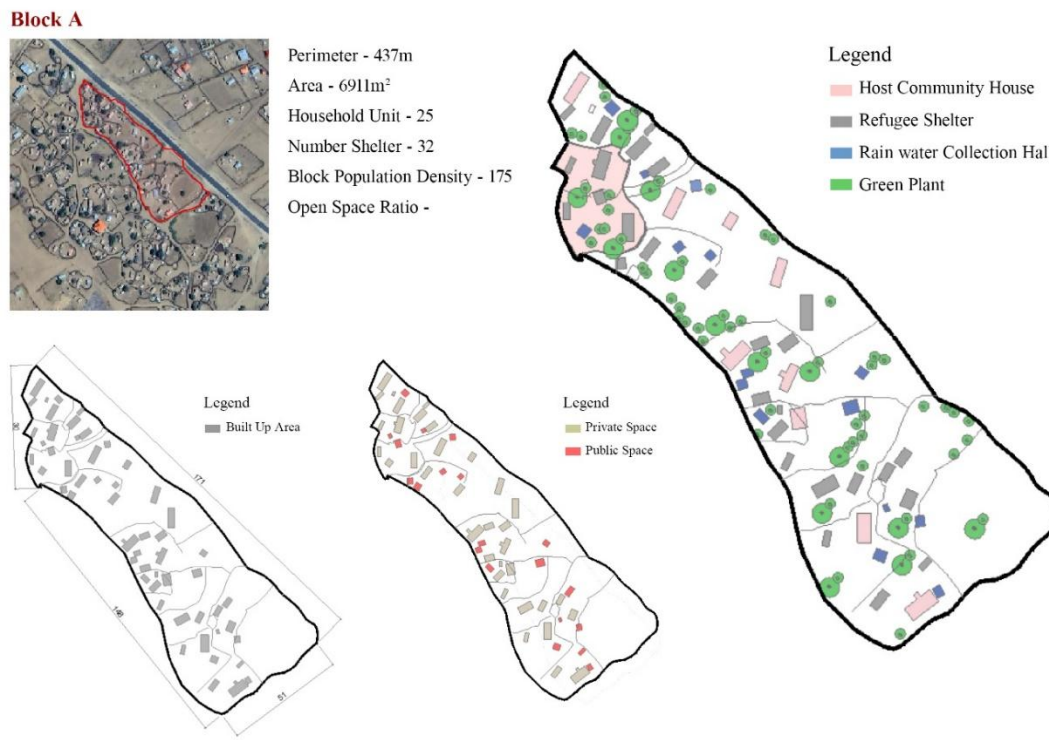
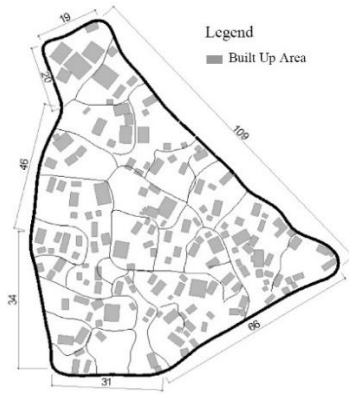
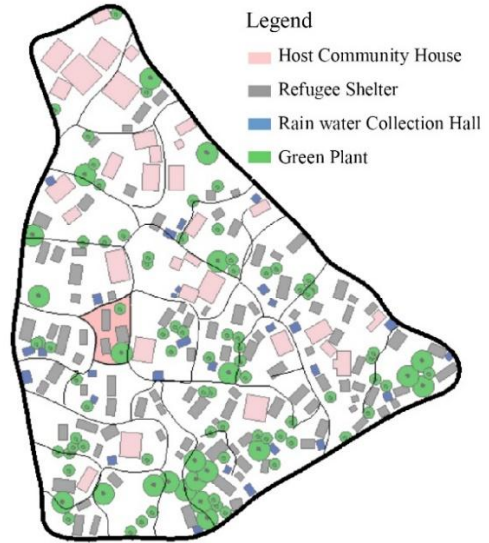


Figure 4.2-23 Block Type A

**Block B**



Perimeter - 312m  
 Area - 6029m<sup>2</sup>  
 Household Unit - 47  
 Number Shelter - 82  
 Block Population Density - 329  
 Open Space Ratio -



Legend  
 Private Space  
 Public Space

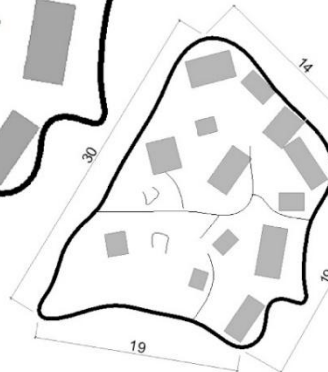
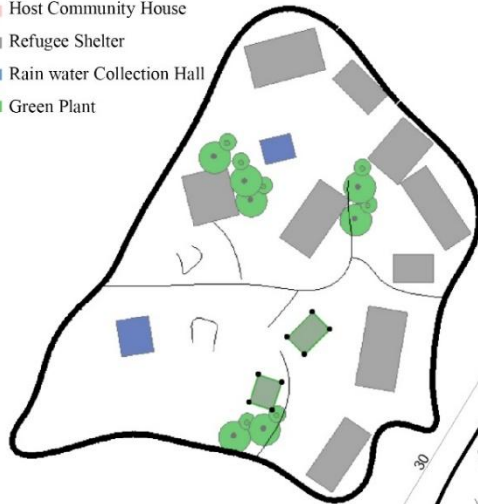
Figure 4.2-24 Block Type B

**Block C**



Perimeter - 312m  
 Area - 90m<sup>2</sup>  
 Household Unit - 5  
 Number Shelter - 8  
 Block Population Density - 25  
 Open Space Ratio -

Legend  
 Host Community House  
 Refugee Shelter  
 Rain water Collection Hall  
 Green Plant



Legend  
 Built Up Area

Legend  
 Private Space  
 Public Space

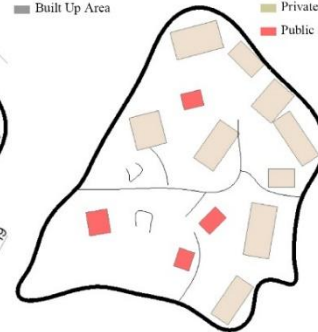


Figure 4.2-25 Block Type C

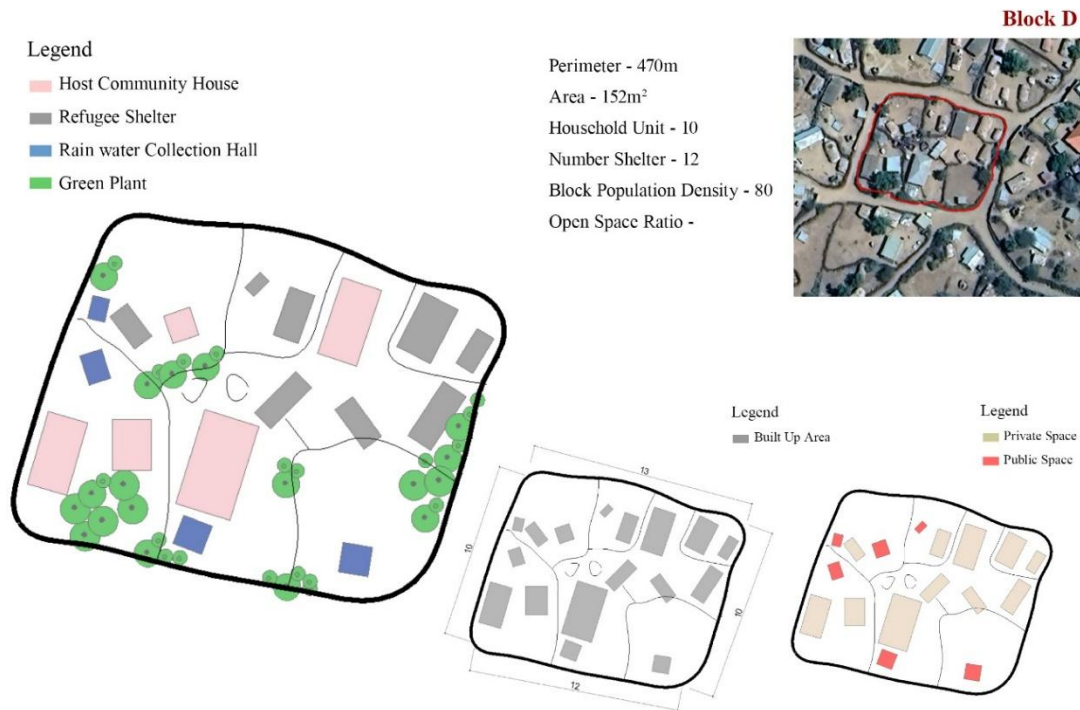


Figure 4.2-26 Block Type D

The plots are irregular in both shape and size, and the settlements within them do not follow any specific layout or respond to the plot boundaries. These open areas are multifunctional—used as playgrounds for children, living spaces for domestic animals, and workspaces where construction materials are stored and prepared during the house-building process. Additionally, the houses often lack proper openings, resulting in dark interiors throughout the day. As a result, most family and domestic activities are carried out in the compound rather than inside the house.

The plots are enclosed with short bush plants that serve as informal property boundaries. The ground consists of a natural mixture of sand and clay, with no significant alterations made to the original landscape.

#### 4.2.2.3 Shelter Unit Level Analysis

To gain in-depth case study unit level analysis the following shelters was selected from the administrative zones and sections that have been classified the camp for administrative zone. Selection criteria depended on the administrative zoning to carefully employed and ensure that

sampling captures the diversity of spatial and physical condition of the shelters. Administrative zones and sections are selected due to the following criteria

- 5 Well defined and widely used by different stakeholder.
- 6 The zoning offered the researcher a natural stratification method
- 7 The zones are often linked with shelter and household data.
- 8 During field visit governmental and non-governmental officials suggest zones to locate shelter and plan activities.

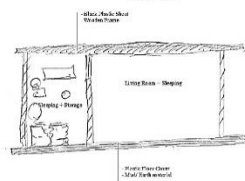
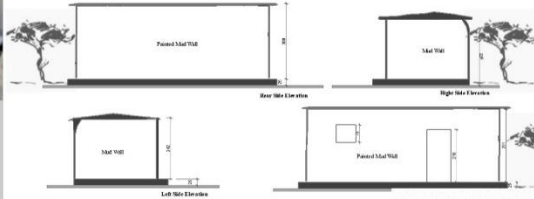
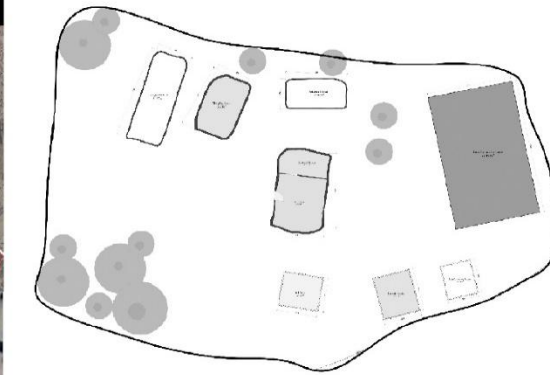
Table 4.2-1 Shelter Selection Matrices

Shelter ID	Camp Location	Location	No. of Rooms	Perimeter in m	Area in m <sup>2</sup>	Material	Modification	Extension space and area I m <sup>2</sup>	Household Size	Minimum Standard per person in m <sup>2</sup>
SH- 01	Z1 S1	Proximal to admin & Food Distribution	2	25	39	Mud & Plastic sheet	None	20 sleeping	6	21
SH- 02	Z2 S1	Center to Service	1	18	20	Wood & Plastic Sheet Cover	None	None	4	14
SH- 03	Z2 S2	Top edge of the boundary	2	27	38	Wood& mud with plastic sheet cover	Wall& roof	None	5	17.5
SH- 04	Z3 S1	Central	2	24	31	Wood & Iron sheet with plastic sheet cover	Wall & Roof	None	7	24.5
SH- 05	Z3 S2	Edge of the boundary	1	22	25	Plastic Sheet & garment cover	None	None	7	24.5
SH- 06	Z3 S3	Edge of the boundary	1	22	28	Wood& mud with plastic sheet cover	None	10 Sleeping	6	21
SH- 07	Z3 S4	Central to service	1	25	38	Wood& mud with plastic sheet cover	None	None	6	21
SH- 08	Z4 S1	Peripheral	3	24	32	Mud + corrugated sheet	Roof, Wall and Partition	10 Sleeping	4	14
SH- 09	Z4 S2	Peripheral	1	24	32	Plastic sheet	None	None	5	17.5

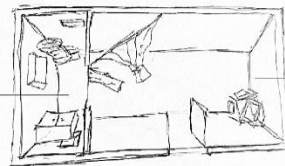
**SH 01 Zone 1 Section 1**



**Location** - Proximal to administration and food distribution  
**No. of Rooms** - 2  
**Perimeter** - 25m  
**Area** - 39m<sup>2</sup>  
**Material** - Mud and Plastic Sheet  
**Modification** - None  
**Extension** - 20m<sup>2</sup> Sleeping  
**Household Size** - 6



Space is filled with storage material and sleeping mattresses



Living & Sleeping space with only TV and Plastic floor cover

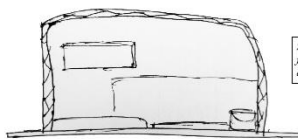
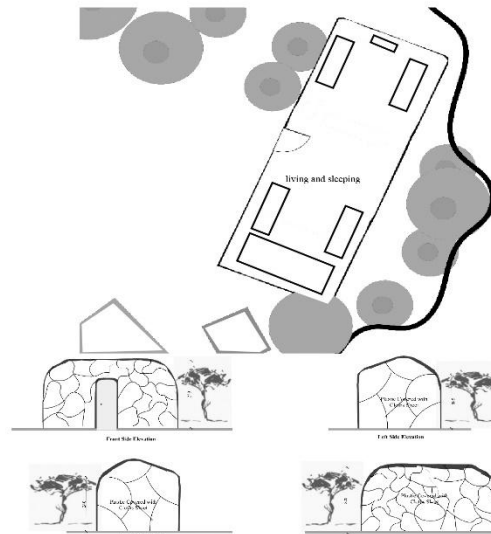


Figure 4.2-27 Case Study Shelter 01

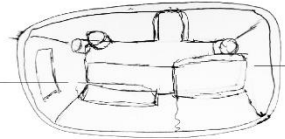
**SH 02 Zone 2 Section 1**



**Location** - Center to service  
**No. of Rooms** - 1  
**Perimeter** - 18m  
**Area** - 20m<sup>2</sup>  
**Material** - Wood & plastic sheet cover  
**Modification** - None  
**Extension** - None  
**Household Size** - 4



Sleeping mattresses folded on floor during day time



Decorative Curtains hanging from top



Figure 4.2-28 Case Study Shelter 02

**SH 03 Zone 2 Section 2**



**Location** - Top Edge of the boundary  
**No. of Rooms** - 2  
**Perimeter** - 27m  
**Area** - 38m<sup>2</sup>  
**Material** - Wood & Mud with plastic sheet cover  
**Modification** - Wall & Roof  
**Extension** - None  
**Household Size** - 5

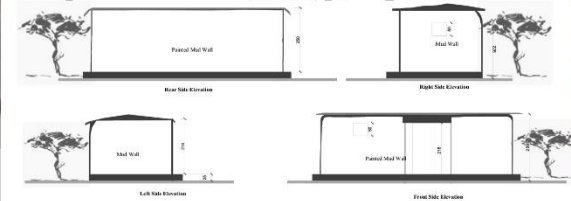
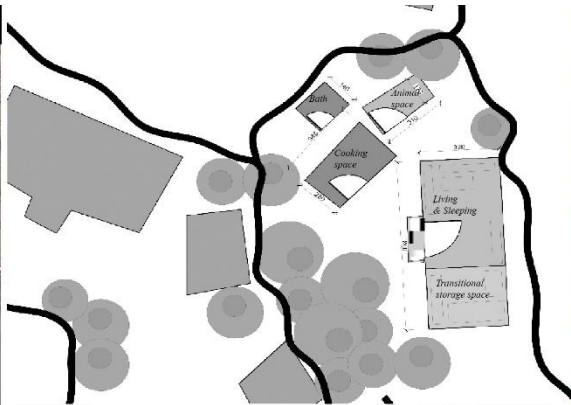


Figure 4.2-29 Case Study Shelter 03

**SH 04 Zone 3 Section 1**



**Location** - Centrally located  
**No. of Rooms** - 2  
**Perimeter** - 24m  
**Area** - 31m<sup>2</sup>  
**Material** - Wood & Iron sheet with plastic sheet cover  
**Modification** - Wall & Roof  
**Extension** - None  
**Household Size** - 7

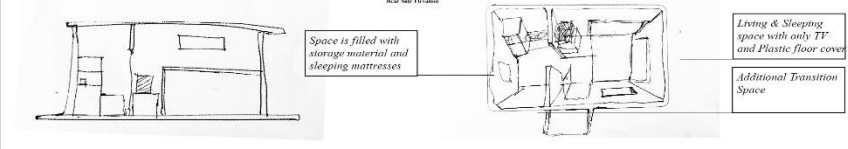
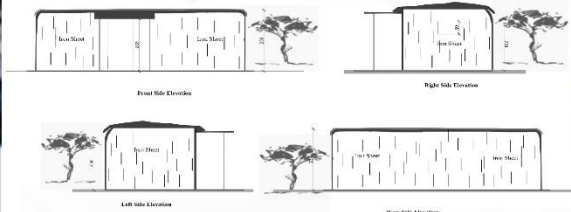
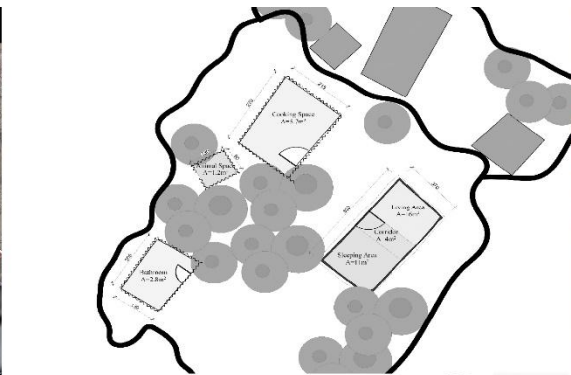


Figure 4.2-30 Case Study Shelter 04



Figure 4.2-31 Case Study Shelter 05

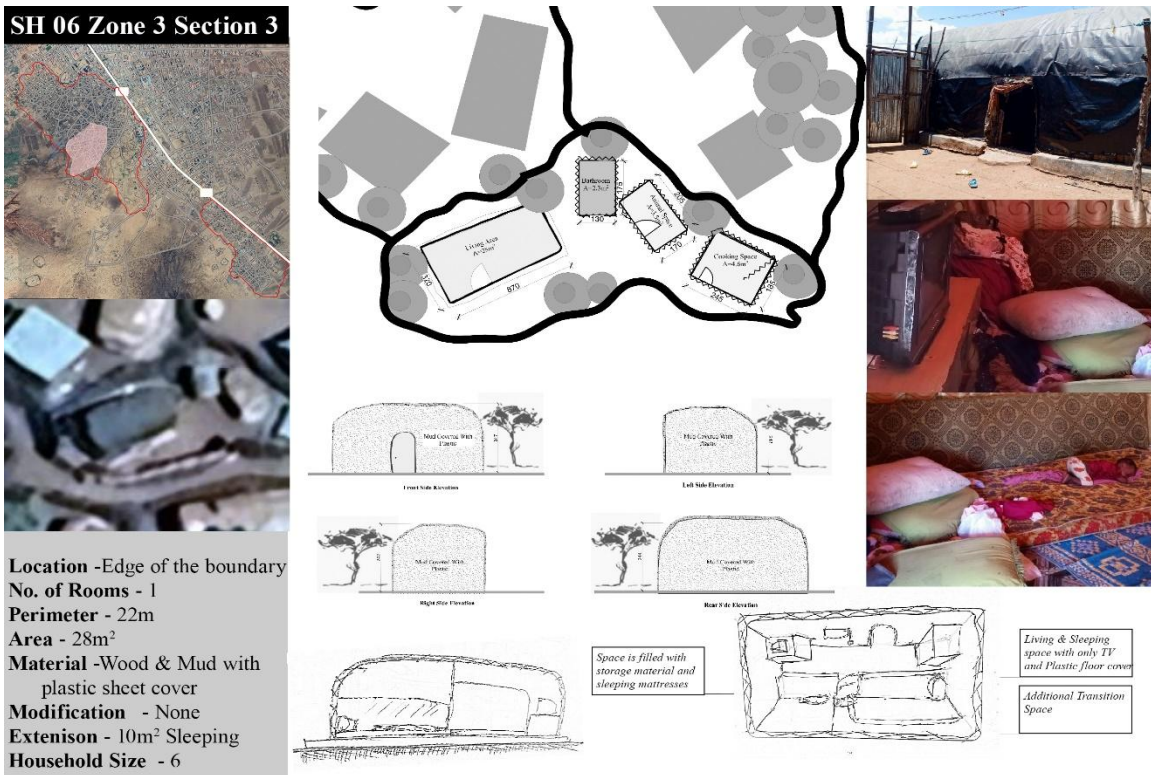


Figure 4.2-32 Case Study Shelter 06



Figure 4.2-33 Case Study Shelter 07



Figure 4.2-34 Case Study Shelter 08

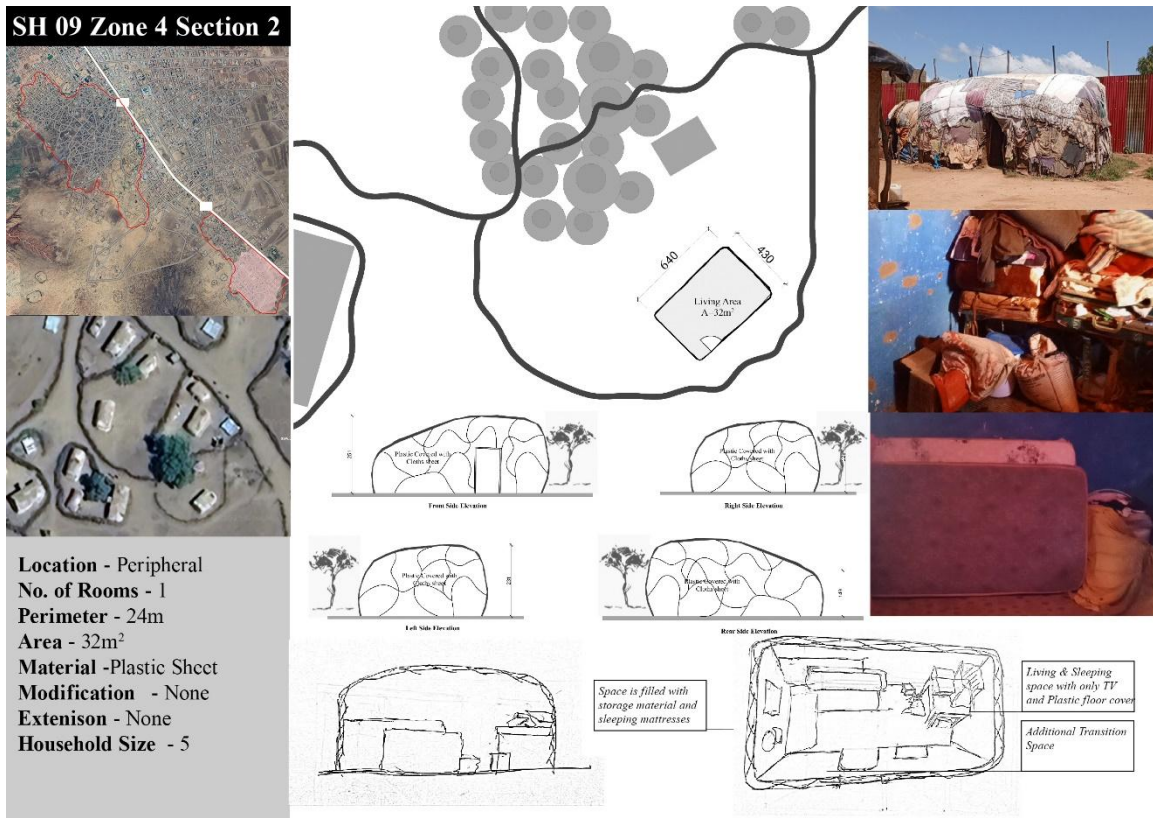


Figure 4.2-35 Case Study Shelter 09

- *Geometric and Shape Analysis*

As observed in field visit and in space documentation the typical shape the shelter has can be categorized as rectangular and elliptical. While rectangular forms dominate particularly in shelters that have transitioned from the traditional Aqal to a more durable material like Mud. Extension shelters and additional self-built structures show geometric regularity. Shelter dimensions are inconsistent but often range from 4\*6m to 3\*8 m. As a result Kebribeyah shelter layout lack a standard core unit.

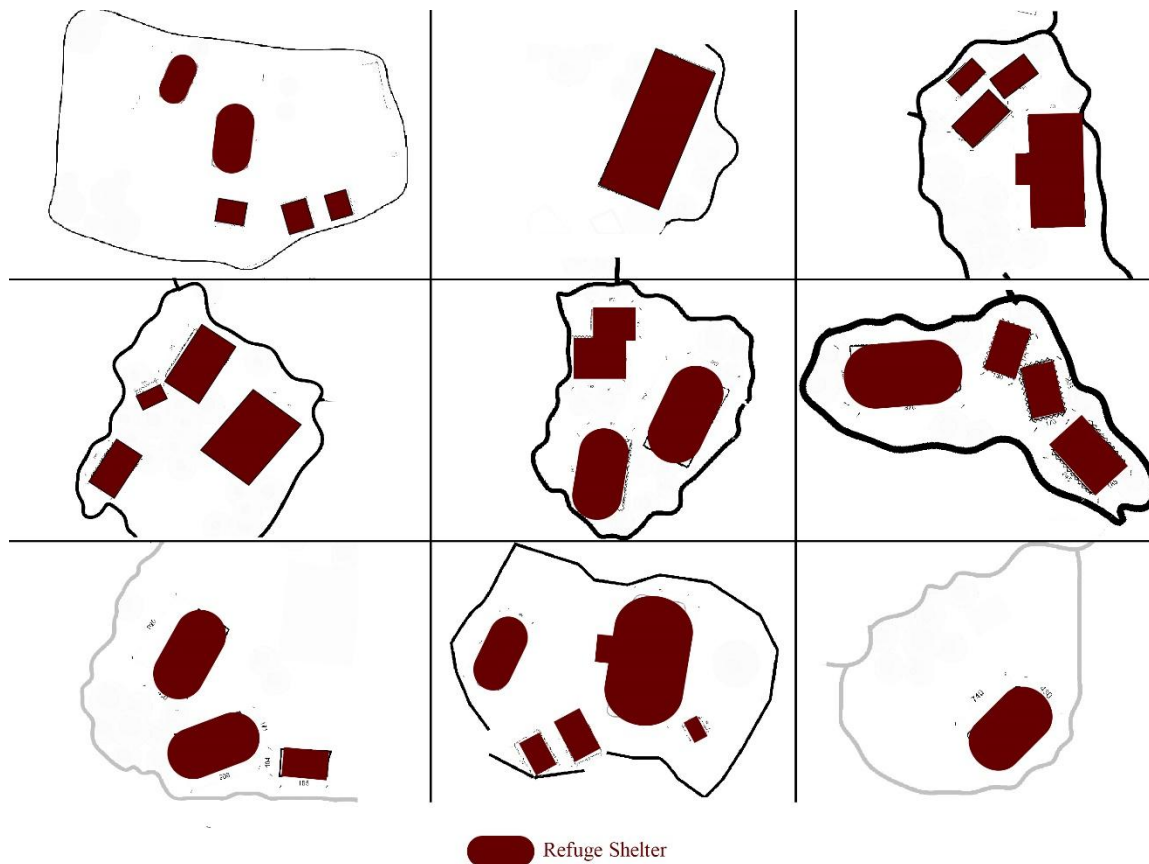


Figure 4.2-36 Shape and Position of Refugee Shelter

- *Outdoor and Indoor Space Relationship*

Outdoor space plays a significant role in the daily life of Kebribeyah Refugee camp. Majority of the domestic activities Such as cooking, and laundry are done in the outdoor area with additional purpose as playground, gathering place and making construction material ( The plastic sheet sewed together with garment fabric as roof coverage) . Circulation between indoor and outdoor areas is smooth but often delayed by poor path conditions, especially during the rainy season. Outdoor area I found surrounding the shelter area defined by fence made of wooden poles and woven sticks. Thus theses reflects the importance of outdoor living area .for social and cultural interaction.

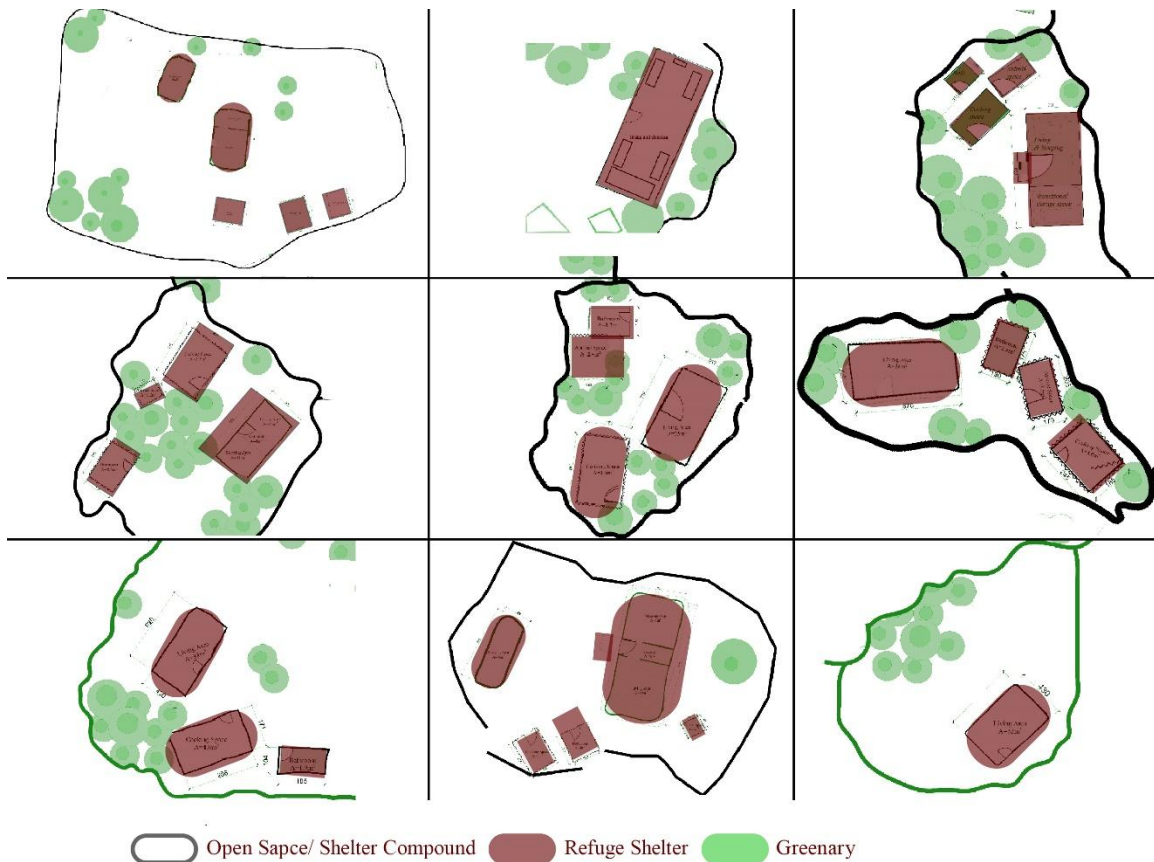


Figure 4.2-37 Indoor and Outdoor Space Relationships

#### Functional Zoning and Use of Space

Shelters typically act multifunctional when it comes to space use analysis. A single living room can serve as sleeping, sitting, eating, and storage area. Since there is a shortage of space accommodation for all service shelters, lack of service space integration is common. Cooking areas are often found detached from the main shelter, reflecting a gap in both spatial and functional use. In the meantime, the detachment of cooking areas from the main shelter is a better approach to minimize accidents that might occur due to inappropriate material use in the area like easily flammable wood sticks or plastic covers. From NGOs, support toilets and bath areas are found to be constructed by relatively better materials such as corrugated sheets. However, majority of the toilets lack proper roofing, privacy, and waste management systems.

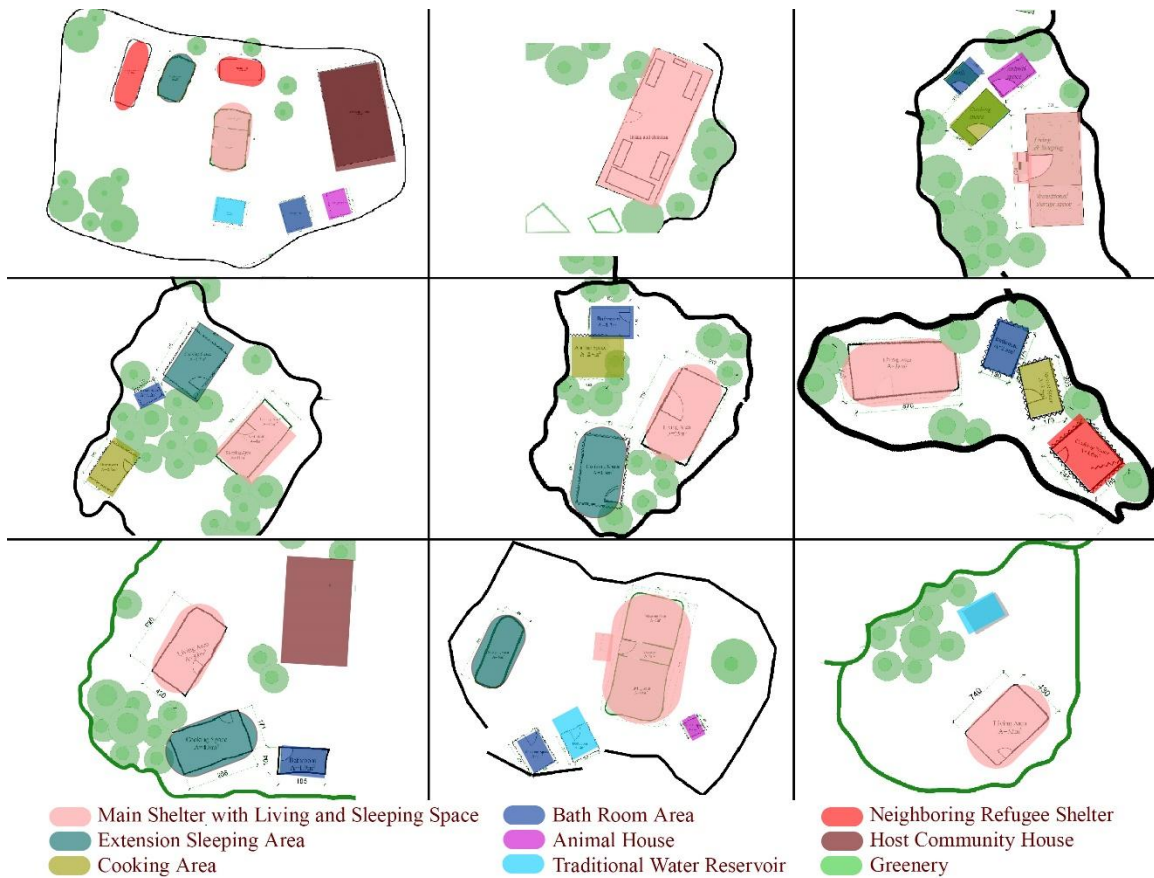


Figure 4.2-38 Functional Analysis

According to the quantitative survey, the refugees were asked about the general shelter space accommodation in relation to their daily lives. Following that, 49.7% of the refugee shelter space has only a single room, excluding a bathroom and cooking area. Inadequate shelter in terms of privacy, gender-sensitive facilities, and religious observance (prayer or cooking area) violates Adequate Housing Theory, specifically cultural adequacy, under Article 11(1) of the International Covenant on Economic, Social and Cultural Rights (ICESCR) ( United Nations, 1967). It also overlooks Islamic spatial concepts central to the cultural identity of Somali refugees.

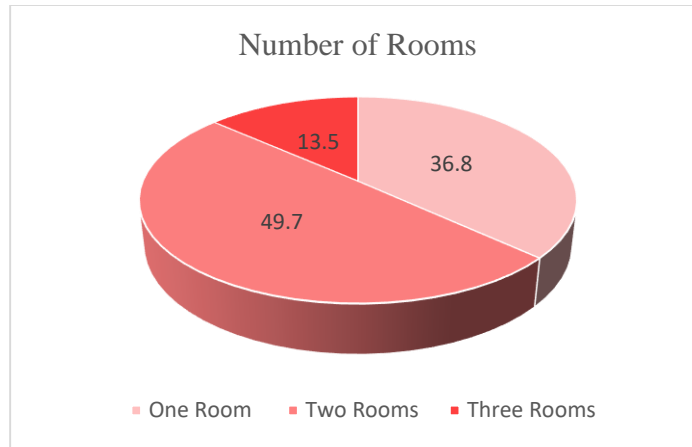


Figure 4.2-39 Number of Rooms per Shelter

These findings show that there is a limitation in the adequacy and functionality of shelter within the camp. Shelters having only single rooms have direct implications on the quality of refugee life in relation to privacy, overcrowding, and cultural adequacy.



Figure 4.2-40 Sample interior Space of Refugee Shelters

During field visits, it was observed that refugee has a trend of modifying their initial shelter to another one or having an extension separate children or additional household member sleeping zones. This gave them a chance to accommodate more household members and have private zoning. This method is a coping mechanism for their spatial constraints, which shows the community-driven approach to improve privacy and accommodation size. Although the adaption means being

good, such informal approaches tend to face challenges in shortage of resources and space availability.

Considering the Living, sleeping, and cooking areas, 87.6% responded that the space is not sufficient to accommodate living and sleeping space. This shows that there is a use of one space for multiple purposes, which leads to overcrowding.

On the other hand, 88.8 % responded that the cooking area is found in a separate area from the shelter unit, which makes it easy to do household work.

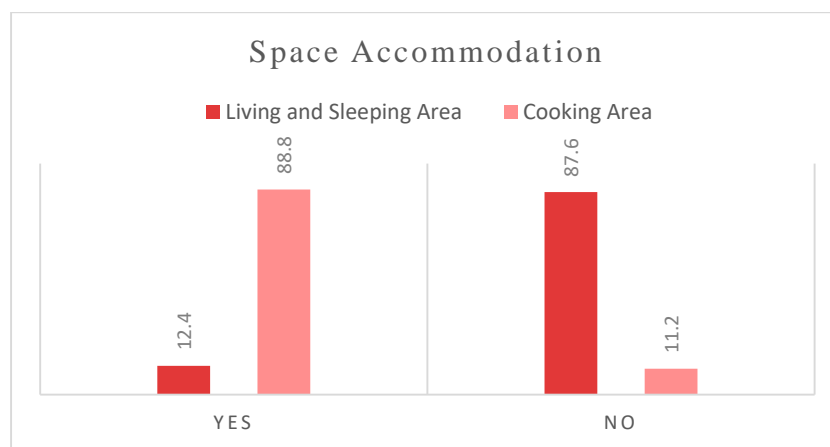


Figure 4.2-41 Shelter Space accommodation for Living, sleeping and cooking



Figure 4.2-42 Shelter Cooking Space

Even though the cooking area has segregated area from the main shelter, some of the construction materials used for a cooking area, such as wood and plastic, have hazardous effects regarding the space use. During the in-depth interview and the focused group discussion, refugees mentioned a fire incident that occurred in the past two years due to the accident that happened in the cooking area and how easily the space was damaged. According to the effects on shelter and camp compound, this kind of material pose should not be neglected and future consideration in the application of fire resistance cooking structure usage.

In terms of location, 97.6% responded the bathroom is located inside the shelter compound at a nearby distance, and similarly, 87.6% responded the cooking area was found near the shelter compound but outside the shelter unit. As seen in a field visit, the bathroom is a pit latrine, which is public for refugees in a single plot area. Also most of the bathrooms do not have a roofing system, which is prone to weather and privacy issues. Supporting that 93.8% of the refugees have responded that they are using public bathrooms. The fact that the majority of the refugees use shared bathrooms indicates limited access to privacy, especially for women, Children , and people with special needs.



Figure 4.2-43 Shelter Bath Room Types

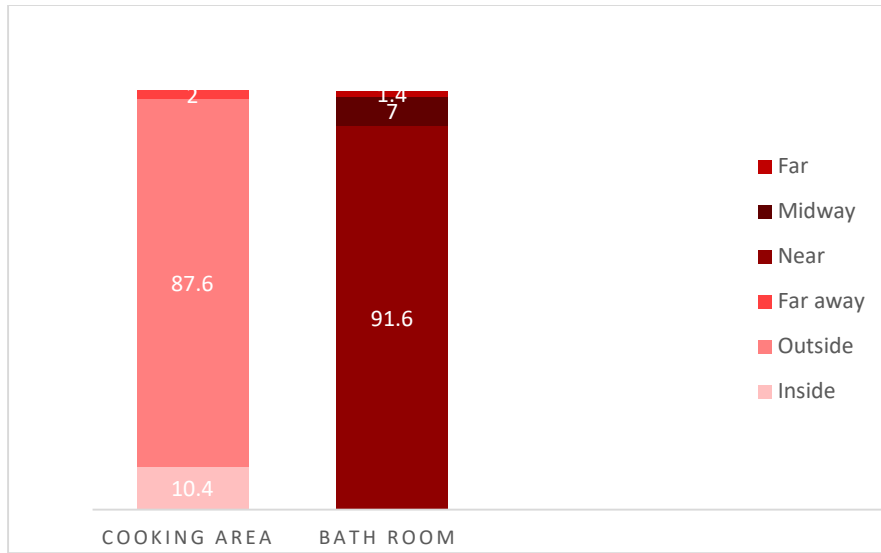


Figure 4.2-44 Shelter Cooking and Bath Room Location

In general, 51.1% and 30.6% of the refugees responded with their satisfaction towards the space's functional and size to be fair and poor, respectively. This shows that the refugees are facing basic challenges regarding shelter function and size, which leads to overcrowding and lack of privacy.

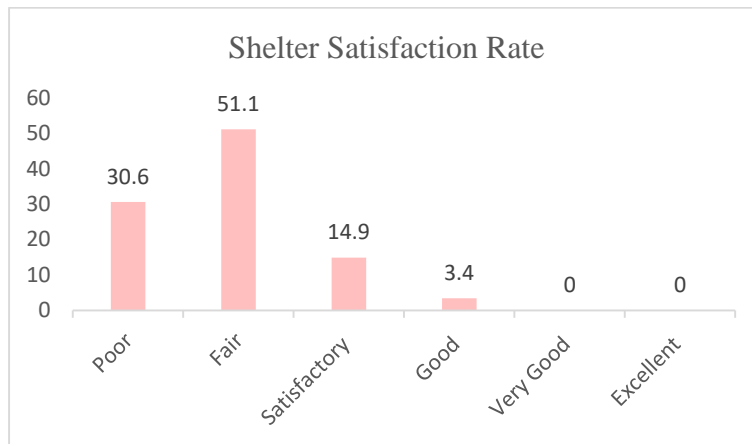


Figure 4.2-45 Shelter General Satisfaction Rate

This result aligns with the Actual–Aspiration Gap Theory of residential satisfaction, which posits that dissatisfaction arises when there is a discrepancy between the actual living conditions and the residents’ aspirations or expectations. In this case, the gap between the refugees' expected shelter conditions (privacy, adequate space, and functional layout) and their actual housing experience is

substantial. The limited space per person, combined with the lack of dedicated functional areas (e.g., sleeping, cooking, or storage spaces), has directly contributed to feelings of overcrowding and compromised daily living standards.

This dissatisfaction not only reflects a failure to meet international shelter adequacy standards (e.g., UNHCR's 3.5–4.5 m<sup>2</sup> per person), but also underscores how refugees perceive their living conditions as inadequate when compared to their basic aspirations for dignity, safety, and comfort.



Figure 4.2-46 Shelter Exterior Look

The overall shelter indicates that the camp falls short in shelter provision with major challenges in overcrowding, lack of privacy, inadequate zoning, and unsafe structure. This finding highlights the need for shelter improvement in layout design, construction material, and zoning adjustment.

### 4.3 Shelter Adequacy in Kebribeyah Camp

#### 4.3.1 Security of Tenure

The perception of tenure rights of the Kebribeyah Refugee camp basically aligns with three different bodies: the host community, the Jijiga regional or Fafan zonal government, and the NGOs. As the refugees responded, 44.2% think the tenure right of their shelter is by the NGOs. Whilst the rest think that way, there are refugees who do understand the Somali Regional Government or host community.

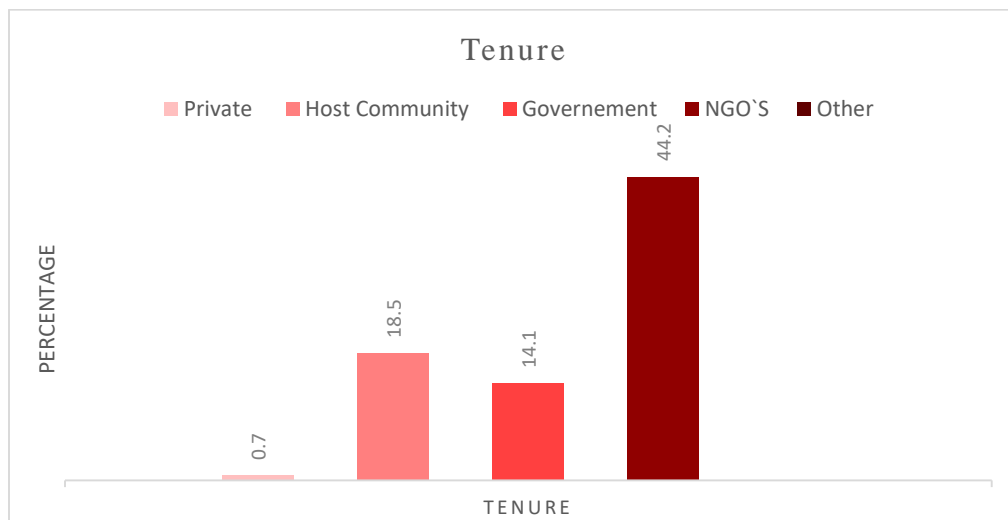


Figure 4.3-1 Refugee Perception towards Tenure

Regarding fear of eviction, displacement, or harassment, the refugees feel safe and stable, but some refugees in the focused group discussion mentioned that the host communities do treat them with land ownership and tenure rights, which leads to fear of living in the camp.

During in-depth interview, one respondent said that

*“The land owner (host community) has been treating her and her family members on a daily bases that she feels unsafe to the environment after living in the camp for more than 10year.”*

The chart below presents the safety and security of the shelter unit and camp compound regarding forced eviction, Harassment, and Other threats. The refugees responded that the camp is satisfactorily safe and secured with 21.1% responded satisfactory regarding forced eviction and 28.9% responded satisfactory regarding harassment.



Figure 4.3-2 Shelter Safety and Security

To analyze more, the spatial tenure map below shows how refugee shelter units and host community houses are linked together, and the fear of forced eviction or internal displacement can be clearly seen in the map.



Figure 4.3-3 Example of Refugee shelter and Host community house in single plot

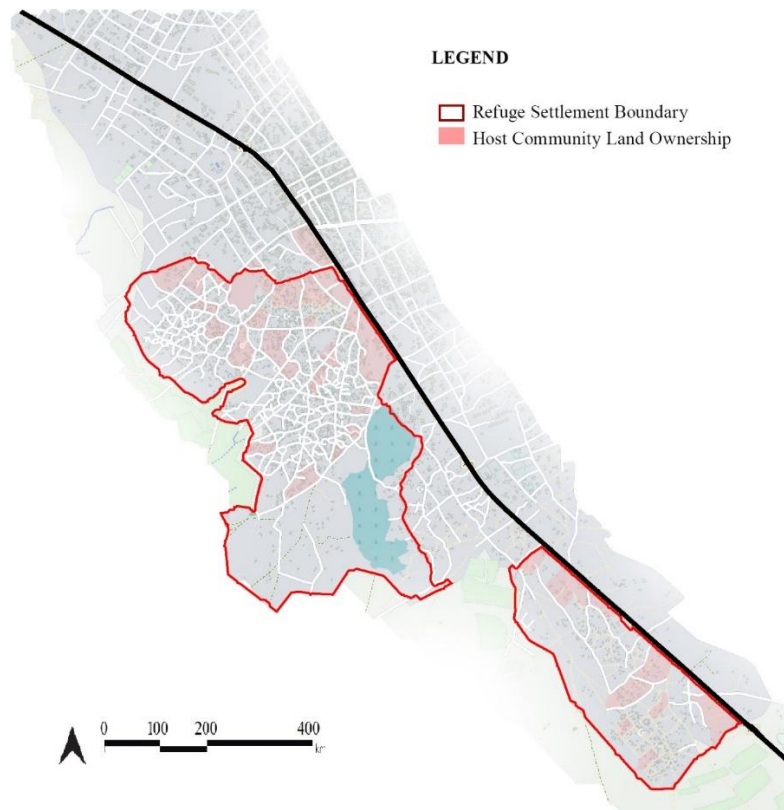


Figure 4.3-4 Integration of Refugee Settlement and Host community Land Tenure

### 4.3.2 Availability of Basic Service

The second adequacy indicator point is the availability of basic services around shelter units and camp compounds. During the quantitative survey, availability of safe drinking water is hardly available according to the 36.4% respondents. The refugees have nearby rainwater detention pond to harvest and store rainwater when it is available.



Figure 4.3-5 Rain Water collection and Storage

Thus, to find safe drinking water, they have to travel to communal water stations or buy them from individuals who generate income by collecting water from faraway areas and selling it to their nearby community. Moreover, there is no available sanitation, energy for cooking and light, food storage, refuse disposal, and green area within the shelter units. During focused group discussions and qualitative interviews, refugees mentioned that they do use nearby wood steaks or fence material as the primary sources of energy for cooking. Energy for Light around the camp is basically used by portable flashlights and through street lights found in the compound.

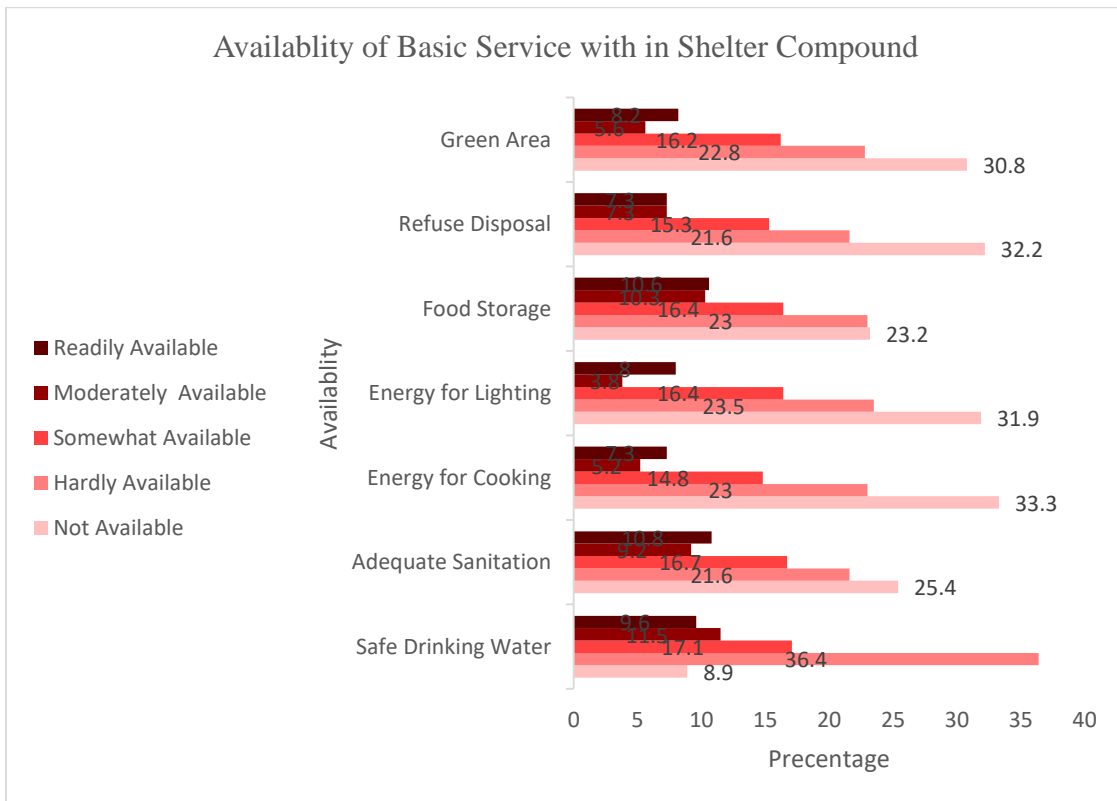


Figure 4.3-6 Basic Service with in Shelter Compound

70% of respondents reported lacking direct access to essential infrastructure, including electricity for lighting and cooking, sanitation, safe drinking water, and waste disposal facilities. This significantly deteriorates their living conditions and overall experience.

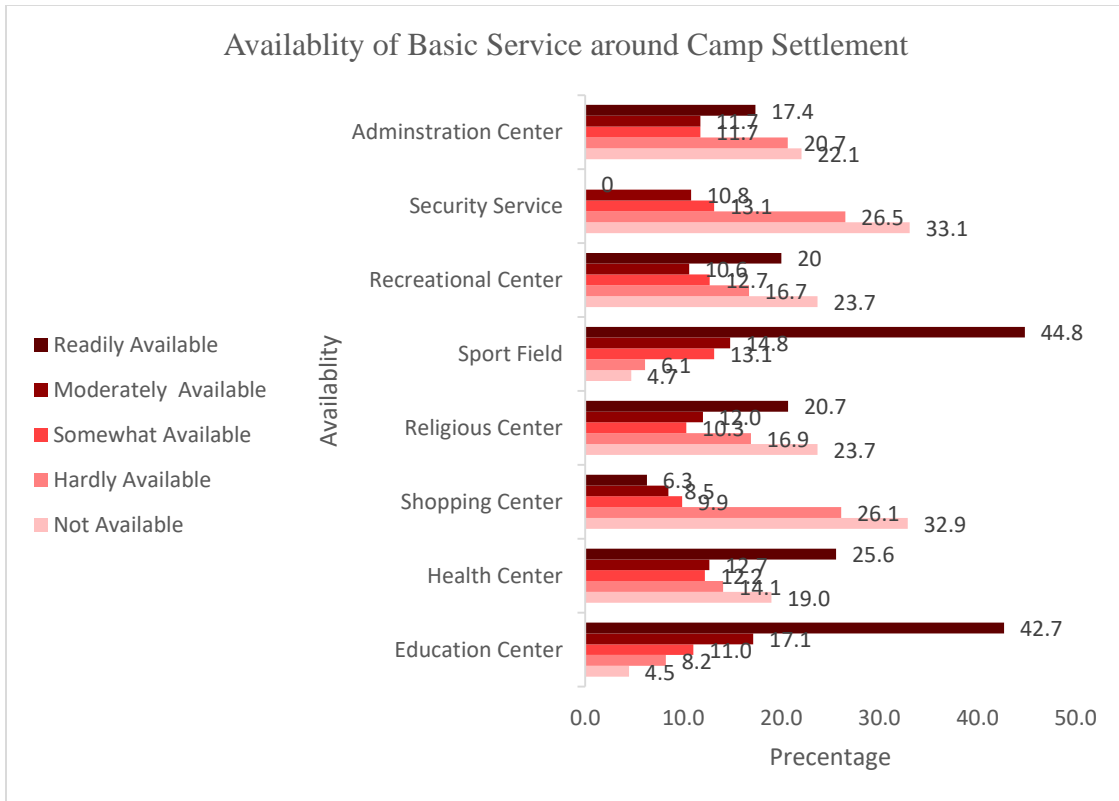


Figure 4.3-7 Basic Service around Camp Settlement

Only 4.2% of respondents reported lacking access to education, and 59.8% expressed satisfaction with the availability of educational services. A similar level of satisfaction was reported regarding access to sports fields. Security services and shopping centers were identified as the two most demanded services by the refugee community. Although there are many mosques in the area, 40.2% of respondents stated that they either do not have or have very limited access to religious centers.



Figure 4.3-8 Administrative & Food Distribution Service Area

During the field visit, it was observed that educational classrooms are underused. In parallel, sport fields are accessible and maintained. Meanwhile, physical access to religious centers and shopping centers is limited. In a focus group discussion, a woman mentioned that ‘access to quality of education is satisfactory. And an access to sports facilities has a positive role in youth development and stress relief. In the meantime, sectarian differences, distance from the shelter, and cultural restrictions have put a limitation on accessing the religious centers, which brings emotional and spiritual impact on women and children. Local authorities, religious leaders and some officials strain on infrastructural issues and staffing development regarding the education service. Planning to expand the local market or formalization of informal vendors may contribute in minimizing the crowding of the shopping centers. Regarding the religious centers, the key informants stressfully mentioned making the religious spaces for women and children friendly and inclusive



Figure 4.3-9 Primary & Secondary School, Worship area

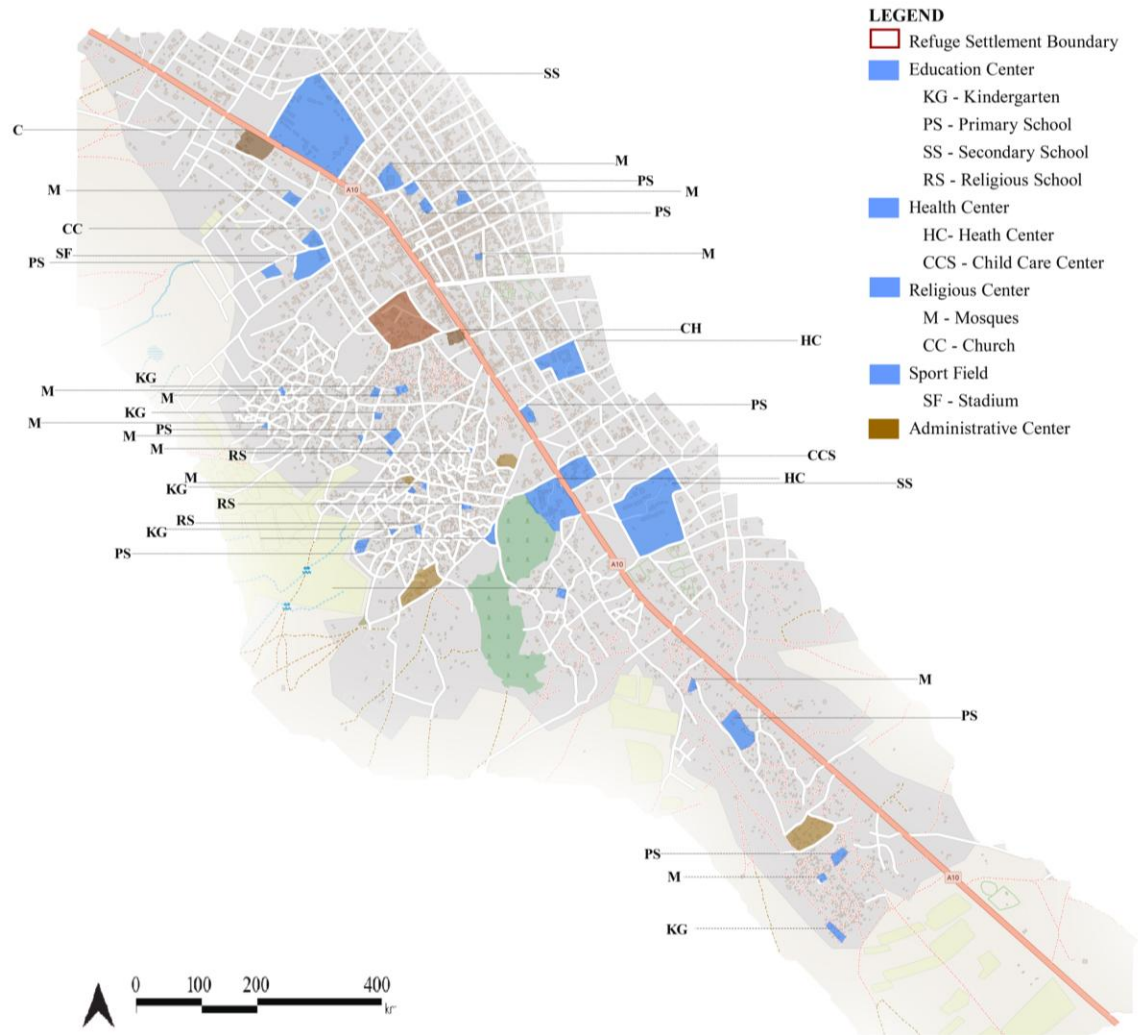


Figure 4.3-10 Settlement Service Map

### 4.3.3 Habitability

#### 5 Shelter refugee accommodation

74.2% of respondents reported not having adequate space for their animals. Similarly, 69.7% indicated a lack of proper space for domestic activities such as washing. As all refugees in the community are Muslim and require designated areas for daily prayers, 59.8% expressed dissatisfaction with the available prayer spaces.

Cooking is a common household activity, yet 49.2% of interviewees stated that they either lack a cooking space or find the existing one unsatisfactory. Additionally, 41.9% expressed a moderate opinion regarding the cooking area.

When it comes to sleeping arrangements, 48% of respondents reported dissatisfaction, while 44.4% had a moderate view of their current sleeping space. Regarding overall living conditions, 49.4% considered their living area unsatisfactory, and only 20.6% believed they had access to good-quality living space.

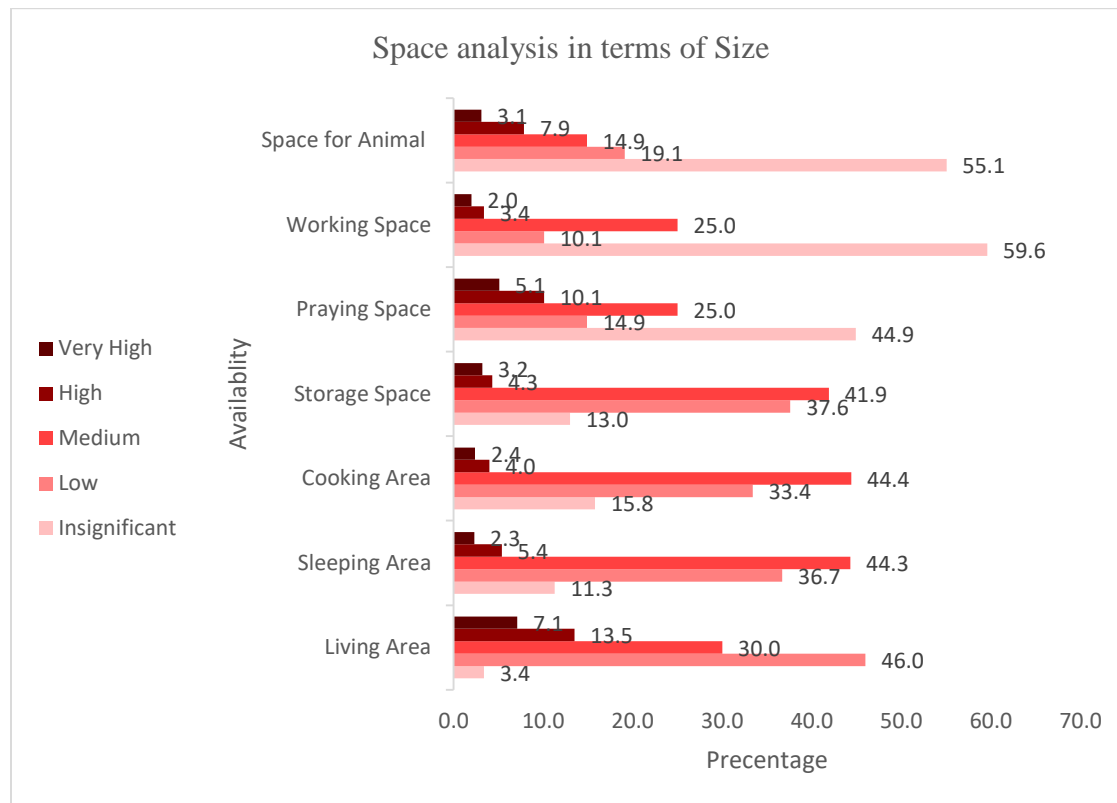


Figure 4.3-11 Space Analysis in terms of Size

During observation, there is limited space for single-purpose rooms, making rooms have multiple functions as living+ sleeping + praying or cooking+ space for animal. This indicates that the shelter has a poor hygiene system. Refugees mentioned that they tried practicing traditional livestock keeping which required additional room for their animal. Also, the majority of domestic activities are done in the camp compound shared by refugees or host communities. Shelter lacks basic ventilation, proper lighting, and show overcrowding in the area. Many shelters are found below Sphere standard. In group discussions, some refugees highlighted the lack of privacy where children, women and elderly usually complain about discomfort, noise, poor sleep, and cultural activity limitations caused by over-crowdedness. The camp officials mention the long-term planning that will enhance the housing conditions considering the camp's protracted setting. They

emphasized the introduction of fuel-efficient cooking systems like enclosed stoves to better enhance the cooking experience and limit environmental degradation effects.

## 6 Space Importance

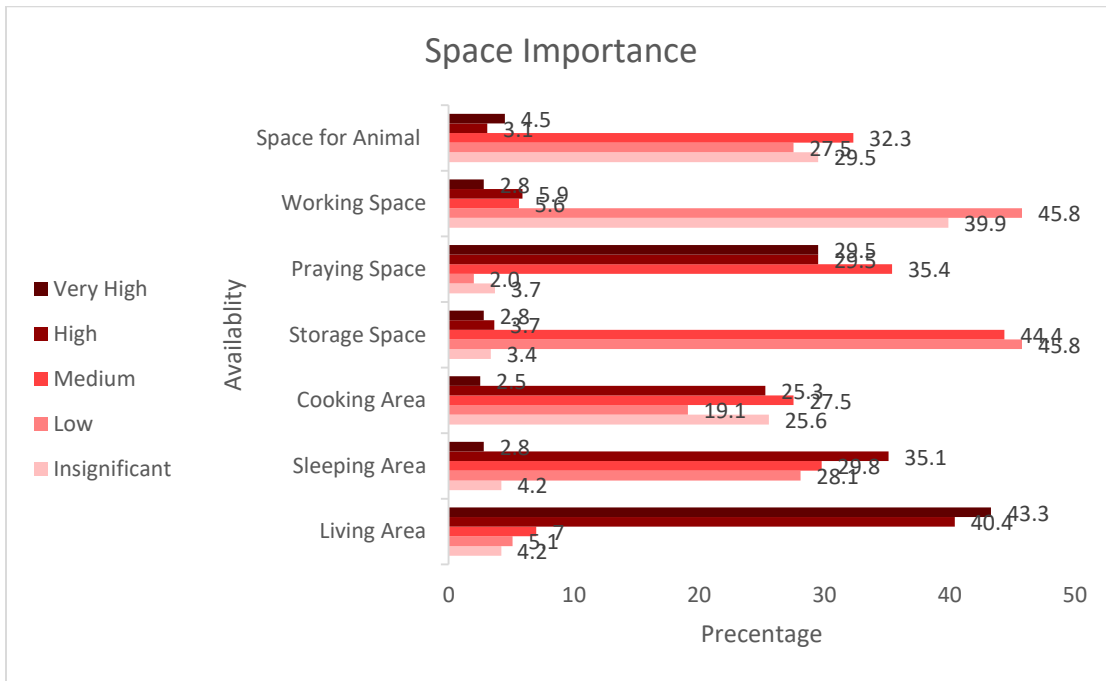


Figure 4.3-12 Shelter Space Importance

Refugees place the highest value on the living area within their shelters, with 36.3% of respondents identifying it as their top priority. This is followed by prayer space, which 25.5% of interviewees considered most important. Sleeping and cooking areas were also noted as priorities by 16.4% and 12.2% of respondents, respectively. In contrast, spaces designated for work, animals, and storage were considered significantly less important, with only 9.6% prioritizing them. These figures clearly highlight which areas within the shelter are most valued by the occupants

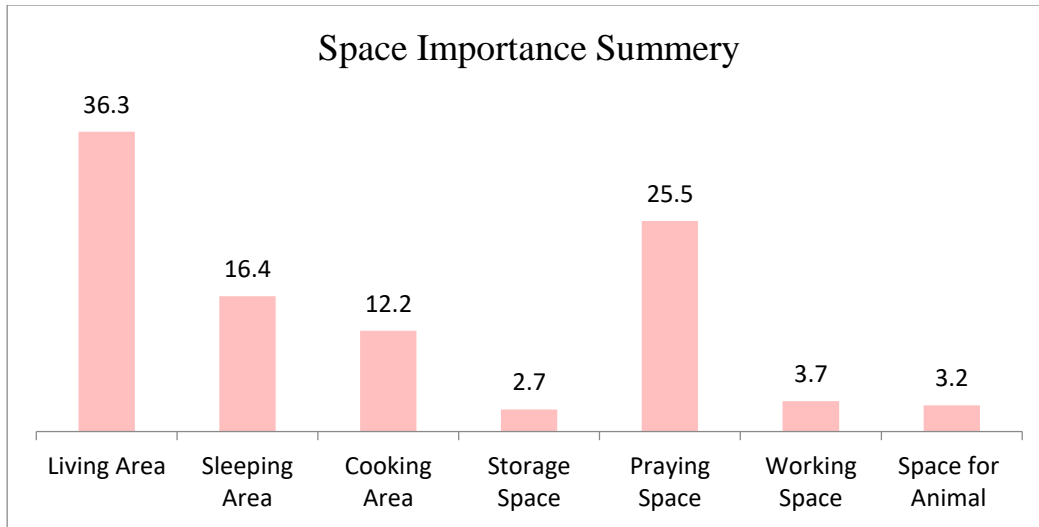


Figure 4.3-13 Summary of Space Importance

The living space and outdoor shelter are observed to be used for multipurpose activities, socializing, eating, resting, and receiving guests. It has been seen that the refugees tend to use different personalized decorative techniques to further enhance the internal space despite its limitations. The refugees use rugs, curtains, and plastic flooring sheets/carpets as decorative materials. A good expression of their living space in focused group was the space being as “heart of the shelter” where refugee family daily life is concentrated. On the other hand, prayer areas are often practiced in shared areas with minimum privacy.



Figure 4.3-14 Shelter Interior Space decoration

Considering the religious practice, which requires cleanness and facing towards the Grand Mosque in Makkah (Qibla), often improvised due to limited resources and improper orientation of the Shelter. Sleeping areas are often used by mats or mattresses that are directly placed on the ground with limited separation between adults and children or Men and Women. Due to the crowdedness, refugees complain about their challenges with noise and temperature. Women also express their concerns regarding privacy and gender-based segregation which is required from a proper house

### 7 Shelter Weather Protection

Only 3.9% of respondents stated that their shelters have poor protection against wind, while 86.3% reported a satisfactory or fair level of wind protection. However, 71.9% of interviewees said they are exposed to flooding due to the condition of their shelters. Similarly, 60.9% indicated that their shelters do not adequately protect them from rain.

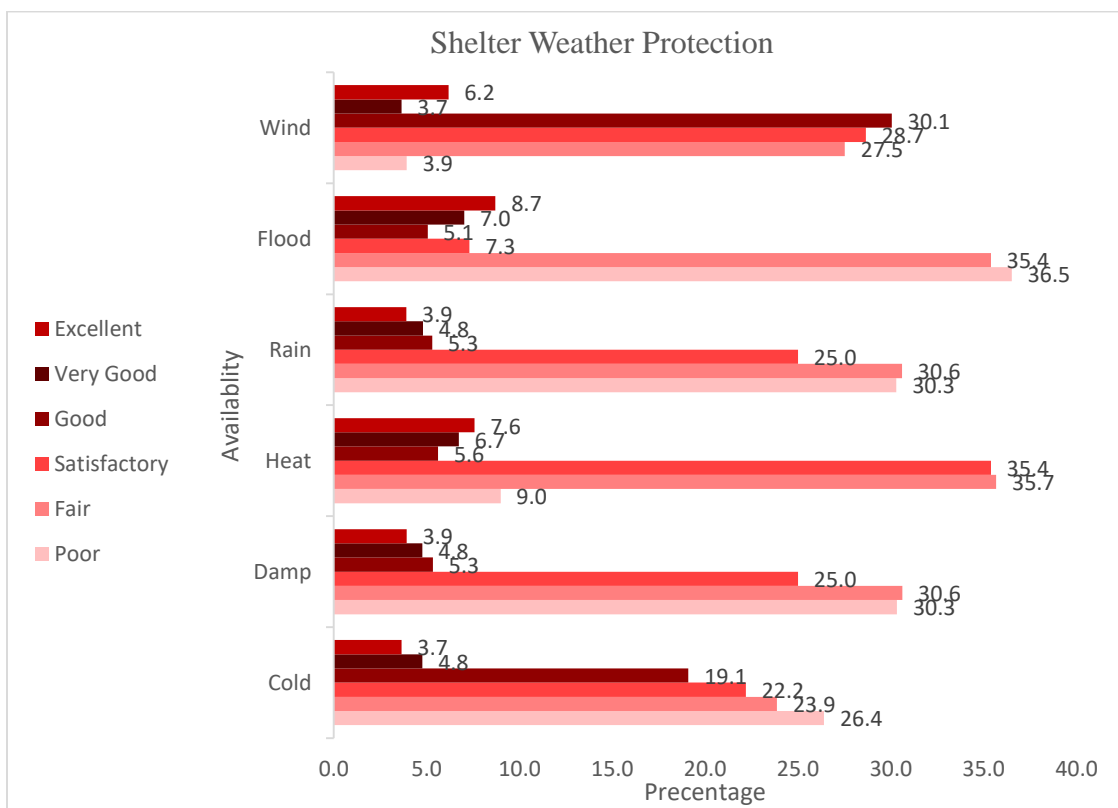


Figure 4.3-15 Shelter Weather Protection

Regarding heat, 71.1% of respondents rated their shelters' protection as fair or satisfactory, with only 9% expressing dissatisfaction. In terms of dampness, 60.9% reported that their shelters are not sufficiently protected. When it comes to cold, 26% of those interviewed said they have poor protection, while 56.1% rated the protection as fair or satisfactory.

During site visits, shelters are often constructed and covered by plastic or cloth sheets as protection from weather effects. Some shelter orientations do not follow proper wind-blocking strategies. The traditional shelter Aqal has good wind direction management where the dome structure promotes smooth airflow. As discussed in the focused group, refugees know that wind and heavy rain, which are the primary causes of flood, and erosion, are the major concerns. According to refugee reports, whenever shelters experience heavy rain and wind, refugee communities are engaged in repairing construction materials and shelter improvement the following days. The shelter shows deteriorated plastic sheets and unsealed wall joints that make the shelter prone to rain and wind.

#### *8 Shelter Construction Material and Techniques*

A majority of respondents, 69.6% expressed dissatisfaction with the partition materials used in the shelters, while only 17.7% considered them appropriate. Regarding openings, 29.5% rated them as poor, whereas 58.1% found them fair and satisfactory. A significant 71.6% of respondents reported a negative opinion about the quality of the roofing material. In contrast, 44.7% were satisfied with the flooring material, and only 5.3% rated it as poor. When it comes to wall materials, 54.8% expressed dissatisfaction, while 27.8% considered them fair. Structural materials received more positive feedback, with 66.8% of respondents rating them as satisfactory or good and only 8.7% labeling them as poor.

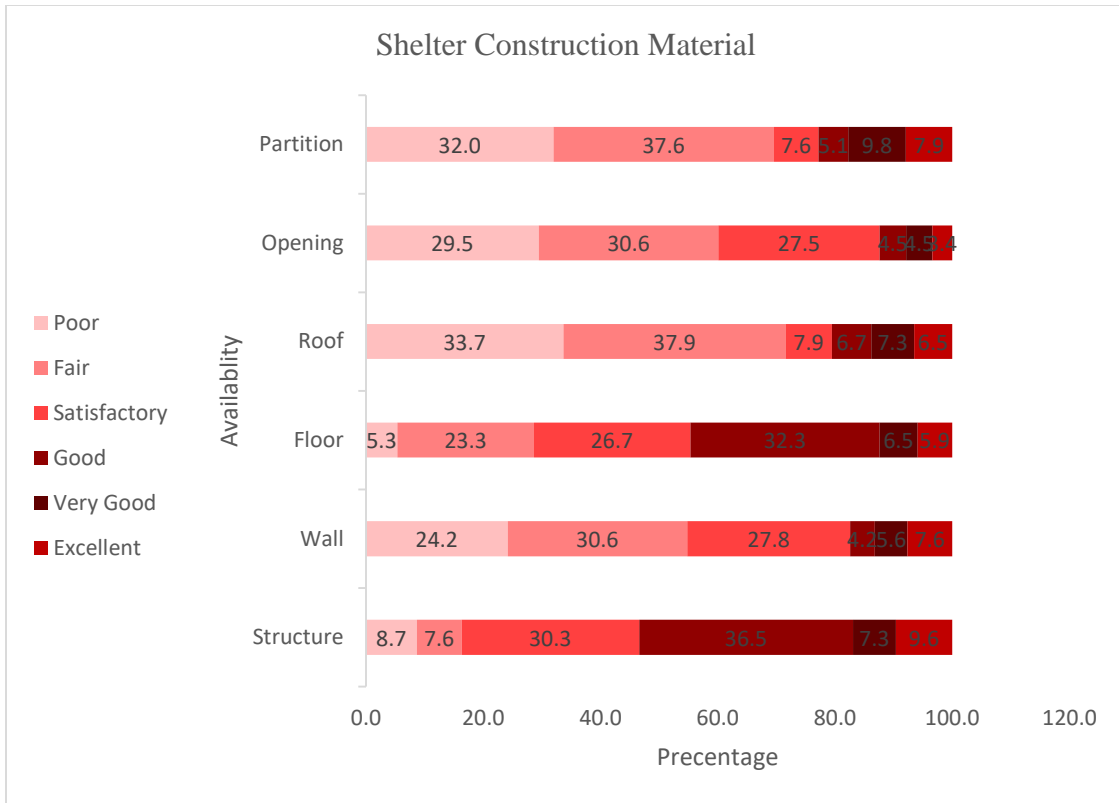


Figure 4.3-16 Shelter Construction Material

Regarding construction techniques, around 37.1 % responded partitions, openings, and roofs are fairly to be constructed with limited construction techniques and skills. The floor, which is basically decorated by rugs and carpets, does not require any particular skills which the survey data shows 26.7% satisfactory results. Meanwhile, since they are skilled in making the traditional Aqla, the structural techniques are very good with 35.6% rate.

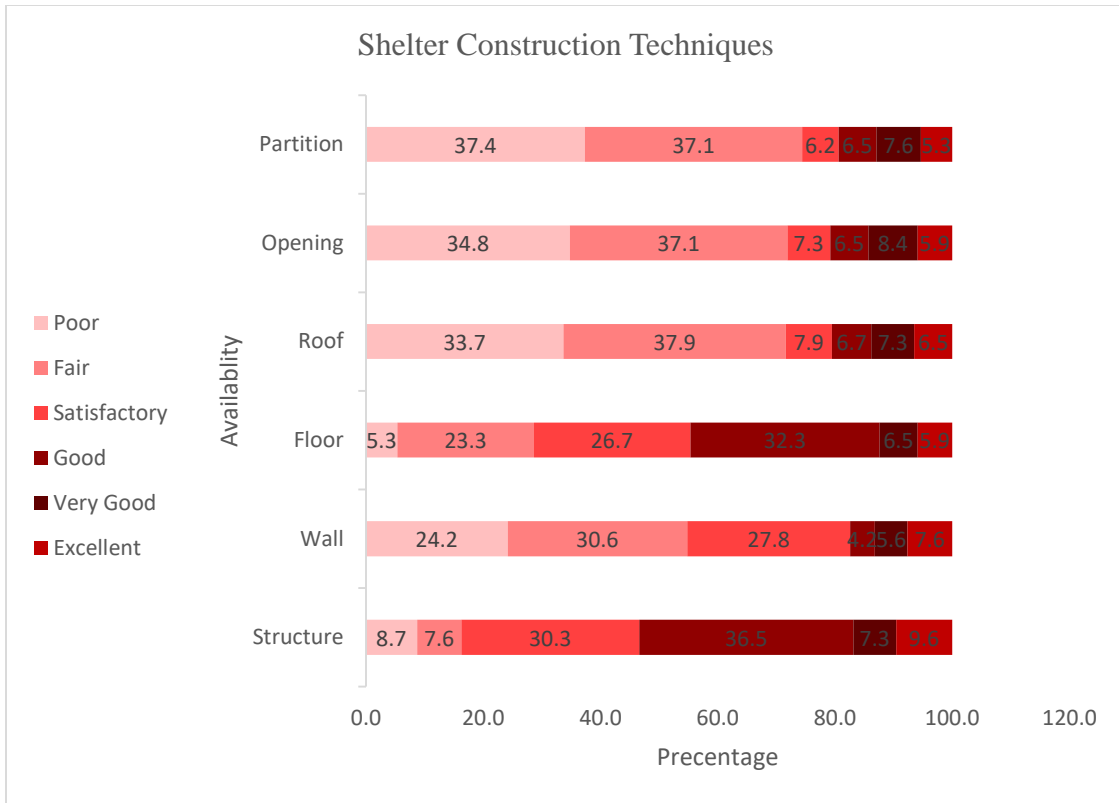
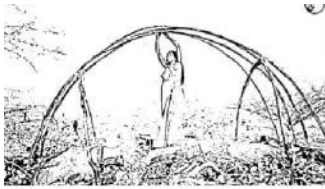


Figure 4.3-17 Shelter Construction Techniques

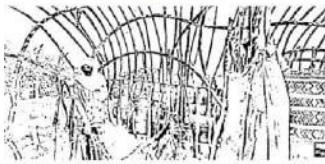
During observation, shelter partitions are made from garment fabric and curtains with some better partitions like plywood. These often show the inadequacy of space in terms of privacy, sound insulation and structural stabilities. Roofs are made of corrugated metal sheets and often with plastic or garment fabric sheets, which show signs of linkage and sagging plastic covers during rainy conditions. Walls are also covered with plastic sheets, lightweight wood frames, and material or sometimes mud covering, which all are prone to weather effects causing wear and tear. Door openings are not properly sealed due to material differences that occur with wall and roof joints. They sometimes are seen to have below the standard height of opening. Likewise, window openings are either absent or below the standard, limiting shelter ventilation and thermal conditions.



1. Women installing Dhigo sticks

### Site Clearance

Clearing ground level and selecting a flat elevated area.



2. Lool sticks are woven

### Erecting Arches

Inserting Dhigo sticks in to ground in circular pattern to create the dome structure



3. Udube dhexaad is placed

### Adding Horizontal Support

Making Lool thin sticks woven between the arched Dhigos



4. Alay mats covering ant the bottom

### Adding Vertical Supports

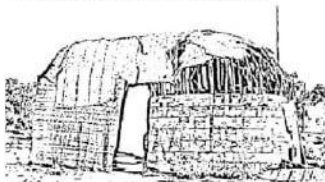
Placing Udube dhexaad at the center to enhance vertical stability of the structure



5. Alay mats are overlapped

### Adding Covers

Alay mats are over the dome frame starting from the bottom and going to top. Mats are usually overlapped to avoided openings or uncovered area. The mats are secured with the frame by ropes.



6. Alay mats covering roof top

### Creating Opening

while covering the frames by mat leaving a section for door and window is done by uncovering that particular surface and adding simple opeings made from woven mats, cloths which can be rolled and tied to the mat covering when require.



### Adding Weather Protection

To make the shelter weather friendly cloth and plastic sheet covers are over the Alay mats



7. Women sewing cloth covers



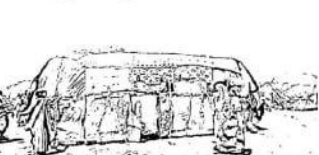
8. Women rolling sewed cover



9. Roll cover moved to be on top



10. Supporting roll cover on side



11. Full covering of sewed cloth



12. Additional plastic top cover

Figure 4.3-18 Traditional Shelter – Aqal Construction Procedures

Through interviews and group discussions, refugees highlighted shelter materials being flood-prone. They also underlined the need for proper opening system that enhances shelter ventilation and security. A mother expressed her concern regarding unstable roofing material, which causes leakage in children's sleeping areas. The humanitarian shelter assistance has noticed the challenges faced due to construction material, and there is a proposal for shelter upgrading with the new inclusive road map plan. Meanwhile, they point out that partitions are excluded from shelter kits due to budget constraints but are significant to Kebriyah Camp cultural and social preferences.



Refugees repairing shelter covering affected due to heavy wind and rain that occurred during the data collection time. The refugees are sewing together personal clothes with plastic sheet as one means of construction material for shelter.

Figure 4.3-19 Refugees repairing and making new shelter Construction material

#### 4.3.4 Accessibility

- *Camp Livelihood Opportunities*

The refugee camp offers various opportunities to its residents. Among all respondents, 72.1% reported having access to employment, while 24.2% had access to income-generating activities. Additionally, 35.9% of the respondents had the opportunity to participate in vocational training.

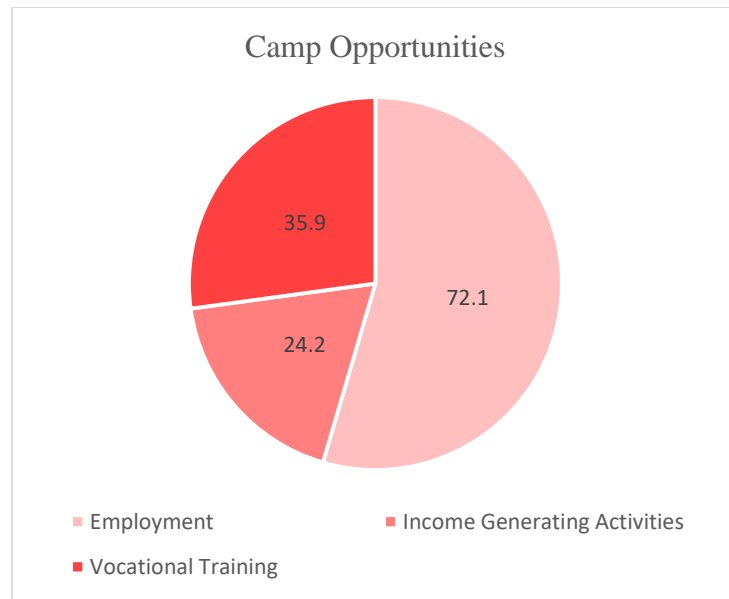


Figure 4.3-20 Camp Opportunities

As the literature shows, refugees have limited livelihood opportunities that can significantly enhance their quality of life. During qualitative interviews, the refugees mentioned that the camp has limited but useful employment and income generation opportunities such as language translation, teaching, and owning small shops that benefit the refugee community. One refugee said 'I used to own this shop, now it is closed due to shortage of finance that was available in opening stage by NGOs donation.' As she speaks, she mentioned that the opportunity was gained after completing vocational training and showing interest in owning a business. Other refugees like her have the chance to develop handcraft skills and homemaking skills. Surprisingly, the majority of the refugees have family members living aboard in third country that send money and a consistent income base by remittance. Some mention informal labor works around the host community area and small business like collecting safe drinking water from remote area and selling it to refugee in need. A good practice observed in Kebribeyah is that the country mobility permit is widely practiced without any refugee mobility restriction. This shows that there is a better chance to get informal employment opportunities. Despite refugees having the right to free movement, the economic and employment opportunity of the town is restricted even for the host community, which further puts tension and conflict with the host community. In practice, Somalia Women are the ones who practice income generation activities to support their family, where burdens among family are not shared and skill works are limited to be practical. The camp has a

continued platform for vocational training and support mechanism such as microfiche and grants for small businesses. In the group discussion, they mentioned interesting fact that the refugees accepting their support from refugees since it benefits them to get a chance to go abroad and also if not, the remittance received from family members has significant benefit for modifying shelter and even for opening informal small business outside the camp compound. The RRS staff and some refugees have also mentioned that the refugees own proper houses and land in a nearby compound.



Refugee greeting fellow family members who's case succeeded to transfer to USA

#### Figure 4.3-21 Refugee Resettlement USA

The evidence of refugees' being dependent on external assistance have direct impact on sustainable economic activities. This is contrary to Sustainable Development Theory, specifically SDG 11 (Sustainable Cities and Communities) and SDG 1 (No Poverty), which envisage inclusive, resilient, and economically productive settlements (United Nations , 2016)

- *Accessibility for Disadvantage groups*

This report highlights the accessibility challenges faced by individuals with physical disabilities in relation to various essential services. Administrative centers were reported as poorly accessible by 23.6% of respondents. A similar proportion rated their location as merely satisfactory, while 43.3% considered them good or very good in terms of accessibility. Security services were also found lacking, with 24.4% stating they were poorly available and 41.6% saying their availability was fair or satisfactory. Only 9.3% felt that security services were highly accessible.

During observation, the camp compound shows the absence of major design elements that can benefit the disadvantaged groups, Such as ramps and wide pathways in public and administrative

buildings. The camp administrative, food distributive, and public service like school and health center, has signages and some handrails. In a group discussion, the refugees mentioned how their family members face challenges in accessing schools, clinics, administrative offices, and bathrooms. For young children and elderly, this has emotional effect that relates to independence on family members to access social events or necessary activities.

Recreational areas posed notable challenges as well. About 37.6% of disabled individuals reported poor access to these facilities, and only 12.9% expressed satisfaction with their accessibility. Sports fields received similarly low ratings. Places of worship, another important community service, were also not easily accessible. Approximately 36.6% of respondents said they had very limited access, and 24.4% rated their access as only satisfactory. Meanwhile, 11.2% had very good or excellent access, and the remaining respondents indicated generally good access.

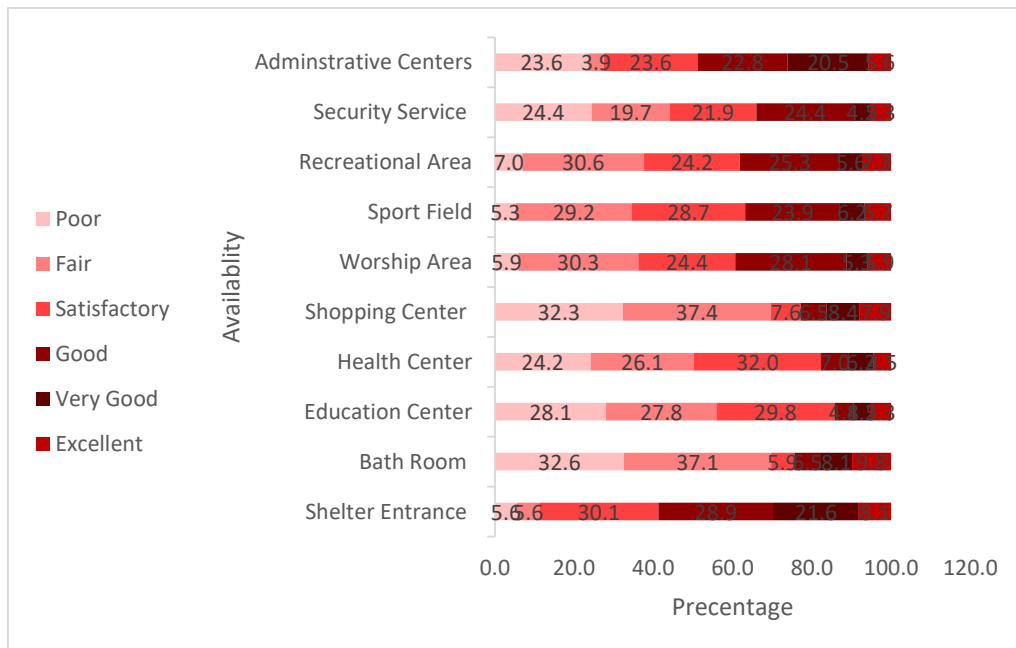


Figure 4.3-22 Shelter and Settlement accessibility regarding disadvantaged groups

Shopping centers emerged as one of the least accessible services, with 69.7% of disabled respondents reporting poor access. The rest of the participants gave varied responses, ranging from satisfactory to excellent access. Health centers, a crucial service especially for people with disabilities, were also inadequately accessible. According to respondents, 24.2% had poor access, 26.1% fair access, and 32.0% satisfactory access—demonstrating a clear need for improvement.

Access to educational facilities showed a similar trend, with the majority of respondents lacking easy access.

Bathroom accessibility was another significant concern, with 32.6% of participants reporting poor access and 37.1% stating they had only fair access. Just 17.9% indicated very good or excellent access to bathroom facilities. In contrast, shelter entrances were among the more accessible services. A majority of 56.6% of disabled dwellers reported good or very good access, 30.1% said access was fair, and only 5.6% reported poor access.

In terms of shelter-based access, like rest room shows mobility impairment, which exposes the vulnerable groups for poor privacy and hygiene in using latrines and bathroom facilities. On the contrary, since the culture has grounded shelter entrance and sitting preferences, relative access to shelter and sleeping zones is not restricted. Speaking with the humanitarian shelter assistance development plan is under reformation to have an inclusive camp settlement and shelter unit. Also, recently, new shelter-based NGOs planning shelters in collaboration with refugees and disabled groups have been practiced in some compound zones.

#### **4.3.5 Location**

- *Location of Basic Service around shelter compound*

One of the survey questions asked respondents to estimate the distance of essential services from their place of residence. A majority 70.4% reported that green areas are located far from where they live, with only 9% stating that such areas are nearby. Regarding refuse disposal, half of the respondents indicated that it is either far or too far from their homes, while 21.8% reported that it is close or fairly close.

Access to energy for cooking was also identified as a challenge, with 61.8% of respondents stating that it is far from their living area and only 8.7% indicating it is nearby. Similarly, access to safe drinking water was reported as limited, with 63.1% describing it as far or moderately far. Only 10.3% said they have close or fairly close access to safe drinking water. These responses highlight the considerable distance between shelters and essential services for most residents.



Figure 4.3-23 Shelter Compound as used ad recreational / green space

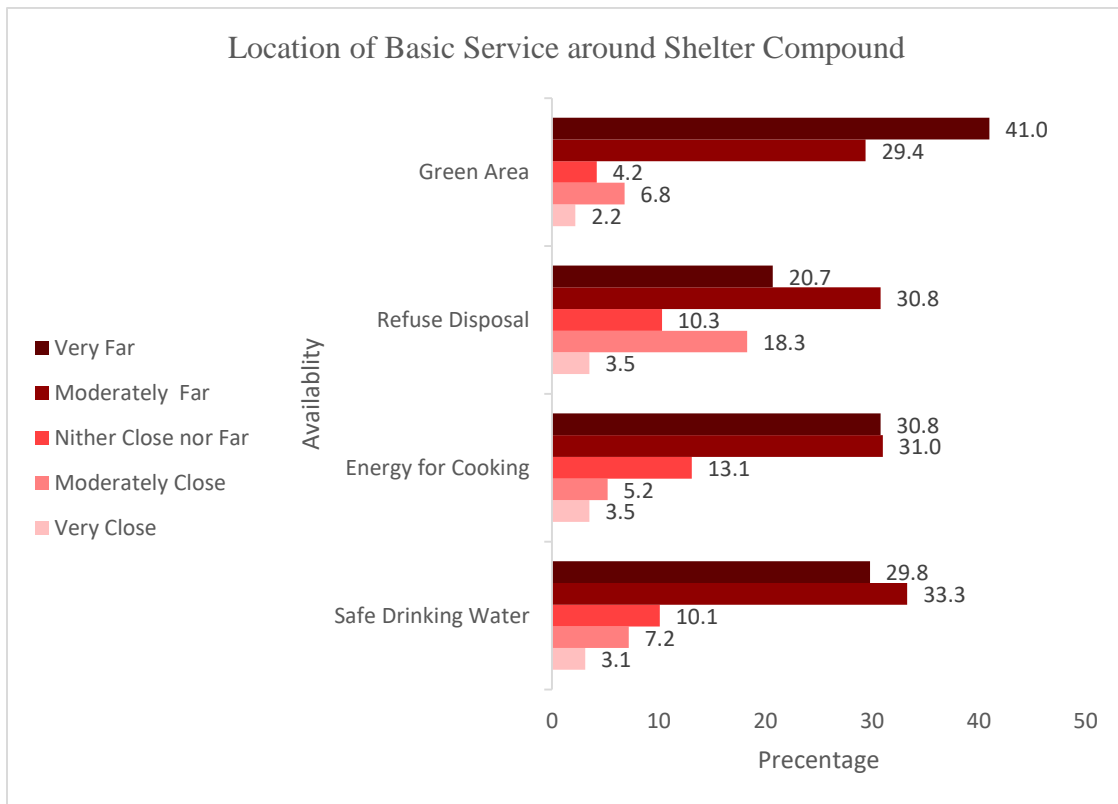


Figure 4.3-24 Basic Service location around Shelter compound

The main community gathering that is effectively utilized is the administrative zone where the RRS Jigjiga field office sits. Due to the local environment, the existence of green space is limited even if it is beneficial for mental well-being, which increases the quality of camp life. Barriers to accessing such space have cultural significance also, as mentioned during group discussion. Even

if there is dedicated waste collection points refugees tend to use informal dumps around local pathways. Such inadequate waste facilities have been mentioned as factors that cause health risks to refugees living in the dump areas.



Figure 4.3-25 RRS Field office used as main social gathering center

- *Location of Basic Service around Camp compound`*

Service distribution across the refugee camp varies significantly depending on the residents' location, which influenced how respondents assessed their proximity to key services. For example, the administrative center was reported as far or moderately far by 27.9% and 30.0% of respondents, respectively, while only 16.6% said it was close enough to them. A similar trend was observed for security services, with the majority of respondents indicating low or moderately low proximity.

Access to recreational centers was also limited, with 63.4% stating they were either far or moderately far from these facilities. In terms of religious spaces, 52.6% of respondents reported that these places were far away, while the remainder found them fairly or closely located. When asked about shopping centers, 61.8% of respondents said these were far from their residences, while 9.4% said they were moderately close. Health services were also a concern: 20.2% of respondents said the health center was very far, and 31.7% said it was moderately far. Only 16.2% reported that it was close, and just 6.3% said it was very close.

Access to education, particularly important for children, was a notable concern. A total of 46.4% of respondents stated they lived either very far or far from educational facilities. In contrast, 33.3% reported living close enough to access education services. These findings underscore the uneven distribution of essential services across the camp and the challenges many residents face in accessing them.

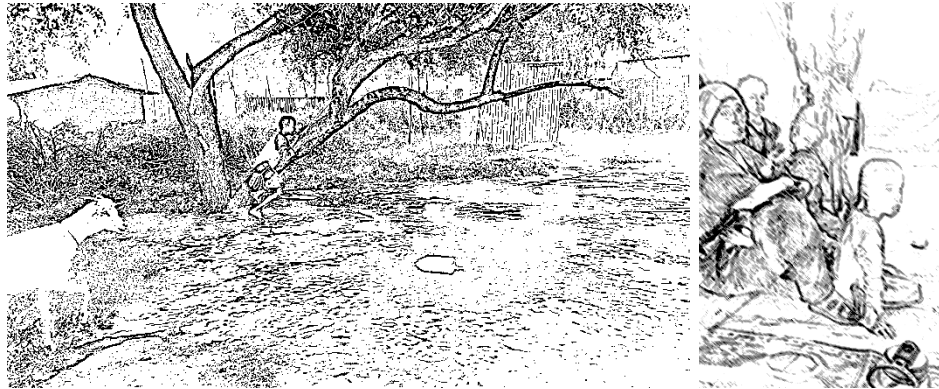


Figure 4.3-26 Shelter compound used as playground and social gathering space

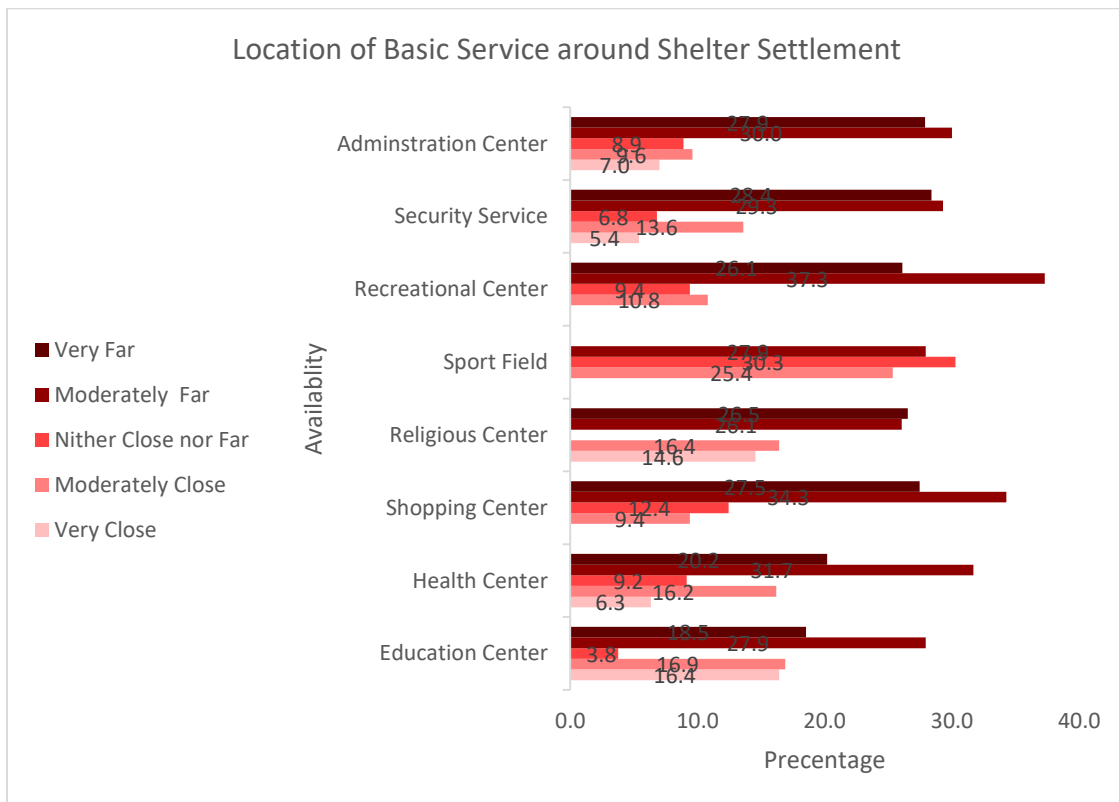


Figure 4.3-27 Basic service location around Shelter Settlement

Throughout observation, the physical distance between shelter and service has a significant difference in relation to shelter location in administrative zones. Primary Schools and Islamic / Qur'anic have been thoughtful places within walking distance from the shelter location, but other services like secondary school service and health centers are located outside the camp compound, servicing both refugee and host communities together. The main challenges are related to pathway accessibility and pavement material, which directly put constrain on accessing basic services. In a focused group discussion, a mother mentioned that her children's daily routines are not affected by the proximity of the service but rather the local routes the children take to get to school. Supporting this in another refugee member mentioned how distance affects student's interest to go to school, which basically relates to learning outcomes and aspiration. The different camp officials mentioned how the site plan or the planning area has significant constrain in providing equitable service placement. Also, they highlighted that refugees preference for Islamic education rather than modern education has impacted the dropout rate in primary school.

- *Safety of Camp premise*

86.5% of residents believe that the refugee camp is overcrowded. Although concerns remain about potential hazards within the camp, 67.4% of respondents believe that there are hazardous areas in the camp. When it comes to pollution, the responses show a different trend: only 25% of respondents believe the area is polluted, while 75% believe it is not.

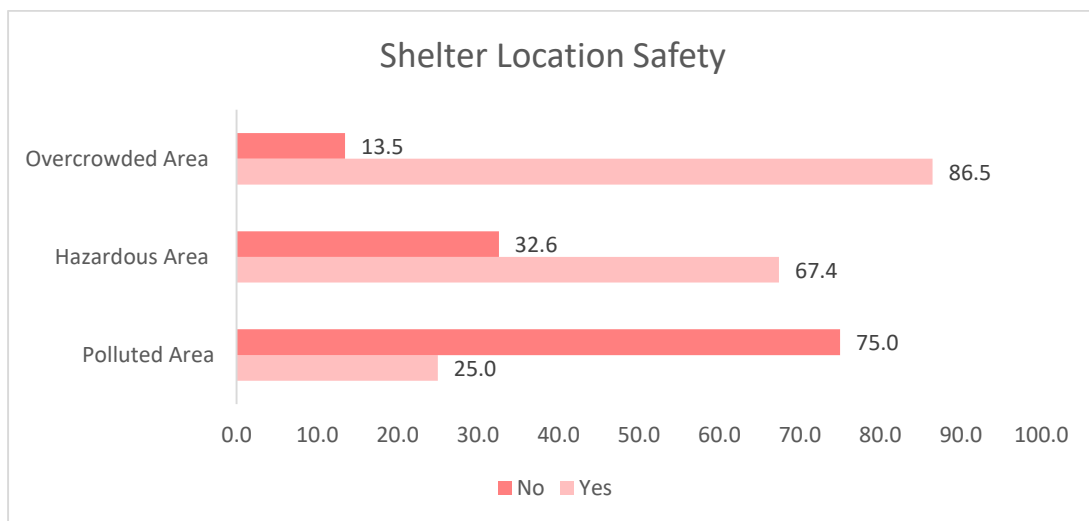


Figure 4.3-28 Shelter Location Safety

As highlighted in qualitative interviews and group discussions, shelter crowdedness impacts privacy and causes conflict with family members and neighbors. Even stress and resource strains have been caused in women and children under the age of 12. Also, regarding shelter locations in hazardous or polluted areas, refugees have problem of perceiving pollution as a problem due to refugee's high tolerance level, lack of awareness, and prioritizing basic needs like food. During observation, shelter density was at its peak with some households with shared facilities like toilets and water sources. The topography's steep slope has made shelters prone to hazards and poor waste and infrastructure management systems.

- *Hazard Experiences within the past five years.*

The other question they have been asking is about exposure to different hazards over the past five years. Regarding famine, almost half 50% of the respondents said they were exposed to it, while the remaining half said they were not. When it comes to epidemic diseases, 69.9% of the respondents reported exposure. As for heavy wind, the majority, 53.9%, said they were not exposed.

In the case of flooding, 67.4% of the respondents said they were exposed to heavy floods. Regarding electrical accidents, a significant majority, 81.7%, reported being exposed. When asked about landslides or earthquakes, 68% of the respondents said they were exposed. For accidental demolition, 66.9% indicated they were exposed. Lastly, 66.6% of the respondents said they were exposed to fire hazards.

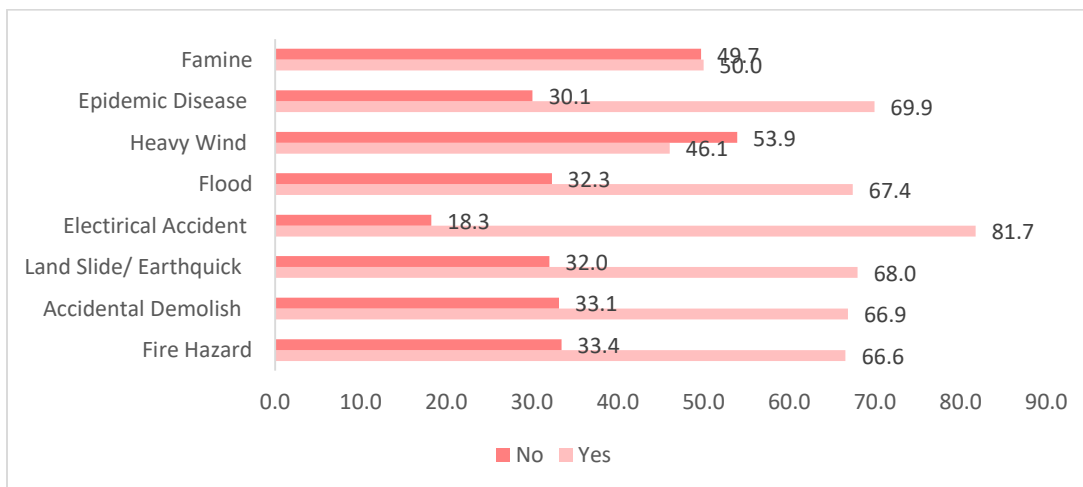


Figure 4.3-29 Refugee experience with the past 5 years.

In an in-depth interview with the refugees, one of them from Zone 3 mentioned a recent experience of her friend being affected by fire. She highlighted that the shelter construction material is very flammable whenever similar accident happen. Even if refugee life has not been taken, the emotional effect on their children and donated food loss has created a gap in rapid recovery. She further suggested that if the shelter and cooking area are constructed with better fire resistance material, such accidents can be minimized. Since the field visit was conducted in Ethiopian `Tsedey season, when the winter has passed, but there exists rain in between, heavy rain experienced for three consecutive days during the data collection time has shown major environmental vulnerability of the camp compound.



Figure 4.3-30 Effect of heavy rain and Wind during data collection

The camp had poor drainage; flood paths led to the shelter compound and entry, and erosion-prone- lands make the path unstable for access. Also, the occurrence of the heavy rains has created unprotected electrical wiring to be disconnected from their poles and laid in the walkways of the camp compound.

The camp coordinator mentioned the record of various incidents in the past 10 to 5 years, such as floods, fires, and epidemics (COVID-19, cholera). The major factors for the accidents are poor campite planning and unsafe shelter construction material. The external actor does plant various disaster response and mitigation methods such as drainage management projects, fire safety methods, vaccination, and camp lockdowns.

### *1. Shelter safety from Pollution*

Another very important part of the survey focused on how much the shelter is exposed to different types of pollution. Starting with noise pollution, 64.9% of the respondents said their shelter is not exposed to it. However, when it comes to air pollution, 83.7% of the respondents reported that they are exposed. Similarly, 71.1% of the refugees responded that they are exposed to liquid pollution.

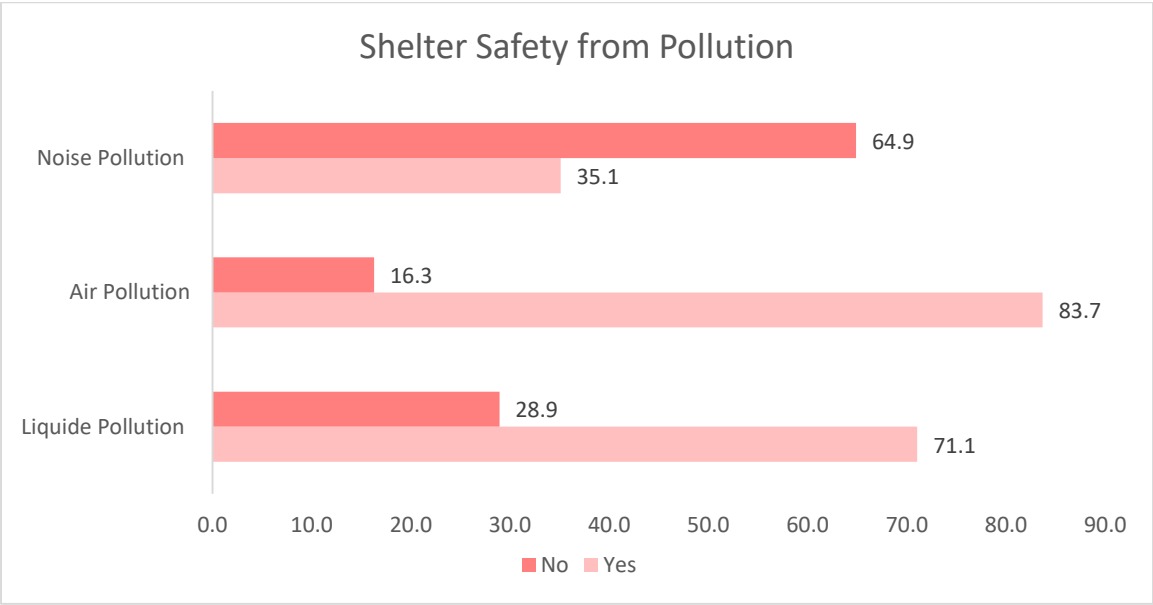


Figure 4.3-31 Shelter Safety from Pollution`\\

Among the refugees involved in an in-depth interview, one highlighted how the lack of proper waste disposal systems have impacted the shelter, creating air and liquid pollution that has affected her newborn child in respiratory-related health conditions. They do mention the improvement in managing waste, but environmental factors keep promoting the pollution, such as when there is heavy rain, since the bathrooms don't have roofs, over-flooding connected to liquid waste has been reported in some areas of the camp. Likewise, in the group discussion, liquid pollution has been reported to cause waterborne illness in the past 3 years. Since refugees use wood for daily cooking and burn dry waste on a monthly basis, air pollution, has also been reported by the women who are usually engaged in those activities.



Figure 4.3-32 Informal Waste disposal Dump

In a field visit observation, indicates that the camp has no pollution regarding noise but air and water/ liquid pollution are significantly serious affecting refugee day to day life. Since shelters are located in close proximity to latrines and cooking areas, exposure to liquid pollutant elements can occur frequently. Also, the water source for drinking and sanitation is used from underground holes made for the collection of rainwater, which is also prone to easy exposure to pollutant elements. The compound poor draining system and formation of stagnant water all over the local paths have also had a major effect in creating environmental pollution for the refugees.

The key informants have seen the challenges regarding the topographic effect that caused major problems regarding drainage and waste disposal systems. According to their prior experience, they have tried drainage mitigation systems and control mechanisms with rainwater or flood, but due to the problem severity and local environmental issues, the problems still exist, causing tension in refugee quality of life.

## *2. Safety & Security Experience*

The next question focuses on the safety and security experiences of the residents in the refugee camp. The first issue is beggary. About 30% of the respondents said they are always exposed to beggary, while 32.6% said they have never experienced it. Meanwhile, 28.9% stated that they sometimes face it.

The next issue is prostitution. The vast majority of respondents, 89.9%, said they never or only occasionally encounter prostitution. Regarding addiction, a similar pattern was observed: 83.7% of the respondents said they rarely face problems related to addiction.

Another issue addressed in the survey is suicide and murder. Regarding this, 50.6% of the respondents said they rarely face such issues, while 19.1% reported that they usually experience them. When it comes to physical abuse, 28.1% said they usually face this problem. However, the majority, 64.9%, responded that they rarely or never have such experiences. The last issue is robbery and theft. The majority of respondents, 84.8%, said this problem almost never occurs. Only 5.1% reported that they always or usually face this issue.

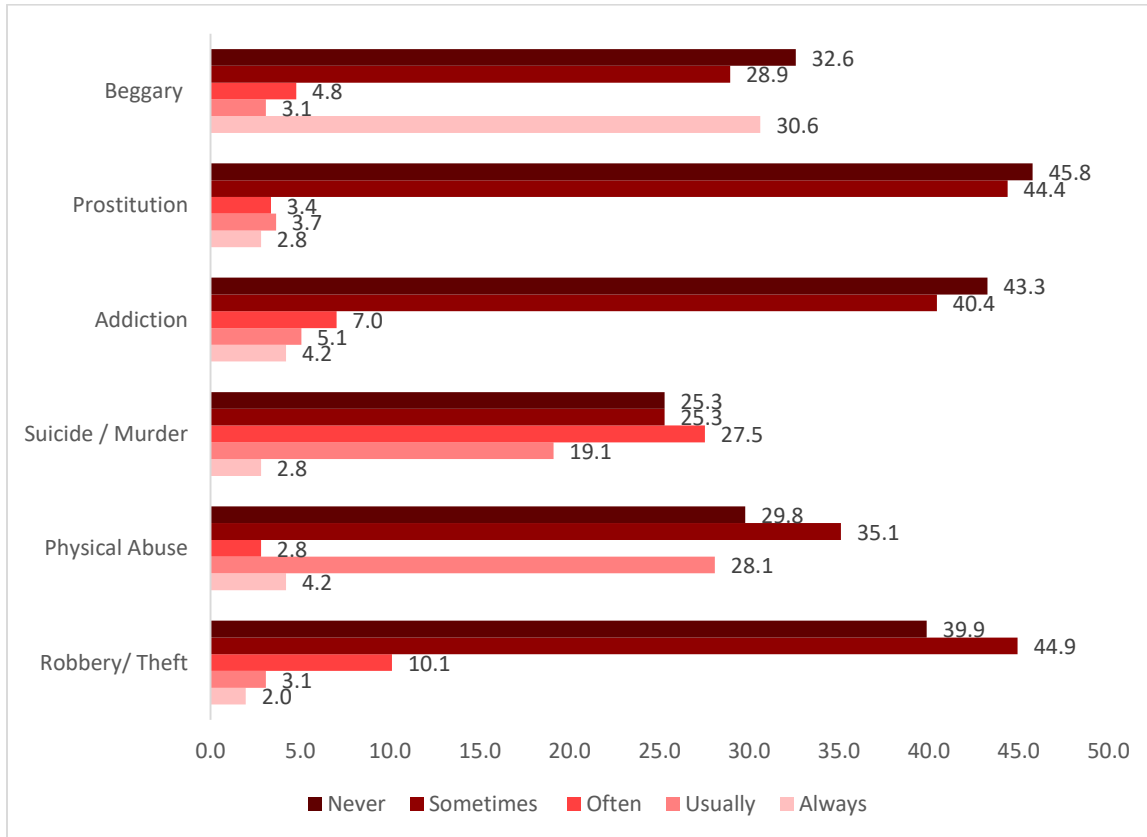


Figure 4.3-33 Camp Safety and Security Experience

Associating with the above quantitative data, the camp compound has no proper infrastructural lines such as shelter isolation, poor lights, and street access. It is observed that the camp is a potential area that is vulnerable to physical abuse and crime. Due to the refugee's respect for their religion and culture, there are no registered complaints regarding them. Also, the camp compound does not have a security presence that can rescue whenever incidents happen. In the interview, one refugee said that since the camp doesn't have nighttime life, considering the layout and limited presence of services or activities made at night time, the risk of feeling unsafe might not be a good

question to raise in refugee camp life. Likewise, some refugees do fear attacks from the host community if disagreements and conflicts happen between them.

In a focused group discussion, one of the groups that involved youth mentioned that young male refugee members are addicted to `Chate` since there are insignificant livelihood opportunities and consideration of the addiction as a cultural engagement hereditary from their elders. More on the subject, they mentioned that people, especially Women and children, might not be willing to discuss incidents related to physical abuse or Gender-based violence (GBV).

From the external stakeholder's perspective, such topics have been covered in detail, and awareness has been made of methods for safety incidents like violence and abuse. They do mention that during nighttime time, when all administrative and governmental bodies depart from the camp compound, safety challenges might occur. Comparative studies across African refugee camps (e.g., Bidi Bidi, Uganda) also highlight that culturally inappropriate shelter design undermines psychosocial well-being and increases gender-based violence risk (Turner S. , 2016)

#### **4.3.6 Cultural Adequacy**

Another major issue concerns personal experiences and social and cultural perceptions, particularly regarding the practice of co-design for cultural inclusion. In this regard, 96.1% of the respondents said that the designs are not culturally inclusive. During the qualitative interview and discussions, refugees mentioned their preference for traditional spatial arrangements that give respect to their culture and religious beliefs. Also, they do have a cultural norm that women practice their religious practices at home compared to those who have a chance to go to Mosques. Thus, the females as horseheads feel frustrated with being able to modify their house to their preference and have a chance to get consulted before any upgrade or innovation plans in practice. In the field visit, the absence of cultural physical space is widely seen, and there is uniformity in shelter design without considering shelter significance to culture.

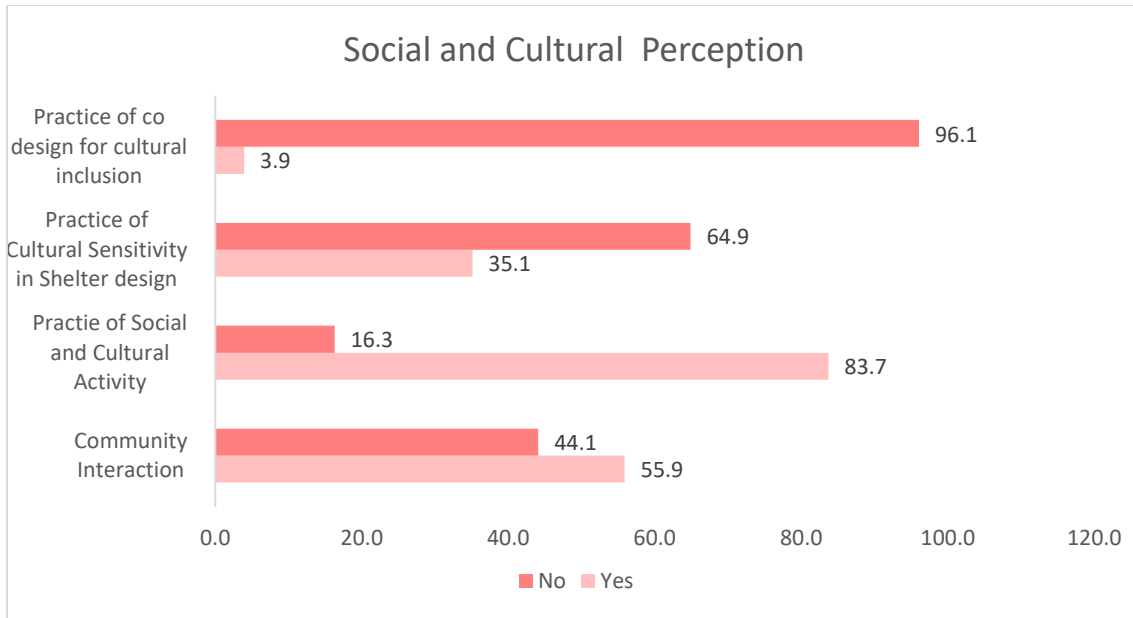


Figure 4.3-34 Social and Cultural Perceptions

The next issue is the practice of cultural sensitivity in shelter design. Here, 64.9% of respondents said that the design is not sensitive to their culture. The qualitative interview highlights how the shelter is restricted to gendered and refugees with special needs space usage as culturally appropriate. In group discussion, they mentioned their shared experience as the shelter creating social discomfort and conflicts in shared open space among refugees themselves and with the host community. Also, due to the space inappropriateness, the shelter lacks user friendliness for children, females, and the elderly or acts as a human-centered design. To enhance their shelter, it is observed that refugees tend to add partitions with covering sheets, space transition, especially on entry, and create extension shelters that can reflect and respect their cultural norms.



*Figure 4.3-35 Refugee Focused Group Discussion*

Regarding whether the shelter provides space for practicing cultural and social activities, the response was positive 83.7% said yes, it does. For various occasions and social practices, the RRS field office compound around the entry point and sometimes nearby open space around the shelter zone will be used as multipurpose space for holiday celebrations, prayers, or other social engagements. Since the majority of shelters are enclosed by wooden fences, shared activities practiced between neighbors happen in the compound where group meal preparation is done, Children's playground, and sometimes station for elderly or meal members meetings. The refugees do suggest the need for specific communal areas that can be used for various activities. During field visits the refugees tend to gather and use communal around their plot, and during registration/ food distribution time, they tend to gather around shaded tree branches. Finally, when asked about community interaction, 55.9% of the interviewees said the space does allow for interaction, while the remaining 44.1% disagreed, saying the shelter does not support community interaction. The refugees collectively agreed that the space is not limited to barriers to interaction as refugees. There exists informal interaction stations such as food distribution zones, water tap areas, and religious centers mentioned in the quantitative data source. As the group discussion suggested, a social gathering area is required that can enhance the current static signs of social interaction as children's playground and shared cooking space. These spaces do require proper roofing or shading and flooring mechanisms to enhance usability and application, considering the regional zone weather conditions.

## 4.4 Aspiration for Improving Shelter Adequacy

### 4.4.1 Future Aspiration and Expectation

Finally, the interviewees were asked about their expectations for the future. The majority, 43.0%, of the respondents, said they expect no improvement. Another significant portion, 34.0%, believes that the situation in the shelter camp will become worse than it is currently.

Meanwhile, 12.1% believe there may be a slight improvement, and 9.0% expect a medium level of improvement. Only 2% of the respondents believe there will be a major improvement in the refugee shelter.

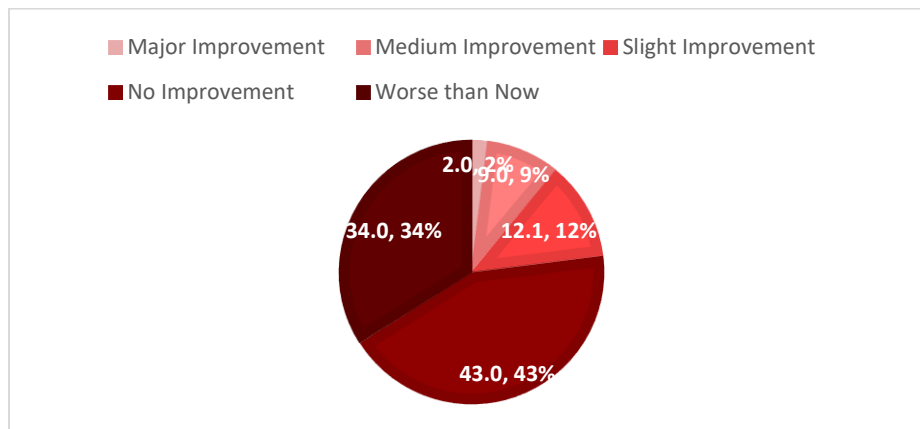


Figure 4.4-1 *Future Expectations*

Similarly, during the observation, infrastructure degradation in the camp has been seen. Despite humanitarian and governmental bodies' efforts in improving shelter and infrastructure, such as maintaining dilapidated shelters, latrines, and water taps, the changes made are insignificant compared to the refugee population and needs. The external actors try to create awareness and provide the necessary material needed for shelter/camp life quality improvement. In group discussions, refugees mentioned that there has been a promised upgrading plan to improve their shelter, but due to financial and political constraints, they have perceived slow major improvement over the past three decades. In some cases, refugees mention their hopes relying on NGOs and that of their family members who have been deported to third country where they can get donations and life-changing opportunities with remittance and invitations.

#### **4.4.2 Improvement for Refuge Shelter Adequacy**

When questioned on suggestion methods to improve refugee Shelter adequacy in Kebribeyah Camp, refugees in focused group discussions and interviews underlined policies as neglected part when it comes to their shelter rights and adequacy. Some of them mentioned that due to a lack of awareness of the legal framework of shelter ownership, they are restricted from improving their shelter according to personal interests. In addition to the legal framework, camp officials were also asked. Even if shelter provisions are included in humanitarian aid, it is usually overlooked and mandates to manage shelter often vary between different stakeholders such as UNHCR, RRS and Local governments. In general, policy revision considering the protracted camp is suggested as one means of improving the adequacy of refugee shelter by integrating participants from refugees, host communities and regional authorities to further benefit all end users. Another suggestion was raised from strong cultural and religious preference that refugees indicate the need for culture and context-sensitive shelter design. As seen in site observation refugees tend to modify and upgrade their shelter to make it sound to their context. Thus, refugee participation in shelter design is recommended as a solution to cultural adequacy.

#### **4.5 Summary of Findings**

The study to assess the adequacy of housing in terms of refugee camp context in Kebribeyah Refugee camp has revealed complex results.

##### **4.5.1 Historical Evolution and Current Physical Condition Shelter and Settlement in Kebribeyah Refugee Camp**

The demographic data of refugees in the survey show that 71.3% of them are aged 35 and above, indicating that they have spent their adult lives in camp setting. Of the respondents, 57% are female due to Somali cultural norms where women often head the household. 61.5% are found to be illiterate due to forced displacement, which affected their education in the process of finding suitable living environment. These effects also have influenced refugee perceptions, which they tend to prefer immediate solutions to their basic need rather than long-term adequate and durable solutions. Around 35.45 refugees came from Woqooyi Galbeed, which was a strong livestock economic generating place. Regardless of tenure rights and economic independence, refugees express their deep discontinuity between previous lifestyle and camp life. Despite 31.2% living in traditional Somali House, 39.3% lived in rural areas, and 47.8% have home ownership. Refugees

express attachment to the previous place, which provided greater cultural adequacy. Some refugees who lived in urban areas have been seen to have better awareness of infrastructure and shelter-based requirements.

The average household size was 8 members, with 73.2% being children below the age of 18. This shows that shelters are overcrowded and require careful planning to enhance the lack of privacy, safety, and gender-sensitive needs, especially for children, women, the elderly, and refugees with special needs. This further affects the Islamic cultural context, making the shelter inadequate. Among the different households, 34.1% and 28.9% of the members have completed primary and secondary education, respectively. Likewise, the data shows there exists a small number of members who require special needs and support.

Kebribeyah refugee camp was established in 1990s as a temporary site for refugees who were displaced from Somalia due to prolonged civil war in Somalia. The camp currently hosts over 20,000 refugees with significant growing percentage of 64.3% from 2018 to 2025. The refugee settlement is categorized into four administrative zones and nine sections. Refugees in Zone 1 to 3 have relatively better access to service compared to Zone 4, which is more disadvantageous in terms of access due to its location around the camp boundary line. The camp settlement shows an organic and amorphous shelter layout. Its topographic location makes the camp area prone to flood and erosion, violating Sphere Standards in site planning. Pathways within the camp are organic and unstructured narrow lanes below 3.5m in width. This indicates restriction on vehicular access, especially during emergency cases. Fire hazard that was recently registered in zone 3 reveals the access discontinuity and narrowness of the path. Refugees mostly use small vehicles like Bajage or use foot during for daily transportation due to poor accessibility and irregular street patterns. Camp streets are made of sand and mud, which makes worse for problems like erosion and flood during heavy rain. Concerning land use, the camp lacks a dedicated market area, but small informal commercial activities by the refugees themselves are found near the camp junctions.

Kebribeyah Shelter has evolved through time from emergency plastic tents to more durable mud and wood composite shelters; 33.4% of refugees initially were hosted by communal plastic tents. After a while, during transitional stage, 75.3% of refugee shelters were modified to private plastic tents with relatively durable materials. The camp settlement has shown a change from a temporary site to a long-term, where 51.1% of refugees who were born in the camp support the evidence

presented above. Around 49.7% of refugees live in shelters with single room lacking major program zoning challenge and overcrowding. Furthermore, 87.6% refugees highlighted how shelter spaces are inadequate, leading to privacy and cultural constraints. To meet their personal desire, some refugees often modify their shelters or add extension shelters for children's sleeping. This reflects that refugee's interest in shelter adaption to personal and cultural preferences despite the limited space and resources for modification. 88.8% and 93.85 of refugees responded to the separate location of the cooking area and public bathroom in the shelter outside the compound. Cooking areas are observed unsafe concerning the construction material such as wood or plastic that directly contribute to fire hazards. Regarding the overall shelter quality, 51.1 % of refugees labeled shelter space satisfaction as fair and about 30.6% as poor. The shelters lack major zoning clarity and structural instability and do not meet the minimum humanitarian standards such as the UNHCR Emergency Handbook and Sphere Standards.

Shelter units and plots are irregular in size and layout, with informal open boundaries or enclosed by bushes. Shelter Material used includes mud, plastic sheet, wood, garment fabric, and iron roofing. Shelters are usually vulnerable to natural or man-made hazards like heavy rain, wind, and fire. Also, they lack proper light and ventilation, pushing most domestic activities to be done outside shelter within the defended compound.

#### **4.5.2 Refugee Shelter Adequacy in Kebribeyah Refugee Camp**

The findings in the adequacy of shelter are sequentially present according to the adequacy of shelter indicator checklist.

##### *1. Security of Tenure –*

Refugees' perception towards tenure happened to be vague, referring to 71% and 44.2% of refugees believing that NGOs have tenure mandates regarding their shelter. Some refugees recognize that the land is owned by the Somali government. Despite the camp safety, refugees have reported a 21.1% satiation rate concerning fear of forced eviction by host communities due to land tenure claims. A member of the refugee has stressed her fear of daily violence that usually occurs from her neighboring host community, who have land tenure. These are not only visible to an individual camp member. The spatial analysis shows the co-existence of refugee shelters and host community hoses in similar plots. This overlap creates tension among dwellers and also vulnerability for the

refugees. According to other safety-related matters, refugees reported 28.9% satisfaction concerning harassment, which generally implicates a moderate sense of camp security.

## *2. Availability of Service*

The study shows that 36.4% of refugees have limited access to safe drinking water, and the majority of the communities rely on rainwater harvesting. Likewise, 70% of the refugees lack access to sanitation, cooking energy, light, and waste disposal. In terms of public service, 59.8% showed satisfaction with the availability of education centers. Public needs concerning security and market area are significantly limited when it comes to refugee camp. Overall, this shows that the camp has inadequate access to basic services.

## *3. Habitability*

Refugee shelters often have multi-functional rooms that are caused by a shortage of space. 49.2%, 48%, and 59.8% of refugees reported dissatisfaction with cooking space, sleeping space, and praying space. Due to the increased number of households size, shelters lack privacy and are found overcrowded. Women, children, the elderly, and disadvantaged groups often feel discomfort when it comes to privacy and cultural preferences. Shelters are to be 71.9% exposed to flood and 60.9% exposed to heavy rains due to their construction material inadequacy. Concerning thermal comfort, the shelter is generally rated as fair. Since construction materials are collected locally from trees and branches, refugees have reported high dissatisfaction in terms of partition, roofing, and wall material, with 69.9%, 71.6%, and 54.8% rates, respectively. Despite refugee's skills in traditional Aqal hose construction, shelters are observed to lack basic structural strength and durability. Since openings are neglected in shelter design, many shelters face poor ventilation and natural lighting transmission. According to functional and cultural preference, refugees value 36.3% living and 25.5 % prayer space. contrarily, Sleeping and cooking areas are placed last in space importance order. Refugees tend to personalize interior shelter space with decorative material, showing the need for cultural expression.

## *4. Accessibility*

Access to basic services is found challenging, especially for children and disadvantaged groups, because of improper pathways and topography of the camp settlement. 72.1% of refugees have some access to employment, which is usually informal or NGO-led initiatives. Services lack basic

design features that can promote disadvantaged grounds by inclusive means. Refugees with special needs tend to be challenged in accessing bathrooms, schools, and health centers where pathways are found to be organic and unsuitable for access. As a result, emotional stress has been perceived and reported by the elderly and children who are dependent on their family members.

To enhance refugee labor skills and knowledge vocational trainings have given as means of supporting and linking refugees to small business idea or employment opportunity. Remittance income is also found to be a significant means of income generation for some households.

### *5. Location*

Some public services like secondary school and health center are found in far proximity to refugee shelters since they are located outside the camp boundary. Concerning safety and shelter exposure to hazardous place, 86.5% of refugees reported their major concern regarding overcrowding, which further affects refugee quality of life. Because of poor shelter material and weak site planning, shelters are exposed to 67.4% of floods, 69.9% of epidemic diseases, and 66.6% of fire hazards. Furthermore, refugee shelters are 83.7% and 71.1% exposed to air and liquid pollution exposure, respectively. The main cause for shelter pollution is the camp's poor drainage and informal waste dumping and also the shelter's close proximity to toilet spaces. Despite robbery and prostitution being significantly low, some incidents like beggary, addiction, and physical abuse are found to exist in the camp premises due to lack of light and security at night time.

### *6. Cultural Adequacy*

Concerning Somaia Refugees' cultural and religious preferences, 96.15 of refugees are found to feel cultural inadequacy. Shelter layout, which fully neglects gender roles and privacy, needs to respect religious preference; refugees usually tend to make modifications and improvements in portion and extension of shelter space according to their cultural norms.

#### **4.5.3 Refugee Shelter Adequacy Enhancement Strategies**

The future expectance of refugees shows that 43% who believe there will be no improvement in shelter conditions while others think it will worsen (34% of refugees). Some refugees showed interest in slight shelter improvement. Despite the ongoing effort in the inclusion plan, which upgrades shelters and basic amenities, the growing refugee needs and population make the effort insignificant. Refugee hope often relies on continual support from NGOs or remittance gained

from family members and resettlement opportunities to third country. Even though the refugees have a protracted setting, they still tend to rely on external factors rather than local long-term solutions.

To enhance refugee shelter adequacy, both the refugees and the camp officials stressed the neglected legal framework regarding shelter rights. Officials mentioned that there is inconsistency among stakeholders shared responsibility when it comes to shelter provision, which lead to improper shelter governance. As a result, it is suggested that policy should be revised to incorporate refugee needs, host communities' wants, and regional authorities' prerequisites, in particular for protracted camp like Kebribeyah. On the other hand, refugees express the need for cultural integration in shelter design. To ensure its adequacy, they suggested direct involvement in shelter design and planning to enhance shelter cultural and religious preference.

The results from Kebribeyah reflect the gap between the theoretical concepts of sufficient, culturally appropriate, and durable refugee shelter and actual experiences encountered in coping with camp environments. In order to narrow this discrepancy: Planning of refugee camps and sustainable development measures must be localized and integrated to ensure effective implementation. Satisfactory housing criteria must be appropriately modified to account for prolonged displacement circumstances. Refugee voices need to lead participatory planning and design. Institutional and legal frameworks should be clarified and implemented to provide tenure security and equitable delivery of services.

## CHAPTER 5 CONCLUSION AND RECOMMENDATION

### 5.1 Conclusion

This study has explored the adequacy of housing in the Kebribeyah Refugee Camp through a comprehensive spatial, demographic, and socio-cultural analysis, integrating both empirical field data and theoretical benchmarks such as the UNHCR Emergency Handbook and Sphere Standards adapted for humanitarian housing and the UN-Habitat indicators for adequate housing. Adapted from conventional housing The findings reveal that while shelter provisions have evolved—from emergency tents to more permanent, self-modified mud-and-wood structures—the camp still suffers from critical inadequacies in housing design, infrastructure, services, safety, and cultural appropriateness.

The majority of the refugee shelters in Kebribeyah are overcrowded, structurally weak, and poorly zoned. With an average household size of eight, 49.7% of families live in single-room dwellings that fail to provide adequate privacy, safety, or culturally appropriate spaces, such as separate prayer or sleeping areas for different genders. Despite refugees' informal efforts to extend or adapt their shelters, these modifications are constrained by spatial limitations, lack of materials, and the absence of institutional support.

Habitability is further compromised by exposure to environmental hazards. Shelters are highly vulnerable to floods, erosion, wind, and fire due to the camp's poor site selection, inadequate drainage, and use of flammable or unstable construction materials. Shelter ventilation, natural lighting, and thermal comfort are significantly lacking, forcing many daily activities to be conducted outdoors within the compound space.

One of the most pressing issues identified is the lack of clarity regarding tenure security. Most refugees perceive shelter ownership as residing with NGOs or the Somali government, with only a small portion feeling secure from forced eviction. Spatial overlap between refugee and host community settlements exacerbates land-related tensions and introduces a persistent sense of vulnerability. Legal ambiguity and poor inter-agency coordination further undermine the long-term governance and accountability of shelter services.

Access to basic services—including clean water, sanitation, electricity, and waste disposal—is critically inadequate. Only 36.4% of refugees have access to safe drinking water, and over 70%

lack basic sanitation, energy, and lighting services. Education and health facilities, though partially available, are often located outside the camp boundary and are difficult to access, particularly for children, the elderly, and persons with disabilities due to the camp's topography and organic street layout. These infrastructural barriers further widen social and economic disparities within the camp population.

Cultural inadequacy is a pervasive theme, with 96.15% of respondents stating that their shelter does not align with Somali religious and cultural practices. The layout, materials, and functionality of shelter units ignore the gender-sensitive spatial norms embedded in Somali culture, which traditionally prioritize the separation of spaces for men, women, and prayer. Refugees attempt to bridge this gap by customizing their homes with decorative items and extensions, highlighting the importance of cultural identity and dignity in protracted displacement settings.

Despite Kebribeyah's protracted status—now over three decades old—there remains no formal transition from emergency humanitarian response to long-term, development-oriented shelter planning. The increasing population, inadequate infrastructure, and evolving needs of refugees have outpaced the limited scope of current policy interventions. Refugees remain primarily dependent on external assistance from NGOs, remittances, or the hope of resettlement to a third country. Few see the possibility of significant improvement in shelter conditions within the camp, and only a minority believe local solutions or self-reliance will suffice in the current setting.

The case of Kebribeyah Refugee Camp serves as a critical reflection of the global challenge of inadequate shelter in protracted displacement contexts. While international frameworks define adequate housing in terms of security, habitability, and cultural relevance, the reality on the ground often falls short. This study emphasizes that refugee shelter planning must evolve beyond emergency responses to a sustainable, participatory, and rights-based approach—one that places the voices, cultural identities, and long-term integration needs of refugees at its core.

## **5.2 Recommendation**

The study provides general recommendations for refugee camps globally, particularly those transitioning from emergency setups to long-term settlements. The recommendation aims to promote housing adequacy within the broader framework of Sustainable Development.

### **5.2.1 Specific Recommendation – Kebribeyah Refugee Camp**

Kebribeyah Refugee Camp requires significant transformation in planning, governance, and humanitarian strategies to promote sustainable development through adequate housing. Since the camp has transformed from an emergency shelter site to a long-term community site, the following recommendations are suggested to enhance the shelter adequacy and quality of life in the camp.

#### *1. Upgrading settlement planning*

Upgrading and improving shelters with durable, locally appropriate materials, durable construction techniques, and culturally acceptable design layouts. To enhance accommodation size of shelter, logical planning and design have to be done considering multiple interventions to address issues regarding overcrowding and privacy issues considering vulnerable groups like women, children and disables. Moreover, planning for regular shelter maintenance programs should be planned to ensure shelters are kept up to standard and suitable for living.

#### *2. Improving Shelter Quality*

Implementing a framework that promotes housing adequacy can enhance the shelter's livability and quality. This can be creating clear and transparent frameworks regarding ownership and tenure rights, reviewing existing refugee integration plans, and promoting community planning and design means will ensure balancing tensions between refugees and host community needs and minimize the risk of fear of forced eviction. To improve access to basic services in the camp, implementing a decentralization plan for the basic service camp ensures equal and balanced access to services and also introducing inclusive basic services can promote adequate accessibility for disadvantaged groups.

#### *3. Implementing adequacy of housing strategies*

Implementing a framework that promotes housing adequacy regarding can enhance the shelter livability and quality. This can be creating clear and transparent frameworks regarding ownership and tenure rights, reviewing exiting refugee integration plans and promoting community planning and design means will ensure balancing tensions between refugees and host community needs and minimize the risk off fear of forced eviction. To improve access to basic service in the camp

implementing decentralization plan for basic service camp ensure equal and balanced access to service and also introducing inclusive basic service can promote adequate accessibility for disadvantage groups.

#### *4. Revision or new development of refugee based policies*

Policies, frameworks, or different interventions should be introducing integration plan for refugee in host community area to develop their living condition and livelihood opportunities. Also, programs that focuses on refugee development in vocational training, employment opportunities and income generation mean. Moreover, involvement of refugees in decision-making process can bring better solutions in understanding refugee needs, cultural practices and aspirations.

### **5.1.2 General Recommendation**

#### *1. Refugee Camp Planning Should be Long Term*

Refugee camps should be planned not just for short-term, temporary responses but rather for long-term, durable solutions. Settlement Spatial Planning should incorporate refugee population growth, service demand, and land-use change to avoid overcrowding and irregular expansions of host communities' land. Participatory planning approaches that include refugees, and host communities are designed to be culturally and socially acceptable.

#### *2. Refugee shelters should be regularly upgraded and maintained.*

Shelter design should adhere to at least the standard guidelines, utilizing durable, culturally relevant, and context-driven materials and layouts. Additionally, to maintain its long life, shelters should be regularly maintained by the refugees themselves through supported training and community engagement.

#### *3. Strengthen Tenure security and Legal Frameworks.*

Tenure Rights and refugee-based legal frameworks should be clear and transparent to reduce tension between host communities and the risk of eviction. Additionally, the frameworks should promote refugee rights and their inclusion in spatial and housing development plans. This helps refugees in the local development plans and discussion-making by integrating refugees and host communities

#### *4. Improve accessibility to basic service*

Camp infrastructure should be decentralized with a hierarchical service distribution model to ensure equitable access for all refugees, including disadvantaged disadvantaged disadvantaged groups. Footpaths, roads, and public nodes should foster accessibility.

5. *Promote self-reliance and livelihood opportunities.*

To reduce continual dependency on aid, refugees should be introduced to various vocational training, entrepreneurship programs, and income-generation initiatives to promote refugees' self-reliance and independence.

In general, to address the growing reality of long-term displacement, refugee camps globally should evolve from temporary, aid-dependent shelters to resilient, inclusive, durable, and sustainable settlements. Integrating adequate housing principles into policy and practice, guided by field evidence from camps like Kebribeya, ensures the importance of permanent and sustainable solutions within the refugee paradigm.

## REFERENCES

- African Union. (2006). *Policy on Post- Conflict Reconstruction and Development*. Addis Ababa, Ethiopia: Conflict Management Division, Peace and Security Department, Commission of the African Union.
- United Nations. (1967). Article 11(1). In U. Nations, *International Covenant on Economic, Social and Cultural Rights* (p. 6). United Nations.
- United Nations. (1992). Agenda 21. *Conference on Environment and Development* (pp. 4-13). Rio de Janeiro: United Nations Division for Sustainable Development.
- A- UNHCR. (2018). *Shelter Projects 2017-2018*. Geneva: UNHCR.
- Abraha, G. (2013). An Assessment of Housing Policy and Real Estate Development. *Research Gate*.
- ACCORD, T. A. (2021). *Conflict Trends*. ACCORD.
- African Union. (2015). *Agenda 2063, The Africa We Want*. Addis Ababa: African Union.
- African Union. (2012). *Kampala Convention; African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa*. Addis Ababa, Ethiopia: African Union.
- Agier, M. (2002). Between War and City. . *Ethnography*, 317-341.
- Agier, Michel. (2011). *Managing the Undesirables - Refugee Camps and Humanitarian Government*. Cambridge: Polity Press.
- Alnwick, N. (1960). *A Study in Town Plan Analysis* . Newcastle: ORGE PHILIP & SON.
- Barbelet, V. (2018). *As local as possible, as international as necessary Understanding capacity and complementarity in humanitarian action*. London: Overseas Development Institute (ODI).
- Bender, S. T. (2010). The Handbook of Social Work Research Methods. In 2nd (Ed.), *Descriptive Studies* (p. 120). Los Angeles. London. New Dehli. Singapor. Washengoton DC: SAGE Publication.

- Betts, A., Bloom, L., Kaplan, J., & Omata, N. (2017). *Refugee Economies Forced Displacement and Development*. Oxford, United Kingdom: Oxford University.
- Brun, C., & Fabos, A. (2015). Making Homes in Limbo? A Conceptual Framework. *Refugee Canada's Journal on Refugees*, 31(1).
- Brundtland, G. H. (1987). *World Commission on Environment and Development*. Oslo.
- Bushnaq, Z. Z. (2021). TEMPORARY VS PERMANENT: ASSESSING THE METHODS USED IN THE IMPLEMENTATION OF REFUGEE CAMPS AND SETTLEMENTS IN JORDAN. *ProQuest Dissertations Publishing*.
- CBM International. (2018). *Humanitarian Hands-on Tool: Inclusion of Persons with Disabilities*. CBM Global Disability Inclusion.
- Chitereka, C. (2008). The impact of refugees on the environment; the case of Africa. *Rajagiri Journal of Social Development*.
- Clover, J. (2002). *SITUATION REPORT: REFUGEES AND INTERNALLY DISPLACED PEOPLE'S IN AFRICA*.
- Corsellis, T., & Vitale, A. (2005). *Transitional Settlement Displaced Populations*. Cambridge: Oxfam GB.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd Edition ed.). Los Angeles, London. New Delhi. Singapore: SAGE Publication.
- Crisp, J. (2000). Africa's Refugees: Patterns, Problems and Policy Challenges. *Journal of Contemporary African Studies*, 18(2), 157-178.
- CRRF, UNHCR. (2018). *Global update on the Comprehensive Refugee Response Framework*. Geneva, Switzerland : UNHCR.
- Davis, J. (2011). Planning in Disaster Recovery and Temporary Settlements. *Journal of Urban Design*.
- Devi, K. B. (2020). Case Study Method. In *Research Methodology and Fieldwork*. e-PG Pathshala INFLIBNET Center.

- DFID, D. f. (1999). *Sustainable livelihoods guidance sheets*. London: DFID.
- Donella H. Meadows, D. L. (1972). *The Limits to growth*. New York: Universe Books.
- Dryden-Peterson, S. (2011). *Refugee Education: A Global Review*. Geneva: UN High Commissioner for Refugees (UNHCR). Retrieved from <https://www.refworld.org/policy/strategy/unhcr/2011/en/91053> [accessed 08 June 2025]
- Elizabeth Parker & Victoria Maynard, . (2005). Humanitarian response to urban crises: a review of area-based approaches. *International Institute for Environment and Development*, 1-28.
- Federal Negarit Gazette. (2019). *Refugee Proclamation No. 1110/2019*. Addis Ababa: Federal Negarit Gazette.
- Ghebregergs, M. (2024, September 13). Out of camp and RLO support: two areas with potential to significantly improve Ethiopia's refugee response. London,UK: Refugee Law Initiative.
- Global Education Monitoring Report Team. (2018). *Global education monitoring report, 2019: Migration, displacement and education: building bridges, not walls*. Paris: UNESCO.
- Google Earth Satelliet. (2025, 4 8). Retrieved from <https://www.arcgis.com/apps/mapviewer/index.html?webmap=625da886dbf24a559da73840d293156d>
- Habitat, UN. (2021). *Keberibya Refugee camp Settlement Profile*. Geneva: UN Habitat.
- Hagen-Zanker, J., & Mallett, R. (2016). *Journeys to Europe: the role of policy in migrant decision-making*. Overseas Development Institute (ODI).
- IASC, I. A. (2021). *2021 IASC Guidance on Localization: Strengthening Participation, Representation and Leadership of Local And National Actors in IASC Humanitarian Coordination Mechanisms*. Global Protection Cluster.
- IDMC, I. D. (2022). *Global Report on Internal Displacement*. Geneva, Switzerland: IDMC, Internal Displacement Monitoring Center.
- IGAD. (2020). *The IGAD Support Platform Annual Report*. Digibuti : IGAD.

- International Labor Organization . (2024). *ILO strategy on extending social protection to migrant workers, refugees, and their families*. Geneva: International Labor Organization .
- IOM. (2021). *World Migration Report 2022* . IOM UN Migration.
- Jacobsen, K. (2005). *The Economic Life of Refugees*. Boulder: Lynne Rienner Publishers.
- Jansen, B. J. (2011). The Accidental City: Violence, Economy and Humanitarianism in Kakuma Refugee Camps, Kenya. *Urban Studies*, 48(2), 277-295.
- Jens-R Henkelmann, S. d. (2020). Anxiety, depression and post traumatic stress disorder in refugees resettling in high-income countries: A Systematic Review and Meta-Analysis. *SSRN Electronic Journal*, 6(4), 68-76.
- Kirk, J. (2006). *Education in emergencies: the gender implications; advocacy brief*. Bangkok: UNESCO.
- Leckie, S. (1989, October ). Housing and a Human Right. *Environment and Urbanization*, 1(2), 90-108.
- Lefebvre, H. (1991). *The production of Space*. Maiden: Blackwell.
- Lombard, M. (2014). Constructing ordinary places: Place-making in urban informal settlements in Mexico. *Progress in planning* , 1-53.
- Low, I. A. (1992). *Place Attachment*. New York: Plenum Press.
- Mallett, S. (2004). Understanding Home: A Critical Review of the Literature. *Sage Journals*, 62-89.
- Marutlulle, N. K. (2022). An Exploration of the Impact of Inadequate Housing on Health in South Africa. *Sabinet Africa Journals*, 30(4), 52-70.
- Migration, I. U. (2022). *World Migration Report*. Geneva: International Organization for Migration.
- Milner, Dr James. (2011). *Responding to protracted refugee situations: Lessons from a decade of discussion, Forced Migration Policy Briefing 6*. Oxford: Refugee Studies Center.

Retrieved from <https://www.refworld.org/policy/legalguidance/rsc/2011/en/78967>  
[accessed 08 June 2025]

Newman, O. (1972). *Defensible Space; Crime Prevention Through Urban Design*. United States: Macmillan.

Nicholas Crawford, J. C. (2015). *Humanitarian Policy Group HPG Commissioned Report, Protracted displacement: uncertain paths to self-reliance in exile*. London, United Kingdom: Overseas Development Institute.

Norwegian Refugee Council, N. (2023). *Housing, land and property in the context of climate change, disasters and displacement*. Norwegian Refugee Council (NRC).

Nussbaum, M. C. (2011). *Creating Capabilities: The Human Development*. *Hurvard University Press*, 31-2037.

O'Callaghan, S., & Sturge, G. (2019). *Against the Odds: Refugee Integration in Kenya*. In *Research Report World Commission on Forced Displacement* (pp. 290-326). Chumir Foundation for Ethics in Leadership.

OAU, O. o. (1969, September 10). *Convention Governing the Specific Aspects of Refugee Problems in Africa*. Retrieved May 28, 2025, from <https://www.refworld.org/legal/agreements/oau/1969/en/13572>

Philip Brown, S. G. (2022). *The Impact of Housing on Refugees; an evidence synthesis*. *Housing Studies*, 39(1), 227-271.

Project Gaia. (2015, December 21). *Project Gaia*. Retrieved from Project Gaia: [https://projectgaia.com/where-we-work-the-jijiga-camps/?utm\\_source=chatgpt.com](https://projectgaia.com/where-we-work-the-jijiga-camps/?utm_source=chatgpt.com)

Rania Aburamadan, C. T. (2020). *Designing refugees' camps: temporary emergency solution, or contemporary paradigms of incomplet urban citizenship? Insights from Al Za`atari*. *City, Territory and Architecture*, 1-12.

ReliefWeb. (2012). *Woqooyl Galbeed - Situation Analysis*. OCHA. Retrieved from <https://reliefweb.int/report/somalia/woqooyi-galbeed-%E2%80%93-situation-analysis-october-2012>

- Robert Gifford, L. S. (2007). *Environmental Psychology*. ResearchGate.
- Robert K. Yin. (2014). *Case study research: Design and methods. (5th ed.)*. CA: Sage: Thousand Oaks.
- RRS. (2023). *FDRE Refugees & Returnees Service*. Retrieved 05 28, 2025, from <https://rrs.et/>
- Ruggerio, C. A. (2021). Sustainability and sustainable development: A review of principles and definitions. *Science of the Total Environment*.
- Saraswati Dawadi, S. S. (2021). Mixed- Method Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education* , 2(2), 25-26.
- Schmidt, A. (2003). *FMO Thematic Guide: Camps versus settlements*. Forced Migration Online.
- Sen, A. (2000). *Development as Freedom*. New York : ALFRED A. KNOPF, INC.
- Sphere Association. (2018). *The Sphere Handbook: Humanitarian Charter and Minimum tandards in Humanitarian Response*. (f. edition, Ed.) Geneva, Switzerland.
- Strang, A. A. (2008). Understanding Integration: A Conceptual Framework. *Journal of Refugee Studies*, 166-191. doi:<http://dx.doi.org/10.1093/jrs/fen016>
- Tadesse Kassa, F. M. (n.d.). Ethiopia's Refugee Policy Overhaul: Implications on the out of Camp Policy Regime and Rights to Residence, Movement and Engagement in Gainful Employment. *African Jounals Online*, 124-184.
- Takase, C. (2018). *Implementing SDG 11 – key elements, challanges and opportunities*. Incheon, Republic of Korea .
- Teddlie, A. T. (2010). *SAGE Handbook of Mixed Methods in Social & Behavioral Research*. SAGE.
- Theis, T. (2022). Sustainability, AComprehensive Foundation. In T. Theis, *Sustainability, AComprehensive Foundation* (pp. 10-12). OpenStac CNX.
- Turner, J. (1977). *Housing by people: Towards autonomy in building environments*. New York, USA: Pantheon.

- Turner, S. (2016). What is a refugee camp? Exploration of the Limits and Effects of the Camp. *Journal of Refugee Studies*, 29(2), 139-148.
- UN Habitat . ( 2015). *A GUIDE TO ASSIST NATIONAL AND LOCAL GOVERNMENTS TO MONITOR AND REPORT ON SDG GOAL 11+ INDICATORS*. Nairobi : UN Habitat.
- UN Habitat . (2024). *Development of a framework for measuring and reporting on the adequacy of housing across diverse national and local contexts*. Geneva, Switzerland : UN.
- UN Habitat. (2008). *Ethiopia Urban Profile*. Nairobi, Kenya: United Nations Human Settlements Programme (UN-HABITAT).
- UN Habitat. (2014). *Annual Progress Report 2014, Implementation of the Strategic Plan (2014-2019)*. Nairobi, Kenya: UN Habitat (United Nations Human Settlements Programme).
- UN Habitat. (2014). *The Right to Adequate Housing Fact Sheet No. 21/ Rev. 1*. Geneva: Office of the United Nations High Commissioner for Human Rights.
- UN Habitat. (2018). *SDG Indicator 11.1.1 Training Module: Adequate Housing and Slum Upgrading*. Nairobi: United Nations Human Settlement Programme (UN-Habitat).
- UN Habitat. (2020). *Kebribeyah Settlement Profile, Somali Region, Ethiopia*. Geneva: UNHCR, UN Refugee Agency.
- UN Habitat. (2023). *Inclusive Cities: Enhancing the Positive Impact of Urban Migration*. Nairobi: UN Habitat.
- UN Refugee Agency . (2022). *Strategic Direction 2022-2026*. Geneva: UNHCR .
- UN Women. (2021). *UN Women Humanitarian Strategy (2022-2025) in Brief*. New York: UN Women.
- UN-Habitat. (2011). *A PrActicAl Guide for conducting: Housing Profiles*. Retrieved 05 08, 2025, from <http://www.unhabitat.org/>
- UNHCR . (2014). *The Right to Adequate Housing Fact Sheet 21*. Geneva: United Nation.
- UNHCR. (2006, July). *Kebribeyah Camp Overview*. Nairobi, Kenya: Regional Spatial Analysis Lab .

- UNHCR. (2007). *Handbook for Emergencies*. (t. edition, Ed.) Geneva: UNHCR.
- UNHCR. (2011). *Resettlement Handbook*. Geneva: UNHCR, Division of International Protection.
- UNHCR. (2013). *Global Shelter and Settlement Strategy, 2014-2018*. Geneva, Switzerland: UNHCR.
- UNHCR. (2014). *Shelter Design and Planning in Camps*. Geneva: UNHCR.
- UNHCR. (2018). *Kebribeyah Camp Profile* . Geneva: UNHCR. Retrieved from <https://data.unhcr.org/en/documents/details/62682>
- UNHCR. (2018). *The Global Compact on Refugees*. Geneva, Switzerland: UNHCR.
- UNHCR. (2019). *Global Trends, Forced Displacement in 2018*. Geneva,Switzerland: UNHCR.
- UNHCR. (2019). *Working with persons with disabilities in forced displacement*. Geneva: UNHCR.
- UNHCR. (2021). *Ethiopia GRF Pledge Progress Report*. Geneva, Switzerland: UNHCR.
- UNHCR. (2021). *Global Compact on Refugees Indicator Report* . Geneva, Switzerland: UNHCR.
- UNHCR. (2021). *UN Refygee Agency*. Retrieved from <https://www.unhcr.org/afr/africa.html>
- UNHCR. (2022). *Global Trends; Forced Displacement in 2021*. Copenhagen, Denmark: United Nations High Commissioner for Refugees (UNHCR).
- UNHCR. (2022). *Mid Year Trends*. Copenhagen, Denmark: UNHCR Global Data Service. Retrieved from <https://www.unhcr.org/refugee-statistics>
- UNHCR. (2023). *Kebribeyah Inclusion Roadmap (2023-2027) Building Resilience Together*. OCHA, United Nation Office for the Coordination of Humanitarian Affairs. Retrieved from <https://reliefweb.int/report/ethiopia/kebribeyah-inclusion-roadmap-2023-2027-building-resilience-together>
- UNHCR. (2024). *Ethiopia Operational Update* . Geneva, Switherland : UNHCR.
- UNHCR. (2024). *Ethiopia: UNHCR Operational Update, June 2024*. Geneva: UNHCR.
- UNHCR. (2025). *Operational data portal (ODP)*. Geneva: UNHCR.

- UNHCR, U. N. (2023). *Ethiopian Refugee Respose Plan*. Copenhagen, Denmark: United Nation Higer Commissionaer for Refugee (UNHCR).
- United Nations . (2016). *The Sustainable Development Goals Report 2016*. New York : United Nations .
- United Nations. (2002). *Report of the World Summit on Sustainable Development*. Johannesburg, South Africa: United Nations.
- United Nations. (2015). *Transforming Our World, The 2030 Agenda for Sustainable Deveopment* . New York: United Nations.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.
- United Nations. (2018). *Global Compact on Refugees*. New York: United Nations.
- United Nations. (2018). *Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation*. New York: United Nations.
- Vitale, T. C. (2005). *Transitional settlement displaced populations*. Cambridge, England: OXFam GB.
- World Bank Grop. (2019). *Sustainable Development Goal 10 – Reduced Inequalities:Progress and Prospects*. Geneva: World Bank Group.
- World Bank Group . (2023). *Global Database of Shared Prosperity*. World Bank .
- World Bank Group. (2016). *Forced Displacement and Development*.
- World Bank Groups. (2019). *Forcibly displaced : Toward a development approach supporting refugees, the internally displaced, and their hosts*. World Bank Group.
- World Health Organization & World Bank. (2011). *World report on disability*. Malta: World Health Organization.
- Xiaolong Gan, J. Z. (2019). Exploring the Adequacy of Massive ConstructedPublic Housing in China. *Sustainability*, 1-17.

Yu, C. T. (2007). Mixed Method Sampling; A typology with Examples. *Journal of Mixed Method Research, 1*(1).

Zetter, R. (2021). Shelter and Settlement for Forcibly Displaced People . In *International Encyclopedia of Housing and Home* (pp. 330-335). Oxford : Elsevier Ltd.

# ANNEXS

## Annex I: Publishable Manuscript

### Assessing the Spatial Characteristics and Adequacy of Housing in Refugee Camp: The case of Kebribeyah Jijiga Refugee Camp

<sup>a</sup>Keniko Duguma Guta, <sup>b</sup>Yonas Alemayehu Soressa, and <sup>b</sup>Biruk Kebede Geletu

*Department of Urban and Regional Planning (DURP), College of Technology and Built Environment (CTBE), Addis Ababa University, Addis Ababa, Ethiopia*

[Keniko.duguma.edu@gmail.com](mailto:Keniko.duguma.edu@gmail.com)

May 2025

**Abstract:** *Refugees often face numerous challenges when seeking suitable housing in host countries. Despite the importance of housing in ensuring the dignity and well-being of refugees, a significant issue persists regarding the adequacy of housing in refugee camps, which remains unresolved over time. This research assesses the spatial characteristics and adequacy of housing in a refugee context, particularly in the Kebribeyah refugee camp in Jijiga, Ethiopia, through a combination Descriptive and Exploratory research approach with mixed method. Surveys, Interviews, and Spatial Analysis were used to provide comprehensive data on housing adequacy by integrating both lived experiences and physical camp conditions. The research findings show that the majority of shelters are overcrowded, dilapidated, and prone to various environmental hazards. The camp settlement exhibits an organic and amorphous pattern, which limits access to basic services, including safe drinking water, sanitation, and energy. Despite the long-established history of the camp, the tension between host communities and refugees in land tenure persists, contributing to the fear of forced eviction. Overall, the camp is affected by overcrowding, poor housing conditions, and limited access to basic services. In conclusion, the Kebribeyah refugee camp faces significant challenges in providing adequate shelter for refugees who have resided in the camp for over three decades. Therefore, based on the research findings, it is recommended that an intervention be implemented to support community- and expert-driven shelter construction and settlement planning, with a balanced distribution of basic services and integration of host communities through a defined framework, to enhance sustainable development through housing adequacy.*

**Keywords:** Adequate Housing, Refugee, Refugee Shelter, Refugee Settlement

---

<sup>a</sup> **Keniko Duguma Guta** - School of Built Environment (SBU), College of Technology and Built Environment (CTBE), Addis Ababa University. Email – [keniko.duguma.edu@gmail.com](mailto:keniko.duguma.edu@gmail.com)

<sup>b</sup> **Yonas Alemayehu Soressa** Department of Urban and Regional Planning (DURP), School of Built Environment (SBU), College of Technology and Built Environment (CTBE), Addis Ababa University Email - [yonas.alemayehu.hasd@gmail.com](mailto:yonas.alemayehu.hasd@gmail.com)

<sup>b</sup> **Biruk Kebede Geletu** Department of Urban and Regional Planning (DURP), School of Built Environment (SBU), College of Technology and Built Environment (CTBE), Addis Ababa University Email - [biruk.kebede.housing@gmail.com](mailto:biruk.kebede.housing@gmail.com)

## **1. Introduction**

In recent years, the number of forcibly displaced people has become a growing concern, particularly in relation to sustainable development. The consequential increase in the number of refugees seeking shelter and protection has led to a global refugee crisis. According to the United Nations High Commissioner for Refugees (UNHCR), there were more than 100 million forcibly displaced people worldwide in mid-2022. (UNHCR, 2022).. The provision of adequate housing is a critical aspect of refugee camp management, as it has significant implications for the physical and emotional well-being of refugees. Since Ethiopia is one of the largest refugee hosting countries in Africa. Kebribeyah Refugee Camp—one of the oldest in Ethiopia—has evolved from a temporary solution into a semi-permanent settlement marked by unstructured growth, overcrowding, and inadequate shelter. This study aims to assess the adequacy of housing in Kebribeyah Camp by analyzing its spatial characteristics, construction methods, and refugee experiences, using international standards as a benchmark. The findings of the study will inform policymakers, humanitarian organizations, and practitioners about the specific challenges and potential strategies for improving housing conditions and promoting sustainable development in refugee camp. General Objective is to investigate the adequacy of housing in Kebribeyah Refugee Camp through spatial and structural analysis. With specific Objectives of Explore the historical evolution and current shelter layout in Kebribeyah, Evaluate the adequacy of current shelter and settlement patterns based on international indicators, and Recommend strategies to improve housing adequacy in Kebribeyah and similar refugee camps.

### Research Questions

- What are the spatial characteristics of housing and settlement patterns in Kebribeyah Refugee Camp?
- How adequate is the housing in Kebribeyah based on international standards?
- What strategies can improve spatial planning and housing adequacy in the camp?

The thematic scope of this study is on adequate housing in Kebribeyah, Jijiga Refugee Camp which is critical aspect of achieving sustainable development. In adequacy of housing refugee shelters will be analyses with the six indicators leaving affordability the seventh indicator. Affordability is not included in the study considering refugee context as shelters and other basic needs and services are aid based provision. The spatial scope of this study is specifically focused on Kebribeyah, Jijiga Refugee Camp in Ethiopia, with a detailed investigation on adequacy of housing of the refugee camp. Since the study's only focus on a single refugee camp the finding may not be representative of other refugee camp or settings with different context. Also, during field visit and desk review proper boundary of the camp was difficult to find which further led to the researcher decision in highlighting the boundary referring to repeated boundary lines found from UNHCR Kebribeya – Camp overview map as of July 2006 & UN Habitat report on Kebribeyah settlement profile.

## **2. Literature Review**

### **2.1 Theoretical Review**

According to Brundtland (1987) definition of “sustainable development is development that meeting the need of the present without compromising the ability of the future

generation to meet their own needs” (Brundtland, 1987). A comprehensive action plans, implementation strategies and frameworks were developed through the year to further enhance the sustainability theory and its application. The action plan in involved integration of economic growth with social equity and environmental growth to encourage the implementation globally ( United Nations, 1992). Furthermore, a comprehensive framework consisting of 17 Sustainable Development Goals was introduced to have a sustainable and equitable world. (United Nations , 2016). The most significant goals in relation to refugee context are Goal 1 No poverty, Goal 6 Clean Water and Sanitation, Goal 10 Reduced Inequalities and Goal 11 Sustainable cities and communities.

**Sustainable Development in Refugee Shelter Context** People who are forced to displace across the border of their home country due to natural or manmade disasters are known as refugees (Clover, 2002). The theory of sustainability in refugee context prioritizes long term planning since the traditional approach was for short term and only providing immediate response for survival (UNHCR, 2019). Self-reliance, livelihood opportunities, local integration, voluntary repatriation and resettlements can be means for sustainable development approaches (Crawford, Cosgrave, Haysom, & Walicki, 2015).

Refugee shelter and settlement response are initially planned to be temporary use, but many refugee camps fail and become semi-permanent for more than a decade leading to long term planning issues (UNHCR, 2022). Hence this will further lead to overcrowding, resource exploitation and environmental degradation resulting in a direct relation with Environmental Sustainability (Vitale, 2005). Furthermore to minimize the environmental impact shelter designs and

settlements should incorporate use of local material (UN Habitat, 2014). According to Sphere handbook refugee shelters need to respect contextual background of the dwellers to promote inclusion and social cohesion which relates to Social Sustainability (Sphere Association, 2018). As a result of their long-term planning refugees also need to be independent after a certain period of time by having different livelihood opportunities like income generation, employment opportunities, vocational training and education which further fosters the local economic growth and integration with host community to promote economic sustainability (World Bank Group, 2016)

**Adequate Housing Theory** According to Turner (1977) housing is the physical structures or buildings that provide shelter and involved in creating dwellers and the relationships within them (Turner, 1977). The lack of adequate housing has severe consequences for people's health, safety, and social well-being, and that it extends poverty and inequality (Leckie, 1989). Further on the discussion the effect of inadequate housing which can result in restriction to basic needs and services has impact on human development (Nussbaum, 2011).

In addition, adequate housing goes beyond just providing a physical structure; it must also meet the physiological, psychological, health, and security needs of its occupants (Xiaolong Gan, 2019). Adequate housing is also a social fabric where dwellers create a sense of belongingness and build their socio-cultural identity. UN-Habitat has outlined several criteria for housing to be considered adequate, including security of tenure, availability of services and infrastructure, affordability, habitability, accessibility, location, and cultural adequacy. These have been categorized as physical and nonphysical aspects (UN Habitat, 2018).

Refugee Housing and Settlement Theories  
Refugee housing is a critical issue to ensure refugee's survival by providing security and safety, protection from the climate, and resistance to ill health and diseases. As Bushnaq (2021) presented refugees are usually housed in refugee camp built by the United Nations High Commissioner for Refugees (UNHCR) following the host government. The current form of these camp relies on the notion that these spaces are temporary (Bushnaq, 2021). As shelter and settlements are inter connected considering shelter as a household living space with necessary thing for daily life and settlement as a wider location where this households live collectively as a community (Sphere Association, 2018). As a result, refugee settlement has dynamic stages as it tends to evolve within time. The concept of refugee camp and settlement has no collective argument. Shelters and settlements have been described as a temporary, transient, city – camp, semi-permanent, spaces created “between war and city” (Agier, 2002).

Refugee Shelter and Settlement Response Theory According to UNHCR refugee shelters and settlement response are categorized as emergency response where immediate response to a disaster is given, transitional shelter where the immediate response transit to a semi-permanent and lastly durable shelter where a long-term response is applied in shelter and settlement context (UNHCR, 2007)

In contrary refugee camp and communities remain in place far longer than predicted and refugee housing could become semi-permanent assets for the community. According to Zatter (2021) refugees are like urban migrants who consolidate their housing like in informal settlements of cities (Zetter, 2021). They adapt, customize and upgrade their shelters as more durable and long-

lasting physical assets. (Rania Aburamadan, 2020).

Spatial Settlement Theories highlight Centralizing camp formation to enhance delivery of service effectively where decentralization promotes independence (Vitale, 2005). On the other hand, planning can be made with grid or cluster formation. The grid emphasizes uniform layout organization to maximize effective use of infrastructure and service whereas the clustered formation group household in manageable zoning that promotes social cohesion and administrative advantage (Davis, 2011).

Space and Design Theories indicates social relation and power that can be reflected by space, as a result refugee camp are place that create identity and belongingness (Lefebvre, 1991). In contrary camp are perceived as political agenda that often restrict and control livelihood opportunities which affects dignity and integration with host community (Agier, Michel, 2011).

Thus, camp can apply defensible camp setting design where safety and security can be achieved for refugees especially for women, children and vulnerable groups (Newman, 1972). Besides that, as space has psychological attachment to the dwellers (Low, 1992). Lombard noted in urban planning, a place is considered as a socio-spatial construct combining both physical and social elements that result from an understanding of the physical environment with psychological attachment to people. (Lombard, 2014).

Refugee integration encompasses social, economic, cultural and legal where the host community engagement is essential for social cohesion and community-based development (Strang, 2008). Localization on the other hand includes refugee involvement in basic decision-making process like shelter design,

settlement and livelihood opportunities where this can foster sustainability, sense of ownership and cultural acceptance. (Barbelet, 2018)

## 1.2 Contextual Review

The global refugee statistics shows that over 117.3 million people are forcibly displaced worldwide where 31.6 million are refugees (UNHCR, 2019).

Global Frameworks and Guidelines on Refugee Housing There is sustainable solution that includes a complete life changing solution to improved solution of integration and inclusion. Refugee Resettlement –is where refugees are selected and transfer to third country that is willing to give them permanent residence permit. Humanitarian Corridors – where refugees pass to third country in safe and legal means by the help of non-governmental organization providing protection and humanitarian based visa to vulnerable groups. (Migration, 2022). Refugee Compact- is refugee integration approach where refugee self-reliance is encouraged, host community burdens are shared, third country solutions are created and return plan to country of origin is planned (UNHCR, 2018).

As a global framework and standard there are also various guidelines regarding refugee housing. Such as UNHCR Emergency handbook, Sphere Standards. Inter- Agency Standing Committee Guidelines (IASC) framework highlights coordination between shelter needs and protection. In addition, Comprehensive Refugee Response Framework (CRRF) a strategy that include adequacy of housing and community integration as a means of long term and inclusive solution (United Nations, 2018). More on international frameworks Sustainable Development Goals – among the different goals SDG 11 promotes refugee

inclusion in creating human settlement as inclusive, safe, resilient and sustainable solution with adequate housing and access to basic service (United Nations, 2015).

Refugee Situation in Africa According to UNHCR statics more than 30% of global refugee populations are hosted by African countries like Ethiopia, Uganda, Sudan and Kenya (UNHCR, 2019).

Regionally Africa has its first policy document named as Organization of Africa Unity, OAU Convention in 1969 which focuses on governing specific topics in Refugee Problems in Africa (OAU, 1969). The convention starts by redefining the definition of refugee stated in 1951 Refugee convention which was defined as “someone who owing to a well-founded fear of persecution, is outside their country of nationality and is unwilling or unable to return to it”. Following that AU Policy Framework on Post Conflict Reconstruction and Development (PCRD) highlights the need for inclusive shelter and urban development as means of post conflict rebuilding techniques by refugee integration in planning and provision of basic service ( African Union, 2006). The Kampala Convention in 2012 which is the first legally binding document mainly focuses on the host country responsibility in refugee protection and assistance (African Union, 2012).. Furthermore, AU framework called Agenda 2063 which promotes inclusive development for refugees, emphasizes resilience of housing, infrastructure and sustainable development in refugee settlement (Africa Union, 2015)

Refugee Situation in Ethiopia Ethiopia is currently hosting more than one million refugees and asylum seekers majorly from Sudan, Somalia and Eretria (UNHCR, 2024) . The majority of refugees live in 24 refugee camp established across the five regional

states including Keribeyah Refugee camp found in Somali Regional State.

Referring to Ethiopia long standing history of hosting refugees, the country has developed different policy frameworks regarding refugees which align with international refugee laws and the global compact on refugee rights. According to Refugees Proclamations No. 1110/2019 a developing law for refugee’s rights to get proper documentation, access education, and access to health service, employment and housing and freedom of movement which are mentioned as a guiding law to protect the refugee rights (Federal Negarit Gazette, 2019). More on freedom of movement the country has a supportive policy called Out of Camp Policy (OCP) which allows refugees to live outside camp if they are capable of supporting themselves and properly registered under Ethiopian Refugee and Returnees Service (Tadesse Kassa). Despite the policy being developed and implemented there are still more than 90% refugee who are living in the camp setting (Ghebregergs, 2024). To support refugee self-reliance and freedom from aid the country implements Comprehensive Refugee Response Strategy (CRRF) which allows refugees to access national service and integration with national development plans (CRRF, UNHCR, 2018). Furthermore, as a main role player in the Global Compact on Refugees Ethiopia is one of the countries that is proactively recognizing refugee protection policies internationally and nationally (UNHCR, 2021).

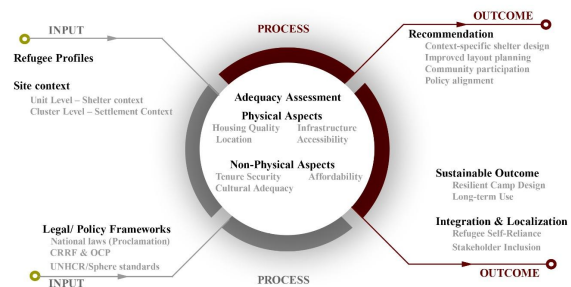


Figure 0-1 Contextual Framework Diagram

### 3. Materials and Methods

According to the nature of the problem and the research objective which is derived from a complex setting such as refugee shelter and adequacy of housing; the research requires multiple research method to capture different dimension like social, political, cultural and environmental setting of refugee. As a result, the study has employed three interrelated methods known as Descriptive Research, Mixed Methods and Case Study Approach. In using these methods this study particularly benefits in creating a coherent and comprehensive research framework. Descriptive research basically acts as a fundamental approach for this study by extracting its data from observation and documenting different aspects at its existing circumstance (Bender, 2010). Here observation can be made by the researcher, refugees, and key informants like RRS, UNHCR & other NGO’s officials as a base for understanding the physical existence of shelter and settlement within the camp and refugees daily experience. Documentation on the other hand includes description of what currently exist in Kebribeyah Refugee camp focusing on refugee housing system formation and characteristics (Bender, 2010). Thus, to enhance the descriptive research method an integral method of both qualitative

and quantitative data is used. To gain various benefits regarding offering logical ground, methodological flexibility and in depth understanding of the study employs *Mixed Method research design* combining both qualitative and quantitative method to provide a comprehensive understanding of research problem. (Saraswati Dawadi, 2021) (Creswell, 2009). The qualitative method explores refugee perception and experience in relation to adequacy of shelter where the quantitative method assesses the seven indicators of adequacy of housing in terms of their shelters. In addition to gain more information about a particular area like Kebribeyah Refugee camp and to obtain a comprehensive understanding of the social and spatial unit **Case Study Method** have been employed to further supporting both the descriptive and mixed methods. (Devi, 2020). Finally, the implantation of all the three methods enables the researcher to have a holistic analysis that can reinforce the study validity and reliability (Teddlie, 2010).

**Description of Study Area** The research study area is Kebribeyah Refugee camp located in Kebribeyah town, with in Fafan zone of Somali regional state in Eastern Ethiopia.

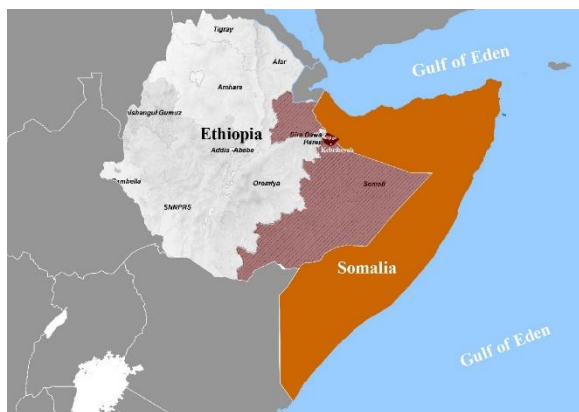


Figure 0-2 Keberibeya Refugee Camp Location Map

The camp is located 50kms Southeast of Jijiga and 700km from Addis Ababa the

capital city of Ethiopia. The camp location is environmentally characterized as semi-arid region with high temperature, limited vegetation low and unpredictable rainfall which makes the area prone to drought and water shortage.

Kebribeyah Refugee camp is one of the oldest refugee camp in Ethiopia which was established in 1991 (UNHCR, 2024).The camp was formed as a rapid response to the sudden influx of Somalia citizens following the escalation of Somalia Civil war in 1990s. (Project Gaia, 2015). At the start the camp was intended to as a temporary site for returnees but due to clan-based tensions a group of refugees were resettled in the camp which further leads to permanent settlement beyond its original plan. (Habitat, UN, 2021). Gradually the camp began to evolve as a long-term settlement area which is currently hosting more than 20,000 Somalian refugees for over three decades.

Considering Kebribeyah refugee camp old history the camp further presents an exclusive case that help the study in achieving its objective. The camp has a characteristic of stable but wide population density that have prior experience on all refugee response phase. Therefore, the protracted setting of the camp has significant effect in achieving the research objectives and goals to assess adequate housing in refugee camp. Also, due to its ongoing shelter and other infrastructural challenges that have been unresolved for over three decades highlights its practical significance to study interventions and improvement in adequacy perception.

The sampling techniques used for this study to conduct the case study and semi structure interview were purposive sampling which is a type of non-probability sampling where the researcher intentionally selects participant based on specific characteristics or criteria (Yu, 2007) and Stratified Random Sampling

to select participants for surveys within refugee settlements. The settlements will be stratified based on factors such as population size, geographical location, and level of services available. From each stratum, a proportional number of households will be randomly selected.

As of March 2025, the total population size of Kebribeyah refugee camp is 20,172. (UNHCR, 2025) Since the study focuses on adequacy of housing the sampling unit used was the individual household within the camp which are basically assessed at household level rather than individual level. According to UNHCR (2025) the average household size of Kebribeyah refugee camp is 6 people per household which leads to 3362 households (sampling units) (UNHCR, 2025). Data Source

The study used both primary and secondary data source, where the primary data was extracted from Kebribeyah refugees, Field visit/ onsite observation and Key informants such as RRS and UNHCR Kebribeyah Refugee camp officials, and Refugee community coordinators. The secondary data was sourced from government and non-governmental agencies responsible for managing refugee camp such as RRS, UNHCR, and UN Habitat official reports, datasets on refugee population statistics, demographic data, maps and policy documents. Also, academic research and review like journal articles, theses and reports focusing on adequacy of housing and refugee shelters were another source of data collection means.

The study has employed a mixed method data collection techniques to erasure in depth understanding of refugee housing in terms of adequacy. Quantitative data was collected by Survey Questioner for 356 refugees who are registered in Kebribeyah Refugee camp was conducted to gain measureable data of refugee living condition, housing

satisfaction, compound perception and housing need as a means to support the qualitative data. The survey questions were both closed ended (Likert Scale) and semi structured questions.

The qualitative data was collected by using various instrument to ensure methodological precision in data collection and analysis. The instrument included interview, focused group discussion, Observation, case study and archive document analysis. In depth Interviews was conducted with 10 refugees whose shelters are further selected as a case study for spatial analysis. The interview was made to gain refugee living experience and understand their camp environment. The questioner for the interview was open ended semi structured interview conducted in their suitable area to speak freely. Other in-depth interview was conducted with key informants that are directly related to Kebribeyah Refugee camp.

The data presentation techniques are tables, charts and graphs with statistical summaries showing frequency and percentage. The qualitative data analysis techniques are mainly thematic and content analysis where repetitive patterns in individual answer were analyses and housing experience and spatial narratives are explored. The qualitative analysis are presented in verbatim quotes or word clouds to support quantitative data and thematic issues. Finally, the Spatial data collected by observation and desk review will be analyses by Spatial Urban morphological Analysis where the presentation will be dichromic and synchronic analysis using spatial mapping techniques (Alnwick, 1960). Spatial documentation was analyzed by mapping, spatial configuration, overlaying, comparative spatial analysis and photo. The presentation here was sketches, maps, diagrams and annotated architectural plans, elevations and sections. In general, the data is presented in sequential order in a way that

answers the research questions and support the adequacy indicator list. Thus, the above data analysis and presentation will be inserted in all relevant place of each topics supporting and further narrating what one method have discover through the data.

#### 4. Results and Discussion

##### Overview of Kebribeyah Refugee Camp

**Respondent Profile** The demographic data of refugees in the survey show that 71.3% of them are aged 35 and above indicating that they have spent their adult lives in camp setting. From the respondent 57% are female due to Somali cultural norms where women often be head of household. 61.5% are found to be illiterate due to the forced displacement which affected their education in the process of finding suitable living environment. This effects also have influenced refugee perceptions which they tend to prefer immediate solution to their basic need rather than long term adequate and durable solution.

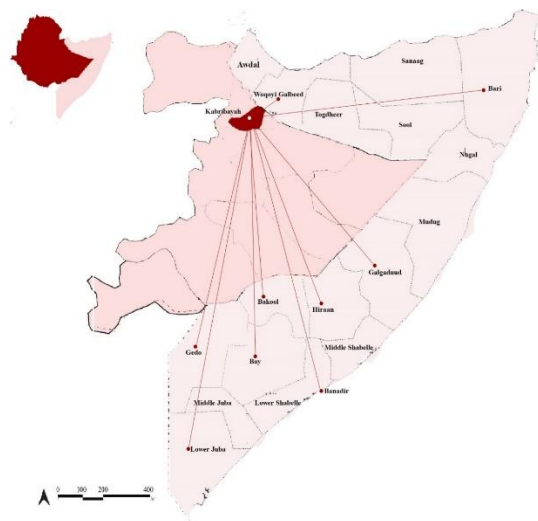


Figure 0-3 Refugee Area of Origin Map

Around 35.45 of refugees came from Woqooyi Galbeed which was strong livestock economic generating place. Regardless of tenure rights and economic

independence refugee express their deep discontinuity between previous lifestyle and camp life. Despite 31.2% lived in traditional Somali House, 39.3% lived in rural area, and 47.8% have home ownership refugees express attachment to the previous place which provided greater cultural adequacy. Some refugees who lived in urban area have been seen to have better awareness in infrastructure and shelter based requirements.

##### Household Profile

The average household size was 8 members with 73.2% being children below the age of 18. This shows that shelters are overcrowded and require careful planning to enhance lack of privacy, safety, and gender sensitive needs especially for children's, women, elderly and refugees with special need. This further affects the Islamic cultural context making the shelter inadequate.

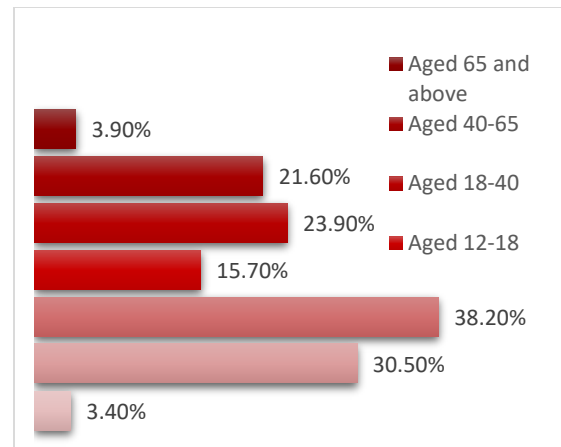


Figure 0-4 Household age group

Among the different households 34.1% and 28.9% of the member have completed primary and secondary education respectively. Likewise the data shows there exist small number of members who require special needs and support.

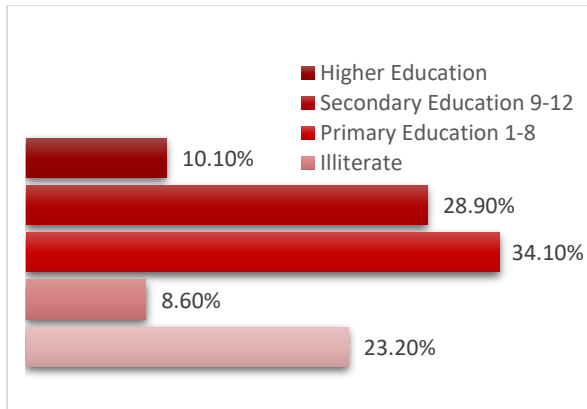


Figure 0-5 Household Education Level

### Refugee Shelter and Settlement in Kebribeyah Camp

**Refugee Settlement** Kebribeyah refugee camp was established in 1990s as a temporary site for refugees who are displaced from Somalia due to prolonged civil war in Somalia. The camp currently hosts over 20,000 refugees with significant growing percentage of 64.3% from 2018 to 2025.

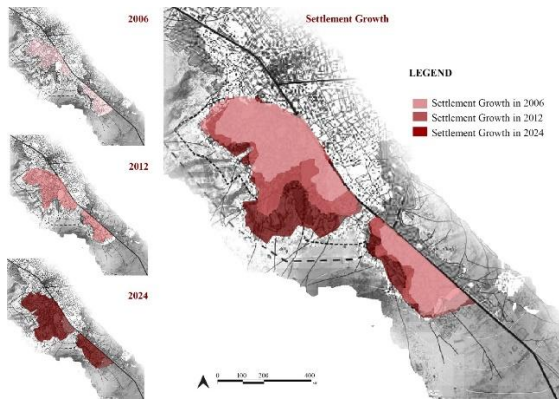


Figure 0-6 Settlement Growth Map

The refugee settlement is categorized in to four administrative zones and nine section. Refugees in Zone 1 to 3 have relatively better access to service compared to zone 4 which is more disadvantage in terms of access due its location around the camp boundary line. The camp settlement shows organic and amorphous shelter layout. Its topographic location makes the camp area prone to flood

and erosion violating Sphere Standards in site planning.

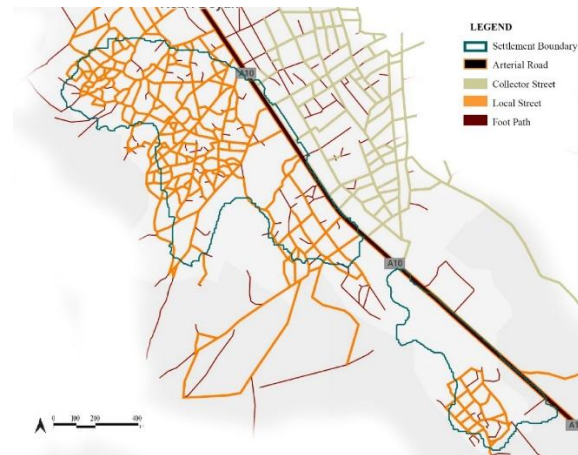


Figure 0-7 Street Network Map

Pathways within the camp are organic and unstructured narrow lanes below 3.5m width. This indicates restriction on vehicular access especially during emergency case. Fire hazard that recently registered in zone 3 reveals the access discontinuity and narrowness of the path. Refugees mostly use small vehicles like Bajage or foot during for daily transportation due to poor accessibilities and irregular street pattern.

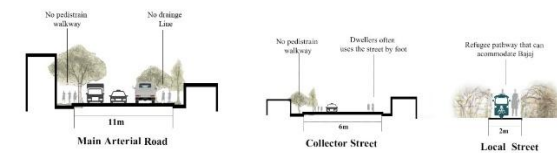


Figure 0-8 Street Section

Camp streets are made of sand and mud which makes worse for problems like erosion and flood during heavy rain. Concerning land use the camp lack dedicated market area but small informal commercial activities by the refugees themselves are found near the camp junctions.



Figure 0-9 Street Accessibility in Kebribeyah Camp

**Refugee Shelter** Kebribeyah Shelter has evolved through time from emergency plastic tent to more durable mud and wood composite shelter, 33.4 % of Refugee initially were hosted by communal plastic tents. After a while during transitional stage the 75.3% refugee shelters were modified to private plastic tents with relative durable materials. The camp settlement have shown a change from temporary site to a long term were 51.1% of refugees who were born in the camp supports the evidence presented above.

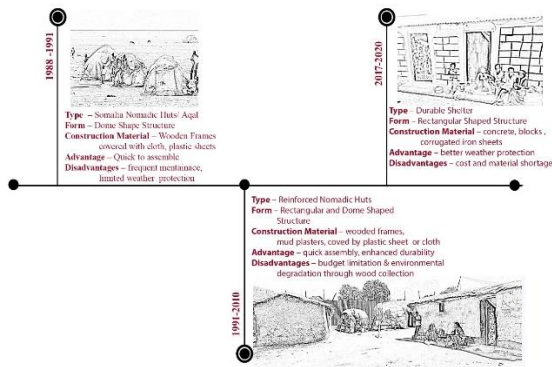


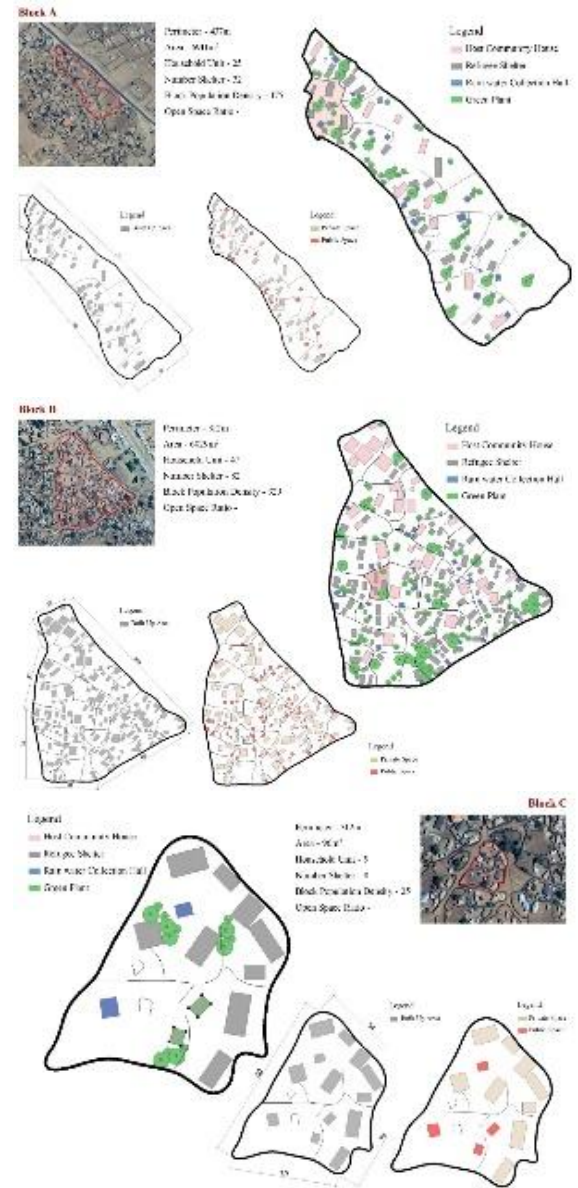
Figure 0-10 Shelter Evolution Timeline



Figure 0-11 Typical Refugee Shelter in Kebribeyah

Blocks were formed gradually rather than through formal planning, resulting in irregularly shaped parcels and non-uniform street alignments. Some of the blocks are

large in size, which leads to inaccessible plots and longer distances for basic movement and access. The blocks vary in both density and shape. Their irregular forms were developed without adequate consideration for accessibility, not just size. This lack of planning has contributed to irregular plot configurations and a fragmented settlement pattern.



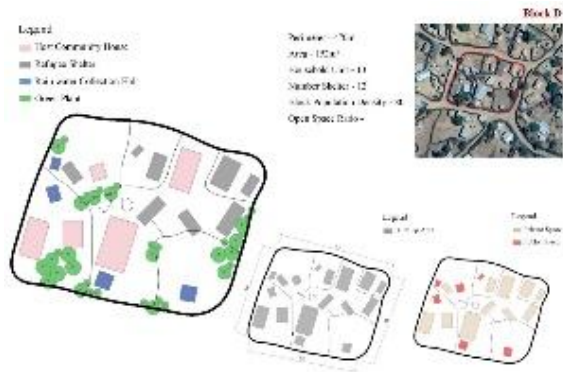


Figure 0-12 Block Sample

The plots are irregular in both shape and size, and the settlements within them do not follow any specific layout or respond to the plot boundaries. These open areas are multifunctional—used as playgrounds for children, living spaces for domestic animals, and as workspaces where construction materials are stored and prepared during the house-building process. The plots are enclosed with short bush plants that serve as informal property boundaries. The ground consists of a natural mixture of sand and clay, with no significant alterations made to the original landscape.

### Shelter Unit Level Analysis



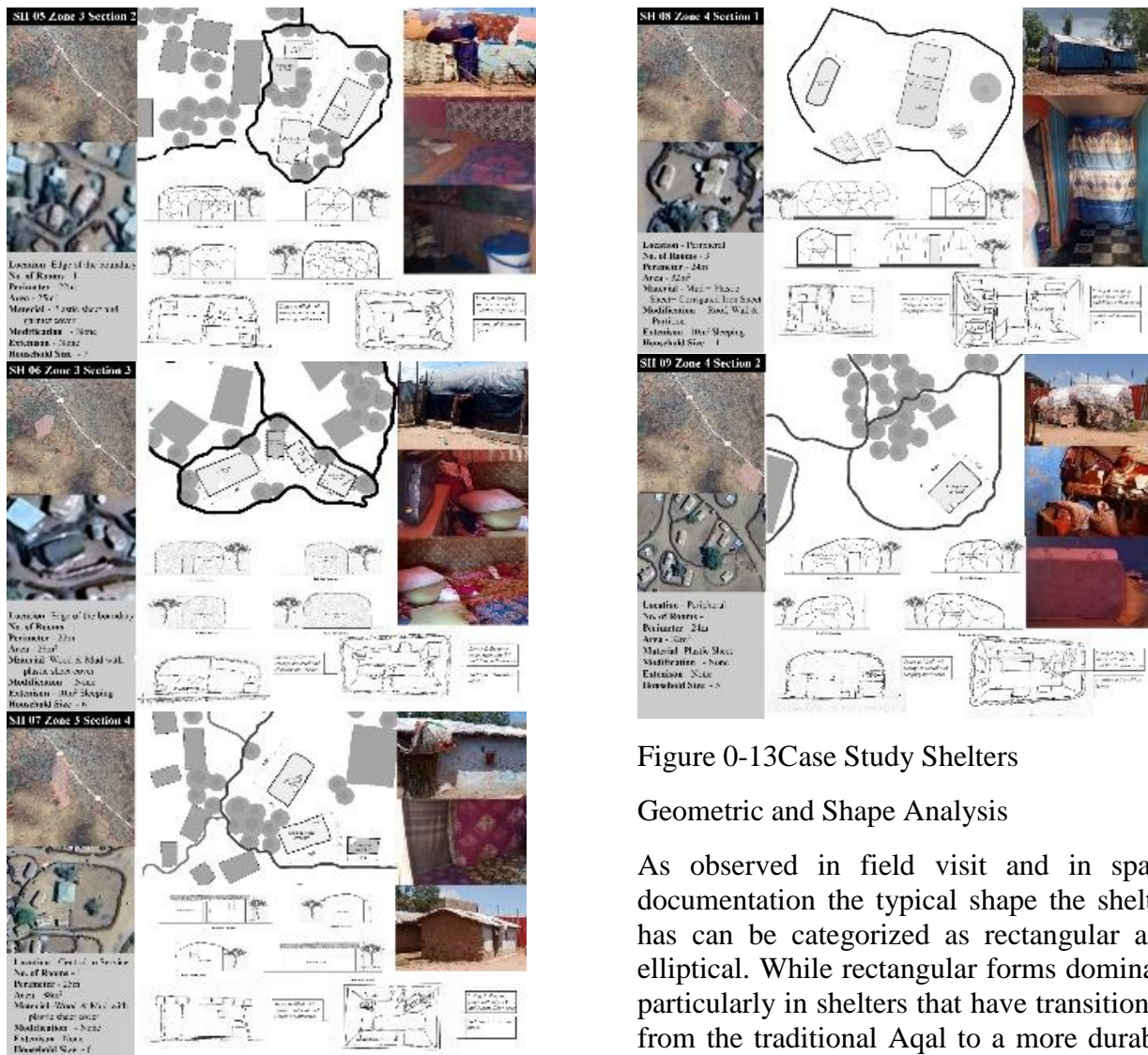


Figure 0-13 Case Study Shelters

### Geometric and Shape Analysis

As observed in field visit and in space documentation the typical shape the shelter has can be categorized as rectangular and elliptical. While rectangular forms dominate particularly in shelters that have transitioned from the traditional Aqal to a more durable material like Mud. Extension shelters and additional self-built structures show geometric regularity. Shelter dimensions are inconsistent but often range from 4\*6m to 3\*8 m. As a result Kebribeyah shelter layout lack as standard core unit.

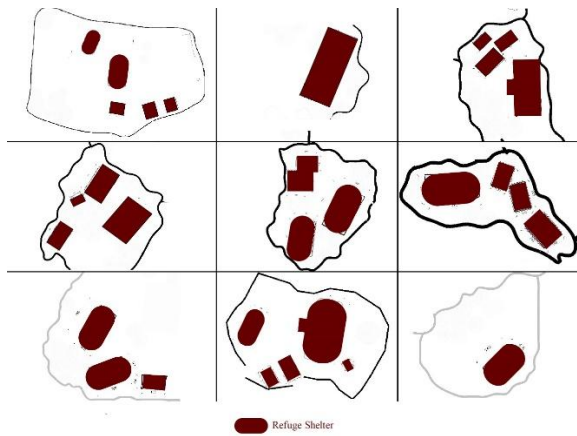


Figure 0-14 Shape and Position of Refugee Shelter

### Outdoor and Indoor Space Relationship

Outdoor space plays a significant role in the daily life of Kebribeyah Refugee camp. Majority of the domestic activities Such as cooking, and laundry are done in the outdoor area with additional purpose as playground, gathering place and making construction material ( The plastic sheet sewed together with garment fabric as roof coverage) . Circulation between indoor and outdoor areas is smooth but often delayed by poor path conditions, especially during the rainy season. Outdoor area I found surrounding the shelter area defined by fence made of wooden poles and woven sticks. Thus theses reflects the importance of outdoor living area .for social and cultural interaction.

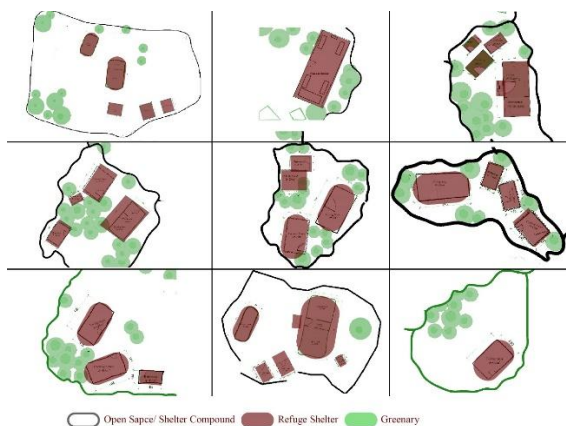


Figure 0-15 Indoor and Outdoor Space Relationships

### Functional Zoning and Use of Space

Shelters typical act multifunctional when it comes to space use analysis. A single living room can serve as sleeping, sitting, eating, and storage area. Since there is shortage of space accommodation for all service shelters lack service space integration. Cooking area are often found detached from the main shelter reflecting gap in both spatial and functional use. In the meantime the detachment of cooking area from the main shelter is a better approach to minimize accidents that might occur due to inappropriate material use in te area like easily flammable wood sticks or plastics covers. From NGOs support toilets and bath area are found to be constructed by relatively better material such as corrugated sheets. However, majority of the toilets lack proper roofing, privacy and waste management system.

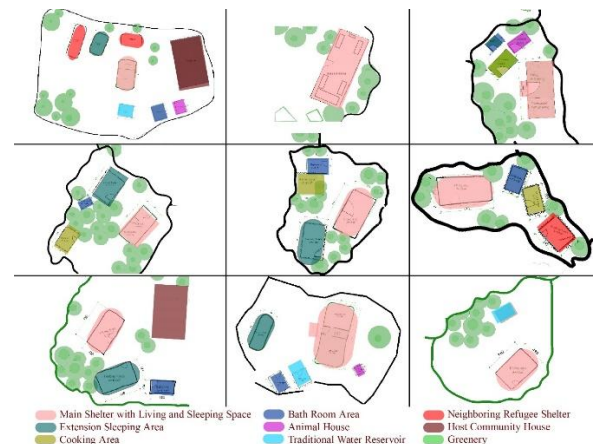


Figure 0-16 Functional Analysis

Around 49.7% of refugees live in shelters with single room lacking major program zoning challenge and overcrowding. Furthermore 87.6% refugees highlighted how shelter space are inadequate leading to privacy and cultural constrains.

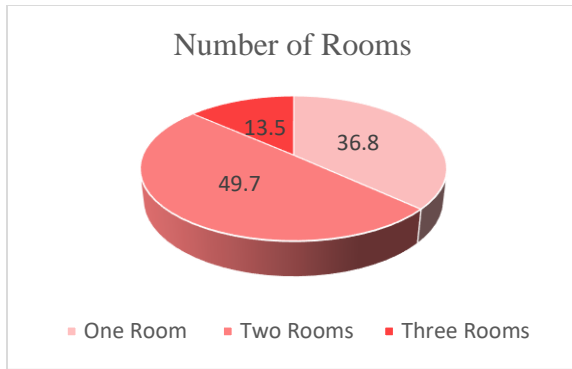


Figure 0-17 Number of Rooms per Shelter

To meet their personal desire some refugees often modify their shelter or add extension shelter for children’s sleeping. This reflects that refugee’s interest in shelter adaption to personal and cultural preference despite the limited space and resource for modification. 88.8% and 93.85 of refugees responded the separated location of cooking area and public bathroom in shelter outside compound. Cooking area are observed unsafe concerning the construction material such us wood or plastic that directly contribute to fire hazards.

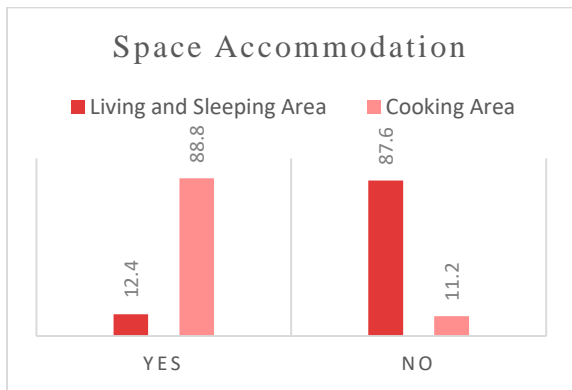


Figure 0-18 Shelter Space accommodation for Living, sleeping and cooking

Regarding the overall shelter quality 51.1 % of refugee’s labeled shelter space satisfaction as fair and about 30.6% as poor. Shelter lack major zoning clarity, structural instability and do not meet the minimum humanitarian standards such as UNHCR Emergency handbook & Sphere Standards.

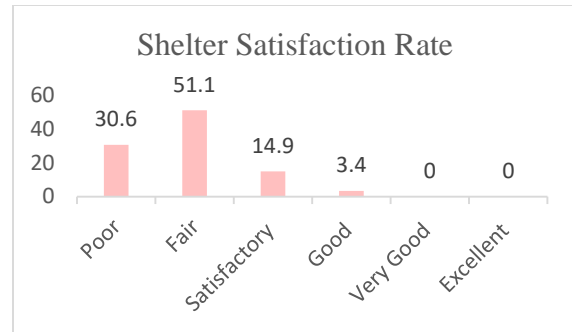


Figure 0-19 Shelter General Satisfaction Rate

Shelter unites and plots are irregular in size and layout, with informal open boundaries or enclosed by bushes. Shelter Material used includes mud, plastic sheet, wood, garment fabric and iron roofing. Shelters are usually vulnerable to natural or man-made hazards like heavy rain, wind, fire. Also they lack proper light and ventilation pushing most domestic activates to be done outside shelter with in the defend compound.

#### 4.2 Adequacy of housing in Kebribeyah Refugee camp

The findings in adequacy of shelter are sequentially present according to the adequacy of shelter indicator checklist.

**Security of Tenure** - Refugees perception towards tenure happened to vague referring to the 71% and 44.2% of refugees believing that NGO’s have tenure mandates regarding their shelter. Some refugees recognize that the land is owed by the Somali government. Despite the camp safety refugees have reported 21.1% satiation rate concerning fear of forced eviction by host communities due to land tenure claims.

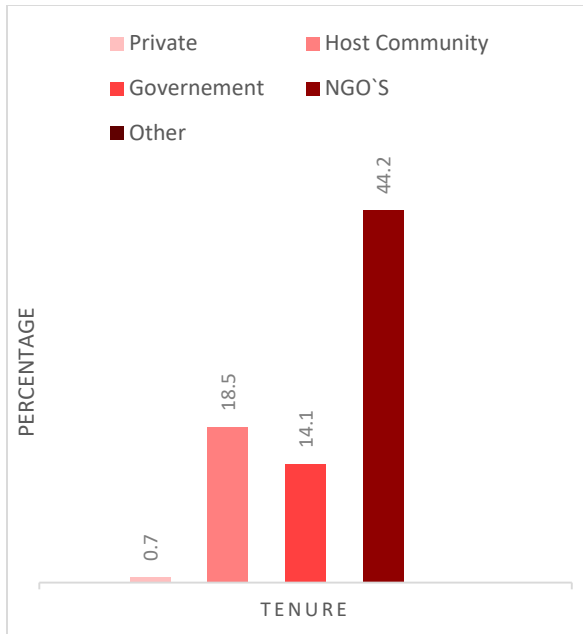


Figure 0-20 Refugee Perception towards ownership and Tenure

A member of the refugee have stressed her fear of daily violence that usually occur from her neighboring host community who have land tenure. These is not only visible to an individual camp member. The spatial analysis shows the co-existence of refugee shelter and host community hoses in similar plots. This overlap creates tension among dwellers and also vulnerability for the refugees. According to other safety related matters refugees reported 28.9% satisfaction concerning harassment which generally implicate the moderate sense of camp security.



Figure 0-21 Shelter Safety and Security

**Availability of Service** – The study shows that 36.4% of refugees have limited access to safe drinking water where majority of the communities relay on rainwater harvesting. Likewise 70% of the refugees lack access to sanitation, cooking energy, light, and waste disposal. In terms of public service 59.8% showed satisfaction in availability of education center. Public needs concerning security and market area are significantly limited when it comes to refugee camp. Over all this shows that the camp has inadequate access to basic services.

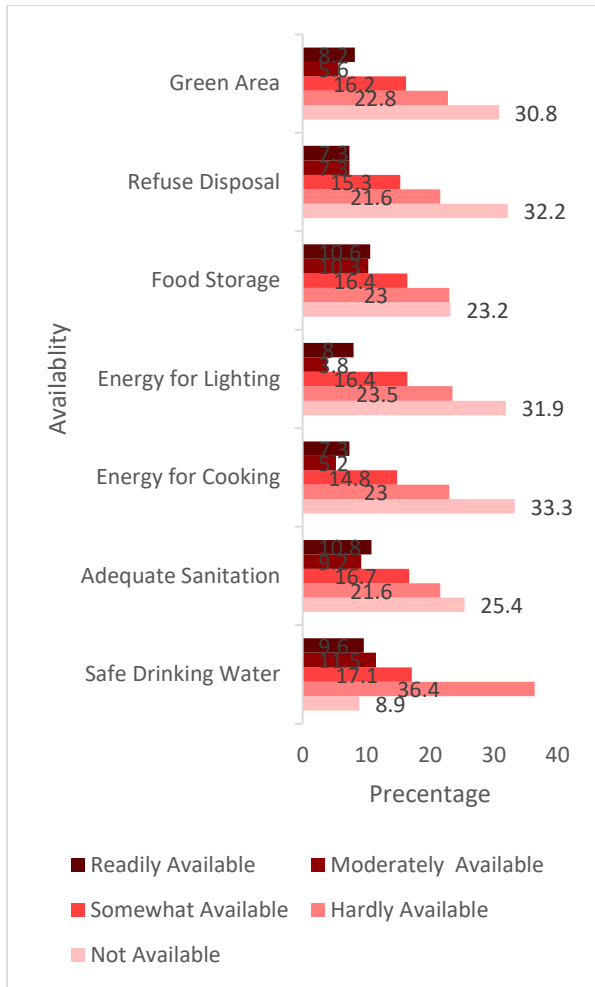


Figure 0-22 Basic Service with in Shelter Compound

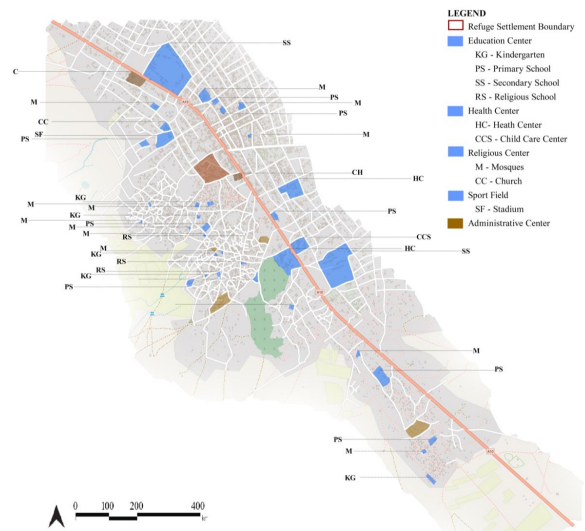


Figure 0-23 Settlement Service Map

**Habitability** – Refugee shelters often have multi-functional rooms that is caused due to shortage of space. 49.2%, 48%, 59.8% refugees reported dissatisfaction with cooking space, sleeping space and praying space. Due to increased number of household size shelter lack privacy and found overcrowded. Women’s, children’s, elderly and disadvantage groups often feel discomfort when it comes to privacy and cultural preference.

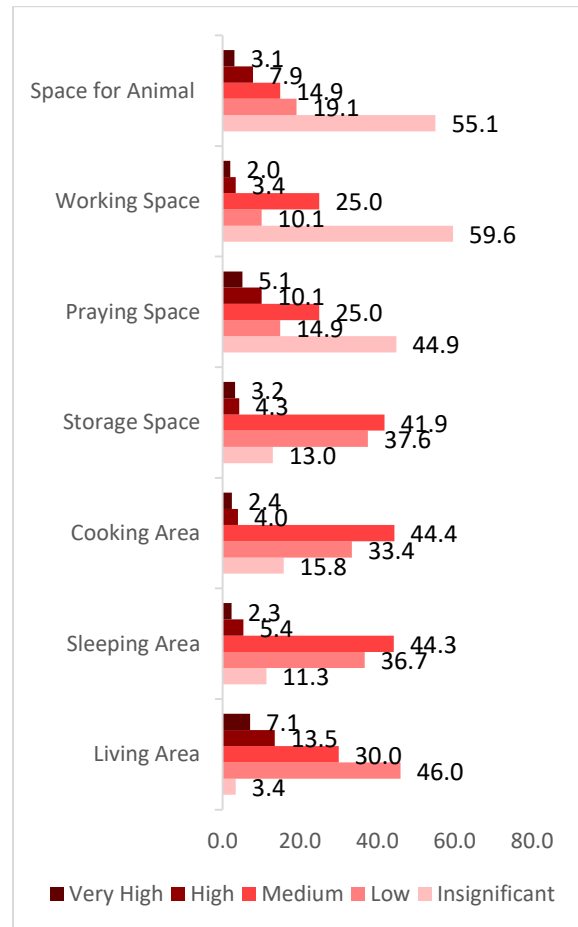


Figure 0-24 Space Analysis in terms of Size

Shelters are found 71.9% exposed to flood and 60.9% exposed to heavy rains due to their construction material inadequacy. Concerning thermal comfort of shelter its generally rated as fair. Since construction materials are collected locally from trees and branches refugees have reported high dissatisfaction in terms of partition, roofing

and wall material with 69.9%, 71.6%, and 54.8% rate respectively.

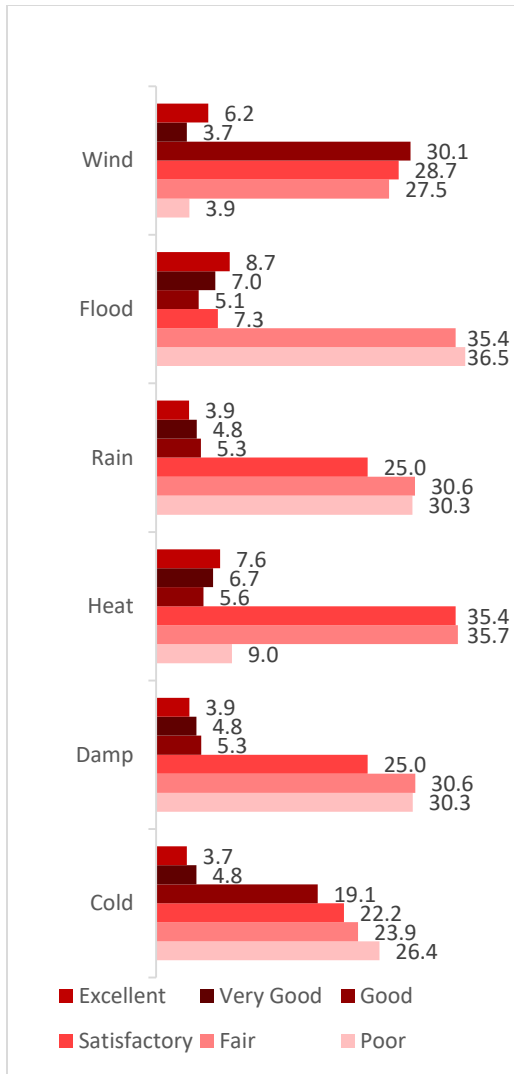


Figure 0-25 Shelter Weather Protection

Despite refugees skill in traditional Aqal hose construction, shelter are observed to lack basic structural strength and durability. Since openings are neglected in shelter design many shelter face poor ventilation and natural lighting transmission. According to functional and cultural preference refugees value 36.3% living and 25.5 % prayer space.

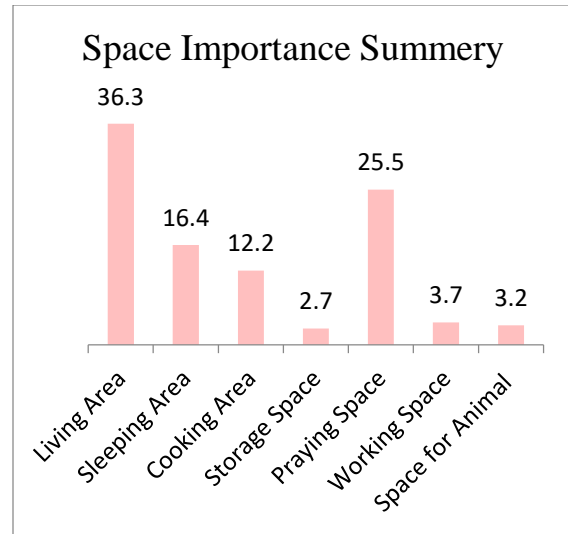


Figure 0-26 Summary of Space Importance

In contrary Sleeping and cooking areas are placed last in space importance order. Refugees tend to personalize interior shelter space with decorative material showing the need for cultural expression.

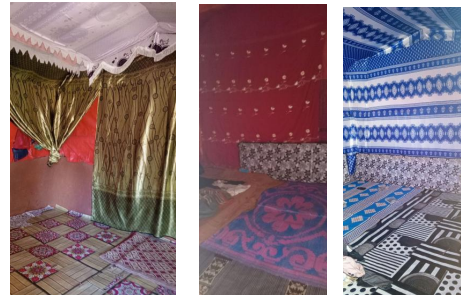


Figure 0-27 Shelter Interior Space decoration

In general, 51.1% and 30.6% of the refugees responded their satisfaction towards the space functional and size to be fair and poor respectively. This shows that the refugees are facing basic challenges regarding shelter function and size which leads to overcrowding and lack of privacy.

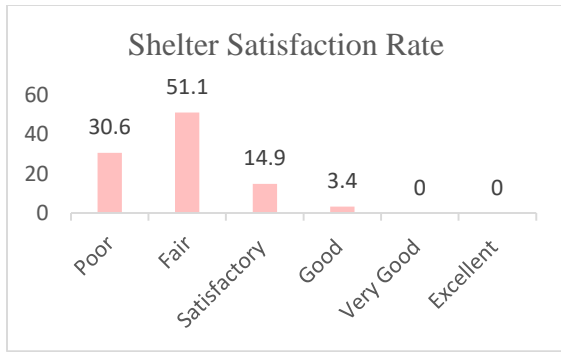


Figure 0-28 Shelter General Satisfaction Rate

**Accessibility** – Access to basic services are found challenging especially for children’s and for disadvantaged groups because of improper pathways and topography of the camp settlement.

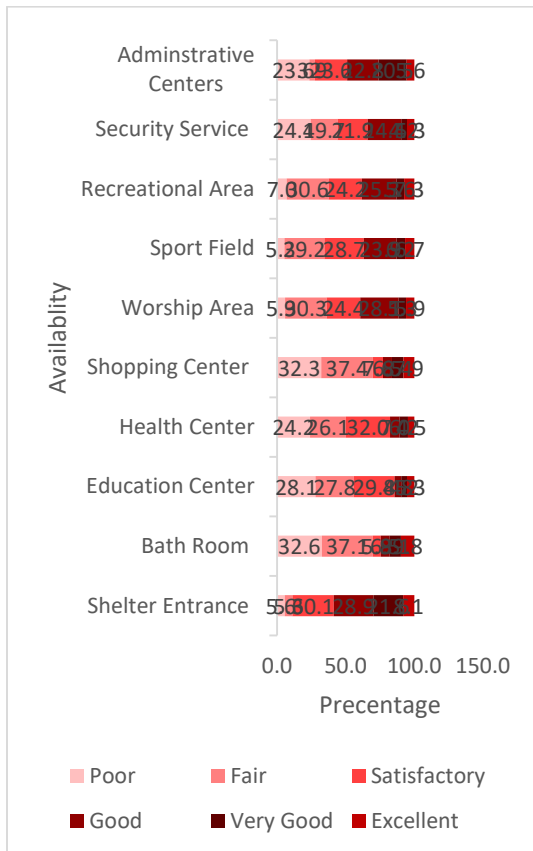


Figure 0-29 Shelter and Settlement accessibility regarding disadvantaged groups

72.1% of refugees have some access to employment which is usually informal or NGO led initiatives. Services lack basic

design feature that can promote disadvantage groups by inclusive means. Refugees with special need tend to be challenged in accessing bathroom, school and health center where pathways are found to be organic and unsuitable for access. As a result emotional stress have been perceived and reported from elderly and children who are dependent on their family members.

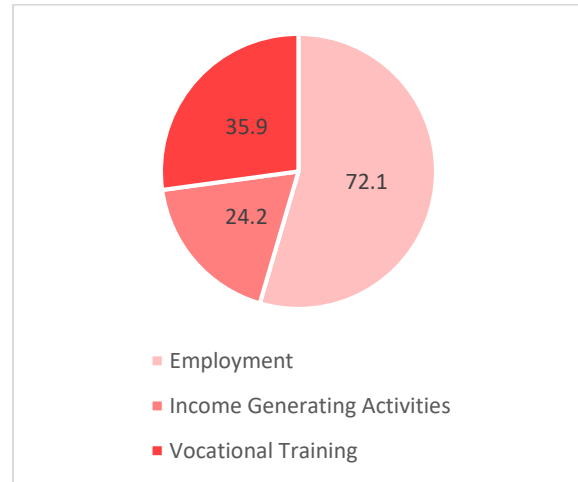


Figure 0-30 Camp Opportunities

To enhance refugee labor skills and knowledge vocational trainings have given as means of supporting and linking refugees to small business idea or employment opportunity. Remittance income is also found to be a significant means of income generation for some households.



Figure 0-31 Refugee Resettlement USA

**Location** – Some public services like secondary school, health center are found in far proximity from refugee shelters since they are located outside the camp boundary.

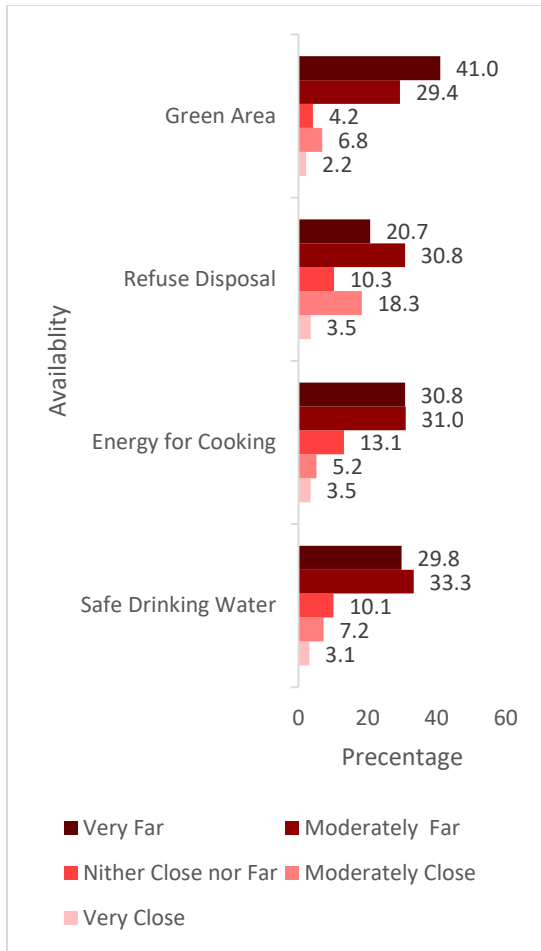


Figure 0-32 Basic Service location around Shelter compound

Concerning safety and shelter exposure to hazardous place 86.5% refugees reported their major concern regarding overcrowding which further affects refugee quality of life.

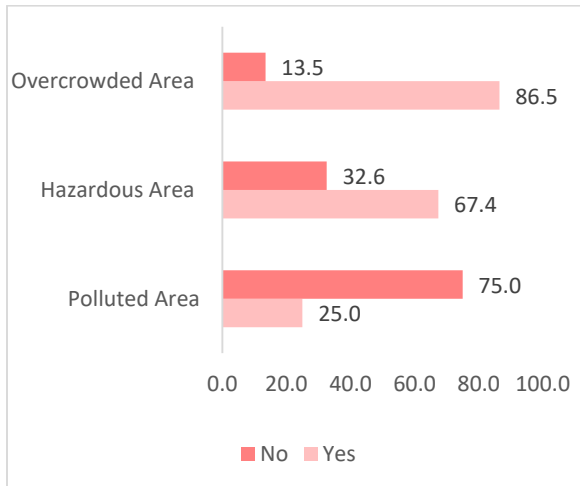


Figure 0-33helter Location Safety

Because of poor shelter material and weak site planning shelters are exposed to 67.4% of flood, 69.9% of epidemic disease, and 66.6% of fire hazard.

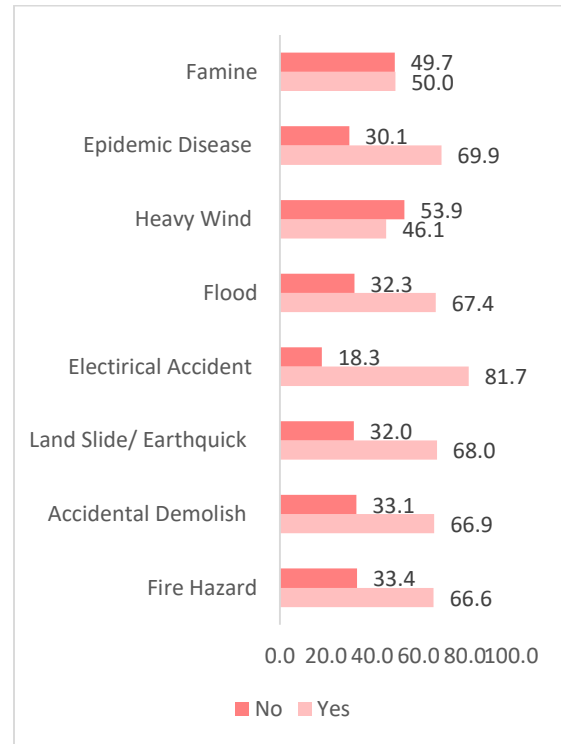


Figure 0-34 Refugee experience with the past 5 years.

Furthermore refugee shelters are 83.7% and 71.1% exposed to air and liquid pollution exposure respectively. The main cause for shelter pollution is the camp poor drainage and informal waste dump=ping and also shelter close proximity to toilet spaces.

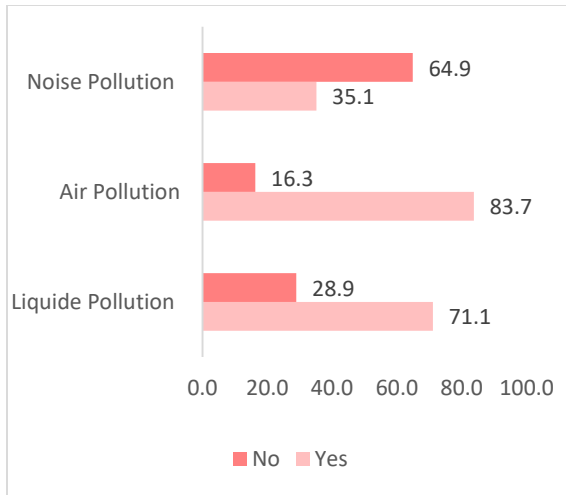


Figure 0-35 Shelter Safety from Pollution

Despite robbery and prostitution are significantly low some incidents like beggary, addiction and physical abuse are found to exist in the camp premix due to lack of light and security in night tim.

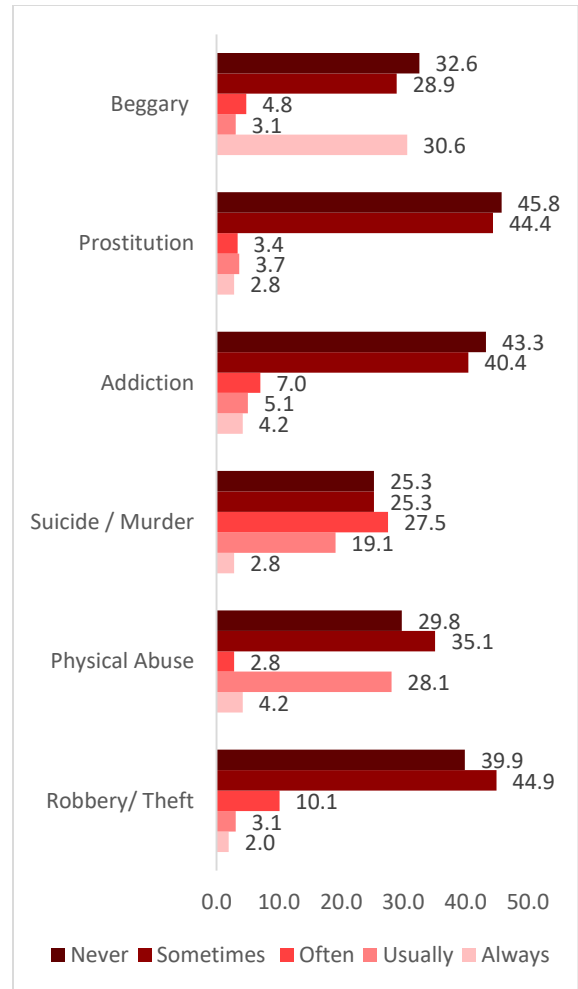


Figure 0-36 Camp Safety and Security Experience

**Cultural Adequacy** - Concerning Somaia Refugees cultural and religious preference 96.15 of refugees are found to feel the cultural inadequacy. Shelter layout which fully neglect gender roles, privacy need to respect religious preference refugees, usually tend to make modification and improvement in portion and extension of shelter space according to their cultural norms.

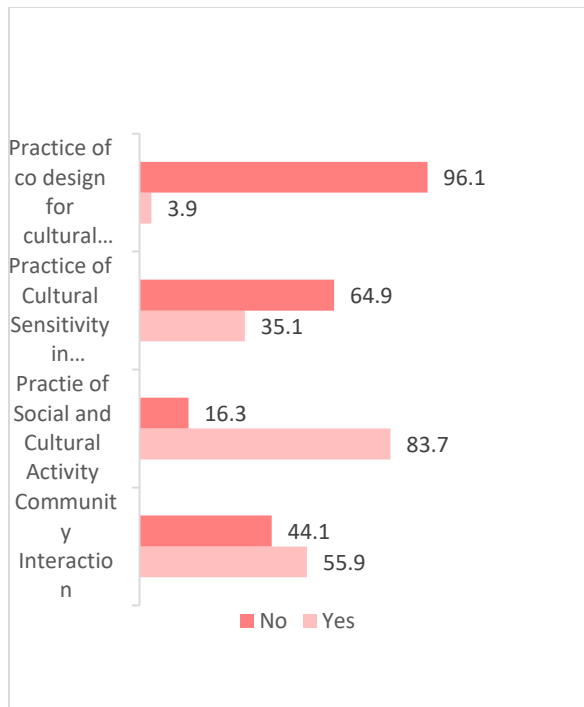


Figure 0-37 Social and Cultural Perception

#### 4.3 Shelter Adequacy Enhancement Strategies

The future expectance of refugees show that 43% who believe there will be no improvement in shelter condition while others think it will worsen (34% of refugees). Some refugees showed interest in slight shelter improvement.

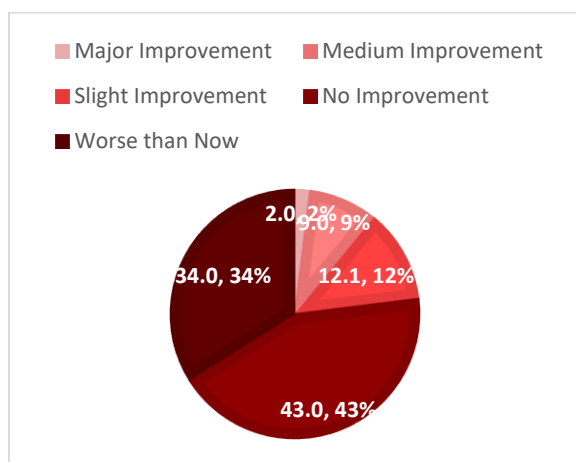


Figure 0-38 Future Expectation in Shelter Improvement

Despite the ongoing effort in inclusion plan which upgrading shelters and basic amenities the growing refugee needs and population makes the efferent insignificant. Refugee hope often relay on continual support from NGOs or remittance gained from family members and resettlement opportunities to third country. Even though the refugees have protracted setting they still tend to relay on external factors rather than local long term solutions.

It enhance refugee shelter adequacy both the refugees and the camp officials stressed the neglected legal framework regarding shelter rights. Official's mentioned that there is inconsistence among stakeholder shared responsibility when it comes to shelter provision. Which lead to improper shelter governance. As a result it is suggested that policy should be revised to incorporate refugee needs, host communities wants and regional authorities prerequisite, in particular for protracted camp like Kebribeyah. On the other hand refugees express the need for cultural integration in shelter design. To ensure its adequacy they suggested direct involvement in shelter design and planning to enhance shelter cultural and religious preference.

## 5. Conclusion and Recommendation

### 5.1 Conclusion

The adequacy of housing considering shelter configuration and settlement pattern of Kebribeyah Refugee camp is highly influenced by its long-term existence of being initially temporary humanitarian response settlement area to almost permanent or long-term settlement with no major improvement over the past three decades. Refugees who are either born in the camp or arrived at young age still living in the camp are facing major challenges experiencing their right to adequate housing.

The key factors that are affecting the adequacy of housing in Kebribeyah are tension between refugees and host community resulted from neglected settlement pattern causing tenure insecurity and ownership ambiguities. Also considering availability of basic service the camp is far and unevenly located from basic service like water, sanitation, electricity, education and health center. Further on accessibility and location of basic service the camp is subjected to flooding and erosion as a result of the irregular camp layout and topographic settlement which further affects accessibility of basic service, land use insufficiency and vulnerability to hazardous environment. Regarding habitability, shelters are found to be overcrowded poorly ventilated, weak in construction material and techniques leading it to be inadequate for the refugees. In addition, shelters should have cultural adequacy considering Kebribeyah refugee camp shelters which requires improvement in housing privacy, accommodation size, functionality and space importance like prayer space which are major priorities for the refugees.

## **5.2 Recommendation**

Kebribeyah Refugee camp requires significant transformation in planning, governance and humanitarian strategies to promote sustainable development through adequate housing. Since the camp has transform from emergency shelter site to long term community site the following recommendation are suggested to enhance the shelter adequacy and quality of life in the camp.

Upgrading settlement planning - The camp topographical setting and settlement pattern are the basic challenges to the area causing flood and erosion relocation might not be the best strategies to solve the problem. Thus, it is suggested that settlement upgrading and site development should be done. Upgrading

infrastructural lines and reorganizing shelter blocks can promote ease of access, clear street hierarchy and control flood and erosion. Also to promote accessibility of basic service restructuring zonal classification and creating sub center of basic amenities for all zones can further enhance safety of camp environment.

Improving Shelter Quality- Upgrading and improving shelters with durable, locally appropriate material, durable construction techniques and culturally acceptable design layout. To enhance accommodation size of shelter logical planning and design have to be done considering multiple of intervention to address issues regarding overcrowding and privacy issues considering vulnerable groups like women, children's and disables. Moreover, planning for regular shelter maintenance program should be planned to ensure shelters are kept up the standard and suitable for living.

Implementing adequacy of housing strategies- Implementing a framework that promotes housing adequacy regarding can enhance the shelter livability and quality. This can be creating clear and transparent frameworks regarding ownership and tenure rights, reviewing exiting refugee integration plans and promoting community planning and design means will ensure balancing tensions between refugees and host community needs and minimize the risk off fear of forced eviction. To improve access to basic service in the camp implementing decentralization plan for basic service camp ensure equal and balanced access to service and also introducing inclusive basic service can promote adequate accessibility for disadvantage groups.

Revision or new development of refugee based polices- Polices, frameworks or different interventions should be introducing integration plan of refugee in host community area to develop their living

condition and livelihood opportunities. Also, programs that focuses on refugee development in vocational training, employment opportunities and income

generation mean. Moreover, involvement of refugees in decision making process can bring better solution in understanding refugee needs, cultural practices and aspirations.

6.

## 7. References

- African Union. (2006). *Policy on Post- Conflict Reconstruction and Development*. Addis Ababa, Ethiopia: Conflict Management Division, Peace and Security Department, Commission of the African Union.
- United Nations. (1992). Agenda 21. *Conference on Environment and Development* (pp. 4-13). Rio de Janeiro: United Nations Division for Sustainable Development.
- Abraham, G. (2013). An Assessment of Housing Policy and Real Estate Development. *Research Gate*.
- ACCORD, T. A. (2021). *Conflict Trends*. ACCORD.
- African Union. (2015). *Agenda 2063, The Africa We Want*. Addis Ababa: African Union.
- African Union. (2012). *Kampala Convention; African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa*. Addis Ababa, Ethiopia: African Union.
- Agier, M. (2002). Between War and City. *Ethnography*, 317-341.
- Agier, Michel. (2011). *Managing the Undesirables - Refugee Camps and Humanitarian Government*. Cambridge: Polity Press.
- Alnwick, N. (1960). *A Study in Town Plan Analysis*. Newcastle: ORGE PHILIP & SON.
- Barbelet, V. (2018). *As local as possible, as international as necessary Understanding capacity and complementarity in humanitarian action*. London: Overseas Development Institute (ODI).
- Bender, S. T. (2010). The Handbook of Social Work Research Methods. In 2nd (Ed.), *Descriptive Studies* (p. 120). Los Angeles. London. New Delhi. Singapore. Washington DC: SAGE Publication.
- Brundtland, G. H. (1987). *World Commission on Environment and Development*. Oslo.
- Bushnaq, Z. Z. (2021). TEMPORARY VS PERMANENT: ASSESSING THE METHODS USED IN THE IMPLEMENTATION OF REFUGEE CAMPS AND SETTLEMENTS IN JORDAN. *ProQuest Dissertations Publishing*.
- Chitereka, C. (2008). The impact of refugees on the environment; the case of Africa. *Rajagiri Journal of Social Development*.
- Clover, J. (2002). *SITUATION REPORT: REFUGEES AND INTERNALLY DISPLACED PEOPLE'S IN AFRICA*.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd Edition ed.). Los Angeles, London. New Delhi. Singapore: SAGE Publication.
- CRRF, UNHCR. (2018). *Global update on the Comprehensive Refugee Response Framework*. Geneva, Switzerland : UNHCR.
- Davis, J. (2011). Planning in Disaster Recovery and Temporary Settlements. *Journal of Urban Design*.
- Devi, K. B. (2020). Case Study Method . In *Research Methodology and Fieldwork*. e-PG Pathshala INFLIBNET Center.
- DFID, D. f. (1999). *Sustainable livelihoods guidance sheets*. London: DFID.
- Donella H. Meadows, D. L. (1972). *The Limits to growth*. New York: Universe Books.
- Elizabeth Parker & Victoria Maynard, . (2005). Humanitarian response to urban crises: a review of area-based approaches. *International Institute for Environment and Development*, 1-28.

- Federal Negarit Gazette. (2019). *Refugee Proclamation No. 1110/2019*. Addis Ababa: Federal Negarit Gazette.
- Ghebregers, M. (2024, September 13). Out of camp and RLO support: two areas with potential to significantly improve Ethiopia's refugee response. London, UK: Refugee Law Initiative.
- Habitat, UN. (2021). *Keberibya Refugee camp Settlement Profile*. Geneva: UN Habitat.
- IASC, I. A. (2021). *2021 IASC Guidance on Localization: Strengthening Participation, Representation and Leadership of Local And National Actors in IASC Humanitarian Coordination Mechanisms*. Global Protection Cluster.
- IDMC, I. D. (2022). *Global Report on Internal Displacement*. Geneva, Switzerland: IDMC, Internal Displacement Monitoring Center.
- IGAD. (2020). *The IGAD Support Platform Annual Report*. Digibuti : IGAD.
- International Labor Organization . (2024). *ILO strategy on extending social protection to migrant workers, refugees, and their families*. Geneva: International Labor Organization .
- IOM. (2021). *World Migration Report 2022* . IOM UN Migration.
- Jacobsen, K. (2005). *The Economic Life of Refugees*. Boulder: Lynne Rienner Publishers.
- Jens-R Henkelmann, S. d. (2020). Anxiety, depression and post traumatic stress disorder in refugees resettling in high-income countries: A Systematic Review and Meta-Analysis. *SSRN Electronic Journal*, 6(4), 68-76.
- Leckie, S. (1989, October ). Housing ad a Human Right. *Environment and Urbanization*, 1(2), 90-108.
- Lefebvre, H. (1991). *The production of Space*. Maiden: Blackwell.
- Lombard, M. (2014). Constructing ordinary places: Place-making in urban informal settlements in Mexico. *Progress in planning* , 1-53.
- Low, I. A. (1992). *Place Attachment*. New York: Plenum Press.
- Mallett, S. (2004). Understanding Home: A Critical Review of the Literature. *Sage Journals*, 62-89.
- Marutlulle, N. K. (2022). An Exploration of the Impact of Inadequate Housing on Health in South Africa. *Sabinet Africa Journals*, 30(4), 52-70.
- Migration, I. U. (2022). *World Migration Report*. Geneva: International Organization for Migration.
- Newman, O. (1972). *Defensible Space; Crime Prevention Through Urban Design*. United States: Macmillan.
- Nicholas Crawford, J. C. (2015). *Humanitarian Policy Group HPG Commissioned Report, Protracted displacement: uncertain paths to self-reliance in exile*. London, United Kingdom: Overseas Development Institute.
- Norwegian Refugee Council, N. (2023). *Housing, land and property in the context of climate change, disasters and displacement*. Norwegian Refugee Council (NRC).
- Nussbaum, M. C. (2011). Creating Capabilities: The Human Development . *Hurvard University Press*, 31-2037.
- OAU, O. o. (1969, September 10). Convention Governing the Specific Aspects of Refugee Problems in Africa. Retrieved May 28, 2025, from <https://www.refworld.org/legal/agreements/oau/1969/en/13572>
- Philip Brown, S. G. (2022). The Impact of Housing on Refugees; an evidence synthesis. *Housing Studies*, 39(1), 227-271.

- Project Gaia. (2015, December 21). *Project Gaia*. Retrieved from Project Gaia: [https://projectgaia.com/where-we-work-the-jjiga-camps/?utm\\_source=chatgpt.com](https://projectgaia.com/where-we-work-the-jjiga-camps/?utm_source=chatgpt.com)
- Rania Aburamadan, C. T. (2020). Designing refugees' camps: temporary emergency solution, or contemporary paradigms of incomplet urban citizenship? Insights from Al Za`atari. *City, Territory and Architecture*, 1-12.
- ReliefWeb. (2012). *Woqooyi Galbeed - Situation Analysis*. OCHA. Retrieved from <https://reliefweb.int/report/somalia/woqooyi-galbeed-%E2%80%93-situation-analysis-october-2012>
- Robert Gifford, L. S. (2007). *Enviromental Psychology*. ResearchGate.
- Robert K. Yin. (2014). *Case study research: Design and methods. (5th ed.)*. CA: Sage: Thousand Oaks.
- RRS. (2023). *FDRE Refugees & Returnees Service*. Retrieved 05 28, 2025, from <https://rrs.et/>
- Ruggerio, C. A. (2021). Sustainability and sustainable development: A review of principles and definitions. *Science of the Total Environment*.
- Saraswati Dawadi, S. S. (2021). Mixed- Method Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education* , 2(2), 25-26.
- Sen, A. (2000). *Development as Freedom*. New York : ALFRED A. KNOFF, INC.
- Sphere Association. (2018). *The Sphere Handbook: Humanitarian Charter and Minimum tandards in Humanitarian Response*. (f. edition, Ed.) Geneva, Switzerland.
- Strang, A. A. (2008). Understanding Integration: A Conceptual Framework. *Journal of Refugee Studies*, 166-191. doi:<http://dx.doi.org/10.1093/jrs/fen016>
- Tadesse Kassa, F. M. (n.d.). Ethiopia's Refugee Policy Overhaul: Implications on the out of Camp Policy Regime and Rights to Residence, Movement and Engagement in Gainful Employment. *African Journals Online*, 124-184.
- Takase, C. (2018). *Implementing SDG 11 – key elements, challanges and opportunities*. Incheon, Republic of Korea .
- Teddlie, A. T. (2010). *SAGE Handbook of Mixed Methods in Social & Behavioral Research*. SAGE.
- Theis, T. (2022). Sustainability, AComprehensive Foundation. In T. Theis, *Sustainability, AComprehensive Foundation* (pp. 10-12). OpenStac CNX.
- Tome Corsellis & Antonella Vitale. (2005). *Transitional Settlement Dispalced Populations*. Cambridge: Oxfam GB.
- Turner, J. (1977). *Housing by people: Towards autonomy in building environments*. New York, USA: Pantheon.
- UN Habitat . ( 2015). *A GUIDE TO ASSIST NATIONAL AND LOCAL GOVERNMENTS TO MONITOR AND REPORT ON SDG GOAL 11+ INDICATORS*. Nairobi : UN Habitat.
- UN Habitat . (2024). *Development of a framework for measuring and reporting on the adequacy of housing across diverse national and local contexts*. Geneve, Switherland : UN.
- UN Habitat. (2008). *Ethiopia Urban Profile*. Nairobi, Kenya: United Nations Human Settlements Programme (UN-HABITAT).
- UN Habitat. (2014). *Annual Progress Report 2014, Implementation of the Strategic Plan (2014-2019)*. Nairobi, Kenya: UN Habitat (United Nations Human Settlements Programme).
- UN Habitat. (2014). *The Right to Adequate Housing Fact Sheet No. 21/ Rev. 1*.

- Geneva: Office of the United Nations High Commissioner for Human Rights.
- UN Habitat. (2018). *SDG Indicator 11.1.1 Training Module: Adequate Housing and Slum Upgrading*. Nairobi: United Nations Human Settlement Programme (UN-Habitat).
- UN Habitat. (2020). *Kebribeyah Settlement Profile, Somali Region, Ethiopia*. Geneva: UNHCR, UN Refugee Agency.
- UN Habitat. (2023). *Inclusive Cities: Enhancing the Positive Impact of Urban Migration*. Nairobi: UN Habitat.
- UN Refugee Agency . (2022). *Strategic Direction 2022-2026*. Geneva: UNHCR .
- UNHCR . (2014). *The Right to Adequate Housing Fact Sheet 21*. Geneva: United Nation.
- UNHCR. (2006, July). *Kebribeyah Camp Overview*. Nairobi, Kenya: Regional Spatial Analysis Lab .
- UNHCR. (2007). *Handbook for Emergencies*. (t. edition, Ed.) Geneva: UNHCR.
- UNHCR. (2011). *Resettlement Handbook*. Geneva: UNHCR, Division of International Protection.
- UNHCR. (2013). *Global Shelter and Settlement Strategy, 2014-2018*. Geneva, Switherland: UNHCR.
- UNHCR. (2018). *Kebribeyah Camp Profile* . Geneva: UNHCR. Retrieved from <https://data.unhcr.org/en/documents/details/62682>
- UNHCR. (2018). *The Global Compact on Refugees*. Geneva, Switherland: UNHCR.
- UNHCR. (2021). *Ethiopia GRF Pledge Progress Report*. Geneva, Switherland: UNHCR.
- UNHCR. (2021). *Global Compact on Refugees Indicator Report* . Geneva, Switherland: UNHCR.
- UNHCR. (2021). *UN Refygee Agency*. Retrieved from <https://www.unhcr.org/afr/africa.html>
- UNHCR. (2022). *Global Trends; Forced Displacement in 2021*. Copenhagen, Denmark: United Nations High Commissioner for Refugees (UNHCR).
- UNHCR. (2022). *Mid Year Trends*. Copenhagen, Denmark: UNHCR Global Data Service. Retrieved from <https://www.unhcr.org/refugee-statistics>
- UNHCR. (2023). *Global Trends, Forced Displacement in 2022*. Geneva,Switherland: UNHCR.
- UNHCR. (2023). *Kebribeyah Inclusion Roadmap (2023-2027) Building Resilience Together*. OCHA, United Nation Office for the Coordination of Humanitarian Affairs. Retrieved from <https://reliefweb.int/report/ethiopia/kebribeyah-inclusion-roadmap-2023-2027-building-resilience-together>
- UNHCR. (2024). *Ethiopia Operational Update* . Geneva, Switherland : UNHCR.
- UNHCR. (2024). *Ethiopia: UNHCR Operational Update, June 2024*. Geneva: UNHCR.
- UNHCR. (2025). *Operational data portal (ODP)*. Geneva: UNHCR.
- UNHCR, U. N. (2023). *Ethiopian Refugee Respose Plan*. Copenhagen, Denmark: United Nation Higer Commissionaer for Refugee (UNHCR).
- United Nations . (2016). *The Sustainable Development Goals Report 2016*. New York : United Nations .
- United Nations. (2002). *Report of the World Summit on Sustainable Development*. Johannesburg, South Africa: United Nations.
- United Nations. (2015). *Transforming Our World, The 2030 Agenda for Sustainable Devleopment* . New York: United Nations.

- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.
- United Nations. (2018). *Global Compact on Refugees*. New York: United Nations.
- United Nations. (2018). *Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation*. New York: United Nations.
- Vitale, T. C. (2005). *Transitional settlement displaced populations*. Cambridge, England: OXFam GB.
- World Bank Group. (2019). *Sustainable Development Goal 10 – Reduced Inequalities: Progress and Prospects*. Geneva: World Bank Group.
- World Bank Group . (2023). *Global Database of Shared Prosperity*. World Bank .
- World Bank Group. (2016). *Forced Displacement and Development*.
- World Bank Groups. (2019). *Forcibly displaced : Toward a development approach supporting refugees, the internally displaced, and their hosts*. World Bank Group.
- Xiaolong Gan, J. Z. (2019). Exploring the Adequacy of Massive Constructed Public Housing in China. *Sustainability*, 1-17.
- Yu, C. T. (2007). Mixed Method Sampling; A typology with Examples. *Journal of Mixed Method Research*, 1(1).
- Zetter, R. (2021). Shelter and Settlement for Forcibly Displaced People . In *International Encyclopedia of Housing and Home* (pp. 330-335). Oxford : Elsevier Ltd.

# Annex II: Research Instrument English Version

Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) Addis Ababa University, Ethiopia  
Refugee Shelter Configuration and Settlement Patterns: A Study of Adequacy of Housing in Keberibeya Jijiga Refugee Camp



## 1. Semi Structured Interviews for Refugees

### Introduction

This is a questionnaire prepared as part a thesis project in housing and sustainable development(HASD) MSC program in the Ethiopian institute of architecture, building construction and city development to be used for research purpose only. Explain the purpose of the questions to the people ad that the information will be kept confidential.

### Information and Guideline of the Questionnaire

If the respondent don't want to answer any questions write N/AQ

If the questions doesn't concern them write N/A or – in the table

Answers that could have multiple answer, please tick the box

If their answer is other than the given choices, mark other and write their answer

<b>CODE</b> _____
----------------------

### Information of the Questionnaire

Date of the Interview /dd/mm/yyyy  
\_\_\_\_\_

Interviewer Full Name \_\_\_\_\_

Questionnaire Code \_\_\_\_\_

### Part 1. Information of the Respondent

1. Full Name \_\_\_\_\_
2. Age \_\_\_\_\_
3. Sex  Male  Female
4. Nationality \_\_\_\_\_

### Part 2. Pre migration, migration, and Post migration Experience vs. Shelter

5. Can you share a bit about your previous experience before you come here?

#### Probing Questions

- 5.1. What is you education background?
- 5.2. What was your pervious occupation?
- 5.3. How did you generate income for living
- 5.4. Where did you live?
- 5.5. What type of residence was it?
- 5.6. What do you remember most about your pervious living condition?

_____ _____ _____ _____ _____ _____ _____
---

6. How do you remember the Journey to the Jijig refugee camp?

#### Probing Questions

- 6.1 Why did you came from your country? What was the main challenges?
- 6.2 Can you tell us what it was like when you decided to flee from your country?
- 6.3 What was the biggest fear you thought when planning to go out?
- 6.4 How did you accommodate your family members?
- 6.5 What were the key challenges you faced during your migration?
- 6.6 What was your expectation at arrival? What did you get?
- 6.7 When did you have been accepted as a refugee? \_\_\_\_\_yyyy




7. How did you describe your housing condition at arrival?

**Probing Questions**

- 7.1. Were there any specific expectation you had about housing when you arrive here?
- 7.2. How do those expectation align with your previous experience?
- 7.3. Can you describe your arrival living situation in the refugee camp?
- 7.4. Have you noticed any change throughout your stay? What are the changes?


8. Can you describe your current living situation?

**Probing Questions**

- 8.1. When did you start living here?
- 8.2. What was the main reason for changing shelter from previous to current one?
- 8.3. How does your previous living situation compared to your current one in the camp?
- 8.4. What are the main differences you have noticed?


9. What is the process to change one shelter to another?

- 9.1. What is the most difficult step to follow when changing shelter?
- 9.2. What are the main reason for refugees to change shelter?


**Part 3. Household Information**





**4.2 Availability of Service, material, facilities and infrastructure** Housing is not adequate if its occupants do not have safe drinking water, adequate sanitation, and energy for cooking, heating, lighting, food storage or refuse disposal.

- 19. How do you describe the availability of basic services and infrastructure in your shelter and camp compound?
  - 19.1. Think of availability of basic services like Water, sanitation, energy for cooking, lighting, food storage, refuse disposal, green area
  - 19.2. How would you describe the availability in terms of your shelter location
  - 19.3. Think of availability of basic social services like Education center, Health Center, Shopping Center, Religious Center Worship area, Sport field / Playground, Recreational center for adults and elderly, Security Service like police office, Administration center
  - 19.4. How would you describe the availability of social services in terms of your shelter location


20. How do you get your basic groceries/ food for you and your family?


- 21. How the quality of housing does provided in the Camp impact your ability to find and maintain employment?
  - 21.1. What are economic activities or job opportunities available within the camp?
  - 21.2. Do you have aspiration to work / get employed? Why?
  - 21.3. Have you ever been engaged in any income-generating activities within the camp? What was it?
  - 21.4. Have you been involved in vocational training programs or initiatives provided in the camp to enhance livelihood opportunities?
  - 21.5. What are the basic limitations or barriers that prevent refugees from accessing employment opportunities or income-generating activities in or outside the camp?


22. What do you suggest about availability and location of basic and social service to have better living environment.

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---

**4.3 Habitability:** Housing is not adequate if it does not guarantee physical safety or provide adequate space, as well as protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards.

- 23. How many rooms are there in your shelter / Excluding kitchen and bathroom? \_\_\_\_\_
- 24. Does the space accommodate sufficient living and sleeping area? 1.  Yes 2.  No
- 25. How would describe the overall shelter size comparing with your household size?

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---

- 26. Describe your shelter space in terms of your daily life.
  - 26.1. How is your shelter arranged? Is there a reason behind this arrangement
  - 26.2. How do refugees typically organize their living space?
  - 26.3. Are there specific area designated for different purposes(e.g. sl
  - 26.4. Which space is the most important space in the shelter? Why?
  - 26.5. What do you appreciate most about your current shelter?
  - 26.6. What aspects do you find challenging in space considering your daily life?
  - 26.7. How does the space of the shelter affect your daily life with in your living space?
  - 26.8. How does the space of the shelter affect your daily life with others in the compound?

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---

- 27. Where does a typical meal preparation take place?
  - 27.1. What is challenging about the cooking area?
  - 27.2. What is your energy source for daily cooking purpose? Where did you find that?




- 28. How do you describe your location of bathroom/
  - 28.1. What is challenging about the bathroom and it location?
  - 28.2. How does the women's perceive the location in terms of safety and security?


- 29. How would you describe your shelter protection against environmental factors like cold, damp, heat, rain, flood, wind, other?


- 30. What type of material are most commonly used for constructing shelter?
  - 30.1. How would you describe your shelter in relation to construction material?
  - 30.2. How do these material influence the living condition?


- 31. Can you describe your shelter construction Techniques?
  - 31.1. Have you been involved in construction of your shelter?
  - 31.2. What are the steps followed for constructing your shelter?
  - 31.3. Who's mandate is to construct the shelter?
  - 31.4. Can refugees modify their shelter?
  - 31.5. What modification have you done so far?


- 32. What is your recommendation on the housing space and room arrangement to enhance habitability of the shelter?




**4.5 Accessibility**- Housing is not adequate if the specific needs of disadvantaged and marginalized groups are not taken into account.

33. How would you describe accessibility of basic and social service considering disadvantaged or marginalized group?

33.1. Have you or your family member face any disadvantage due to their incapability? How?

33.2. What are the biggest challenges about accessibility of service provided specifically for vulnerable individuals (children, elderly, and people with disabilities) within the housing units?

33.3. What are the top basic challenges about accessibility of service provided specifically for vulnerable individuals (children, elderly, and people with disabilities) within the shelter compound?


34. What improvement should be done in the housing unit and compound to consider those disadvantaged or marginalized group?


**4.6 Location** - housing is not adequate if it is cut off from employment opportunities, health-care services, schools, childcare centers and other social facilities, or if located in polluted or dangerous areas.

35. How do you consider your housing unit within the camp premises safe and secure? Why?


36. How do you describe your shelter in terms of environmental issues?

36.1. How do you describe shelter located in relation to polluted area?

36.2. How do you describe shelter located in relation to Hazardous Area?

36.3. How do you describe shelter located in relation to Overcrowded Area?

36.4. What are the challenges faced in the camp in terms of environmental pollution like liquid / water, air, noise pollution




37. For the past 5 to 10 years have you experienced any natural or man-made disaster in the camp compound? Can you explain the situation?

- |  |                                 |
|--|---------------------------------|
| 37.1. Fire hazard                          | 37.5. Electric hazard/ accident |
| 37.2. Accidental housing demolish/collapse | 37.6. Flood                     |
| 37.3. Land slid/ earthquake                | 37.7. Famine                    |
| 37.4. Heavy Wind                           | 37.8. Epidemic disease          |


38. For the past 5 years have you or other members experiences the following in the camp compound? Can you explain the situation?

- |                         |                    |
|-------------------------|--------------------|
| 38.1. Robbery /Theft    | 38.4. Addiction    |
| 38.2. Physical abuse    | 38.5. Prostitution |
| 38.3. Suicide or Murder | 38.6. Beggary      |


39. What recommendation do you have to improve safety and security of refugees in the house and the compound?

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---

**4.7 Cultural Adequacy-** Housing is not adequate if it does not respect and take into account the expression of cultural identity.

40. How do you interact with other community?

40.1. Do you have any community / social connection means? What is it and how is it practice?

40.2. How does the housing situation in the camp allow for community interactions and social connections with fellow refugees?

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---

41. How do you practice social and cultural activities in the camp, such as common areas, recreational spaces, or places of worship?

41.1. What social practices do you have in the camp?

41.2. What cultural practices do you have in the camp?,

41.3. What religious practices do you have in the camp?

41.4. Can you describe the common spaces, recreational spaces and worship places interms of your social, cultural and religious believes?

41.5. What is the biggest challenge to practice social, cultural and religious practices in the camp or around your house?

41.6. If you were given a chance what improvement will you do to increase the quality of your cultural, social and religious practices.

<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
---




42. How do you consider the housing unit and overall camp environment considering the background and culture of the inhabitant?


43. If you are given a chance to co design the housing units and neighborhood with local community to enhance cultural preference of the society what improvement will you make?

- 43.1. What modification will you do in the house? (Thing you will add and cancel /remove)
- 43.2. What modification will you do your immediate neighborhood (Thing you will add and cancel /remove)
- 43.3. What modification will you do to the whole camp settlement (Thing you will add and cancel /remove)


**Part 5. Future Expectation and Aspiration**

44. For the coming five to ten year how do you describe your current living condition?





45. For the coming five to ten year what are your biggest fear related to your current living condition in as a refugee in this camp?


46. For the coming five to ten year what are your biggest expectation related to your current living condition in as a refugee in this camp?


47. For the coming five to ten year what are your biggest aspiration related to your current living condition in as a refugee in this camp?


## Informed Consent Form

### Preface

My name is \_\_\_\_\_ I am with the Housing and sustainable development student research team which is from Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) Addis Ababa University, Ethiopia. I would like to talk to you about Refugee Shelter Configuration and Settlement Patterns in Keberibeya Jijiga Refugee Camp. We are working to improve the adequacy of refugee shelter and settlement by studying end user need and major challenges faced by administrators. We ask you to help the refugee camp shelter configuration and settlement pattern study believing that your idea are very valuable as the end user.

- If you don't want to help, we respect your choice to do so
- If you agree, we would like to record the interview. You have the right to refuse to answer any questions and if you want to end the interview at any point you are free to do so
- Once you sign the agreement we will continue the interview and ask you some important questions. It will take me approximately 45-60 minutes to complete a=my questions
- We will do our best to keep your information safe when we disseminate the result as required
- For more information, you may contact Ms. Keniko Duguma at telephone +251 910929649, Email [keniko.duguma.edu@gmail.com](mailto:keniko.duguma.edu@gmail.com)

### Permissions

Permissions	Yes I do	No I do not
Do you agree to be interviewed?		
Do you agree to have the audio of this interview recorded?		
Do you agree to be filmed?		
Do you agree to be photographed?		

*By signing this document, I declare that I fully understand the information that was explained to me. I also agree to participate without any form of payment or compensation/financial or otherwise/, instead I choose to participate in support of the objective of the project. I therefore give consent to the project organizer (including but not limited to EiABC and other respective stakeholder) to disseminate my photographs, videos, audio recordings and or interviews research through electronic media or publications both nationally and internationally.*

Participant Name \_\_\_\_\_

Date \_\_\_\_\_

Signatures \_\_\_\_\_

## Informed Consent Form

### Preface

My name is \_\_\_\_\_ I am with the Housing and sustainable development student research team which is from Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) Addis Ababa University, Ethiopia. I would like to talk to you about Refugee Shelter Configuration and Settlement Patterns in Keberibeya Jijiga Refugee Camp. We are working to improve the adequacy of refugee shelter and settlement by studying end user need and major challenges faced by administrators. We ask you to help the refugee camp shelter configuration and settlement pattern study believing that your idea are very valuable as the end user.

- If you don't want to help, we respect your choice to do so
- If you agree, we would like to record the interview. You have the right to refuse to answer any questions and if you want to end the interview at any point you are free to do so
- Once you sign the agreement we will continue the interview and ask you some important questions. It will take me approximately 45-60 minutes to complete a=my questions
- We will do our best to keep your information safe when we disseminate the result as required
- For more information, you may contact Ms. Keniko Duguma at telephone +251 910929649, Email [keniko.duguma.edu@gmail.com](mailto:keniko.duguma.edu@gmail.com)

### Permissions

Permissions	Yes I do	No I do not
Do you agree to be interviewed?		
Do you agree to have the audio of this interview recorded?		
Do you agree to be filmed?		
Do you agree to be photographed?		

*By signing this document, I declare that I fully understand the information that was explained to me. I also agree to participate without any form of payment or compensation/ financial or otherwise/, instead I choose to participate in support of the objective of the project. I therefore give consent to the project organizer (including but not limited to EiABC and other respective stakeholder) to disseminate my photographs, videos, audio recordings and or interviews research through electronic media or publications both nationally and internationally.*

Participant Name \_\_\_\_\_

Date \_\_\_\_\_

Signatures \_\_\_\_\_

## 2. Quantitative Survey Questionnaire for Refugees

### Introduction

This is a questionnaire prepared as part a thesis research project in housing and sustainable development (HASD) MSC program in the Ethiopian institute of architecture, building construction and city development to be used for research purpose only. Explain the purpose of the questions to the people ad that the information will be kept confidential.

### Information and Guideline of the Questionnaire

If the respondent don't want to answer any questions write **N/AQ**

If the questions doesn't concern them write **N/A** or – in the table

Answers that could have multiple answer, please tick the box

If their answer is other than the given choices, mark other and write their answer

<b>CODE</b>
_____

### Information of the Questionnaire

Date of the Interview /dd/mm/yyyy \_\_\_\_\_

Interviewer Full Name \_\_\_\_\_

Questionnaire Code \_\_\_\_\_

### Part 1. Information of the Respondent

1. Full Name \_\_\_\_\_
2. Age \_\_\_\_\_
3. Sex  Male  Female
4. Nationality \_\_\_\_\_
5. Education Level  1. Illiterate  2. Primary Education (1-8)  3. Secondary Education (9-12)  4. Higher Education
6. Previous occupation / Income generation mechanism \_\_\_\_\_
7. Previous Location of Residence?  1. Rural Area  2. Urban Center
8. Who owns the residence?  1. Governmental house  2. Cooperative House  3. Private House  4. Rental House
9. What type of residence was it?  1. Apartment  2. Villas  3. Rural House  4. Townhome  5. Other please specify \_\_\_\_\_
10. How long did you live there?  1. Less than a year  2. 1-5 years  3. 5-10year  4. 11-15 year  5. More than 15 years
11. Why did you came from your home country?  1. Civil war  2. Ethic, tribal or Religious Violence  3. Natural Disaster  4. Other, Please specify \_\_\_\_\_
12. When did you have been accepted as a refugee? \_\_\_\_\_ (yyyy)
13. Do you have a work permit as a refugee?  1. Yes, If yes follow the below question,  2. No
  - 13.1 Where do you work?  1. Inside the camp  2. Outside the camp
  - 13.2 What do you work? \_\_\_\_\_
  - 13.3 How far is your work place from the shelter?  1. Less than 5min  2. 5-10min  3. 10min -30min  4. 30min to 1hr  5. More than 5hr.
  - 13.4 How do you go to work?  1. By foot  2. By car  3. Public transport  4. Other, please specify \_\_\_\_\_

### Part 2. Household Information

14. Number of people living in the shelter (Household Size)  
 No. of Male \_\_\_\_ No. of Female \_\_\_\_ Total \_\_\_\_\_
15. Are there any additional household members living with you in this shelter?  1. Yes, if yes how many are they? \_\_\_\_\_  2. No
16. Number of household members according to their age group.

Aged 1 year and below	Aged 1-5	Aged 5-12	Aged 12-18	Aged 18-40	Aged 40-65	Aged 65 and above



Refugee Shelter Configuration and Settlement Patterns: A Study of Adequacy of Housing in Keberibeya Jijiga Refugee Camp

17. Number of household members according to their education level?

1.Underage	2.Illiterate	3.Primary Education 1-8	4.Secondary Education (9-12)	5.Higher Education

18. Are they household members with special need?  1. Yes, if yes follow the below question  2. No

18.1 Number of household members with special need?

1.Mental Deficiency	2.Physical Deficiency	3.Visually Impaired	4.Hearing Deficiency	5.Other, Please specify

19. Is there an income generation activities within your household members?  1. Yes, if yes please specify the activity \_\_\_\_\_  2. No

**Part 3. Shelter and Settlement Configuration**

20. Areal/ Compound Name of the shelter location \_\_\_\_\_

21. When did you start living in this shelter? \_\_\_\_\_ (yyyy)

22. Before you came here have you been living in other shelter?  1. Yes, if yes answer the following?  2. No

Refugee Shelter Journey	23. What type of housing was it?				
23.1 Shelter I- at arrival	<input type="checkbox"/> 1. Private Plastic Tent	<input type="checkbox"/> 2. Private Shelter	<input type="checkbox"/> 3. Communal Plastic Tent	<input type="checkbox"/> 4. Communal Shelter	5.other <input type="checkbox"/> please specify _____
23.2 Shelter II	<input type="checkbox"/> 1. Private Plastic Tent	<input type="checkbox"/> 2. Private Shelter	<input type="checkbox"/> 3. Communal Plastic Tent	<input type="checkbox"/> 4. Communal Shelter	5.other <input type="checkbox"/> please specify _____
23.3 Shelter III	<input type="checkbox"/> 1. Private Plastic Tent	<input type="checkbox"/> 2. Private Shelter	<input type="checkbox"/> 3. Communal Plastic Tent	<input type="checkbox"/> 4. Communal Shelter	5.other <input type="checkbox"/> please specify _____
Refugee Shelter Journey	24. How long have you Stayed?		25. Reason of Shelter Change		
24.1 Shelter I- at arrival					
24.2 Shelter II					
24.3 Shelter III					

26. Duration of living in this shelter /current condition.

1. Less than a year  2. 1-5 years  3. 6-10 years  4. More than 10 years

27. Current Housing Situation;

1. Private Plastic Tent  2. Private Shelter  3. Communal Plastic Tent  4. Communal Shelter  5. Other, please specify \_\_\_\_\_

**Part 4. Indicators for Adequacy of Housing**

**4.1 Security of Tenure** - Housing is not adequate if its occupants do not have a degree of tenure security which guarantees legal protection against forced evictions, harassment and other threats.

28. Shelter Ownership

1. Private  2. Host Community  3. Gov't  4. NGO  5. Other  please specify \_\_\_\_\_

29. Shelter Tenure Right 1. Private Permanent Owner  2. Private Temporary Owner  3. Group ownership  4. No Ownership  5. Other  please specify \_\_\_\_\_

30. How would you rate the **degree of tenure security** considering the legal protection against the following

Degree of Tenure Security	Poor	Fair	Satisfactory	Good	Very Good	Excellent
30.1 Forced Eviction	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
30.2 Harassment	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
30.3 Other Threats, Please specify	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>



**4.2 Availability of Service, material, facilities and infrastructure** Housing is not adequate if its occupants do not have safe drinking water, adequate sanitation, and energy for cooking, heating, lighting, food storage or refuse disposal.

31. How would you describe the **availability and location of basic service and infrastructure** in your housing unit?

Shelter basic Service or infrastructure	Available	Not Available	Near	Midway	Far
31.1 Safe drinking water	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
31.2 Adequate sanitation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
31.3 Energy for Cooking	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
31.4 Energy for lighting	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
31.5 Food Storage	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
31.6 Refuse Disposal	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
36.7 Green area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

32. How would you describe the **availability and location of basic service and infrastructure** in the compound in relation to your housing unit?

Compound basic Service or infrastructure	Available	Not Available	Near	Midway	Far
32.1 Education center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.2 Health Center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.3 Shopping Center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.4 Religious Center Worship area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.5 Sport field / Play ground	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.6 Recreational center for adults and elderly	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.7 Security Service like police office	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
32.8 Administration center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

33. From where do you get your basic groceries? Please mention the top three

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

34. Does the quality of housing provided in the Camp impact your ability to find and maintain employment? 1. Yes  2. No  if yes please specify how \_\_\_\_\_

35. Can you name three economic activities or job opportunities available within the camp?

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

36. Have you ever been engaged in any income-generating activities within the camp?  1. Yes  2. No if yes please specify \_\_\_\_\_

37. Are there vocational training programs or initiatives provided in the camp to enhance livelihood opportunities?  1. Yes  2. No if yes please specify \_\_\_\_\_

38. What are the three basic limitations or barriers that prevent refugees from accessing employment opportunities or income-generating activities in or outside the camp?

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**4.3 Habitability:** Housing is not adequate if it does not guarantee physical safety or provide adequate space, as well as protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards.

39. How many rooms are there in your shelter / Excluding kitchen and bathroom? \_\_\_\_\_

40. Does the space accommodate sufficient living and sleeping area?  1. Yes  2. No

41. How would you rate the overall shelter size comparing with your household size? 1.  Poor 2.  Fair 3.  Satisfactory 4.  Good 5.  Very Good 6.  Excellent



42. Describe your shelter space in terms of Size or accommodation scale in your daily life.

Important Space List	Insignificant	Low	Medium	High	Very High
42.1 Living Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.2 Sleeping Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.3 Cooking Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.4 Storage Space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.5 Praying Space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.6 Working space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.7 Space for Animal	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
42.8 Other, _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

43. Do you have a separate kitchen / cooking area? 1. Yes,  if yes follow the question 2. No

43.1 Where is the location of your kitchen/ cooking area? 1.  inside the shelter 2.  outside shelter nearby 3.  Away from the shelter 4.  Other please specify \_\_\_\_\_

44. How do you rate the location of the bathroom in relation to your shelter? 1.  Near 2.  Midway 3.  Far

45. What type of bathroom do you have?  1. Public  2. Private  3. Other please specify \_\_\_\_\_

46. Describe the shelter considering the space importance in your daily life.

Important Space List	Insignificant	Low	Medium	High	Very High
46.1 Living Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.2 Sleeping Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.3 Cooking Area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.4 Storage Space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.5 Praying Space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.6 Working space	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.7 Space for Animal	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
46.8 Other, _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

47. How would you describe your shelter protection against

Shelter Protection	Poor	Fair	Satisfactory	Good	Very Good	Excellent
47.1 Cold	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.2 Damp	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.3 Heat	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.4 Rain	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.5 Flood	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.6 Wind	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
47.7 Other, _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

48. How would you describe your shelter in relation to construction material

Shelter Element	Poor	Fair	Satisfactory	Good	V Good	Excellent
48.1 Structure	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.2 Walls	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.3 Flooring	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.4 Roof/ Ceiling	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.5 Opening	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.6 Partition	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
48.7 Other, _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>



49. How would you describe your shelter in relation to construction Techniques

Shelter Element	Poor	Fair	Satisfactory	Good	V Good	Excellent
49.1 Structure	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.2 Walls	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.3 Flooring	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.4 Roof/ Ceiling	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.5 Opening	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.6 Partition	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
49.7 Other	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

4.5 Accessibility- Housing is not adequate if the specific needs of disadvantaged and marginalized groups are not taken into account.

50. How would you describe accessibility of the following service considering disadvantaged or marginalized group

Shelter and Compound	Poor	Fair	Satisfactory	Good	Very Good	Excellent
50.1 Shelter Entrance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.2 Bath Room	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.3 Education center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.4 Health Center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.5 Shopping Center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.6 Religious Center Worship area	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.7 Sport field / Play ground	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.8 Recreational center for adults and elderly	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.9 Security Service like police office	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
50.10 Administration center	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

51. What are the top 3 challenges about accessibility of service provided specifically for vulnerable individuals (children, elderly, and people with disabilities) within the housing units?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

52. What are the top 3 challenges about accessibility of service provided specifically for vulnerable individuals (children, elderly, and people with disabilities) within the shelter compound?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

4.6 Location - housing is not adequate if it is cut off from employment opportunities, health-care services, schools, childcare centers and other social facilities, or if located in polluted or dangerous areas.

53. Do you consider your housing unit within the camp premises safe and secure?  1. Yes  2. No

53.1 How/ Why?

\_\_\_\_\_

54. Is your shelter located in or around?

Location of Housing Unit	Yes	No	If Yes, Specify
54.1 Polluted Area			
54.2 Hazardous Area			
54.3 Overcrowded Area			

55. For the past 5 years have you experienced the following in the camp compound?

Safety of Housing Unit towards	Yes	No	If Yes, Specify



55.1 Fire Hazard			
55.2 Accidental Housing demolish / collapse			
55.3 Land slide / earthquake			
55.4 Electric hazard / accidents			
55.5 Flood			
55.6 Heavy Wind			
55.7 Epidemic Disease			
55.8 Famine			

56 Do you consider your housing unit and the camp compound in general free from the following environmental pollutant?

Safety from environmental pollution	Yes	No	If Yes, Specify
56.1 Liquid/ Water Pollution			
56.2 Air Pollution			
56.3 Noise pollution			

57 For the past 5 years have you or other members experiences the following in the camp compound?

Social Problems	Always	Usually	Often	Sometimes	Never
57.1 Robbery /Theft	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
57.2 Physical abuse	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
57.3 Suicide or Murder	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
57.4 Addiction	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
57.5 Prostitution	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
57.6 Beggary	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

**4.7 Cultural Adequacy-** Housing is not adequate if it does not respect and take into account the expression of cultural identity.

58 Does the housing situation in the camp allow for community interactions and social connections with fellow refugees?  1. Yes  2. No

58.1. How/ Why?

---



---

59 Do you practice social and cultural activities in the camp, such as common areas, recreational spaces, or places of worship?  1. Yes  2. No 3.

59.1 How/ Why?

---



---

60 Do you consider the housing unit and overall camp environment consider the background and culture of the inhabitant?  1. Yes  2. No

60.1. How/ Why?

---



---

61 Have you seen witnessed any co design of housing units and neighborhood with local community to enhance cultural preference of the society?  1. Yes  2. No

60.2. How/ Why?

---



---



**Part 5. Future Expectation and Aspiration**

**61** For the coming five to ten year how do you rate your current living condition?

1.  Major improvement 2.  Medium Improvement 3.  Slight improvement 4.  no improvement 5.

Worse than now

6. Why is the reason

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**62** For the coming five to ten year what are your biggest fear related to your current living condition in as a refugee in this camp? Please mention at least three

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

**63** For the coming five to ten year what are your biggest expectation related to your current living condition in as a refugee in this camp? Please mention at least three

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_

**64** For the coming five to ten year what are your biggest aspiration related to your current living condition in as a refugee in this camp? Please mention at least three

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_



## Informed Consent Form

### Preface

My name is \_\_\_\_\_ I am with the Housing and sustainable development student research team which is from Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) Addis Ababa University, Ethiopia. I would like to talk to you about Refugee Shelter Configuration and Settlement Patterns in Keberibeya Jijiga Refugee Camp. We are working to improve the adequacy of refugee shelter and settlement by studying end user need and major challenges faced by administrators. We ask you to help the refugee camp shelter configuration and settlement pattern study believing that your idea are very valuable as the end user.

- If you don't want to help, we respect your choice to do so
- If you agree, we would like to record the interview. You have the right to refuse to answer any questions and if you want to end the interview at any point you are free to do so
- Once you sign the agreement we will continue the interview and ask you some important questions. It will take me approximately 45-60 minutes to complete a=my questions
- We will do our best to keep your information safe when we disseminate the result as required
- For more information, you may contact Ms. Keniko Duguma at telephone +251 910929649, Email [keniko.duguma.edu@gmail.com](mailto:keniko.duguma.edu@gmail.com)

### Permissions

Permissions	Yes I do	No I do not
Do you agree to be interviewed?		
Do you agree to have the audio of this interview recorded?		
Do you agree to be filmed?		
Do you agree to be photographed?		

***By signing this document, I declare that I fully understand the information that was explained to me. I also agree to participate without any form of payment or compensation/financial or otherwise/, instead I choose to participate in support of the objective of the project. I therefore give consent to the project organizer (including but not limited to EiABC and other respective stakeholder) to disseminate my photographs, videos, audio recordings and or interviews research through electronic media or publications both nationally and internationally.***

Participant Name \_\_\_\_\_

Date \_\_\_\_\_

Signatures \_\_\_\_\_













## **A. Space Use Documentation with Refugees**

### **Compound Space Use Checklist**

- Document current space use within the refugee compound (observe and annotate)
- Mark up floor plan with space use both formal and informal
- Document equipment's and sizes/ location
- Document key flows / observe and map)
- Establish key spatial flows and document how people travers space
- Draw key path through the compound /unit
- Document site dynamics
- Take notes and photo of how the larger site works
- Entry to site and activities
- Site plan

### **Shelter Space Use Checklist**

- Document current space use within the refugee shelter units(observe and annotate)
- Mark up floor plan with space use both formal and informal(basic vertical dimension, function, label, total floor area estimation )
- Floor plan annotation could be done at the larger scale or unit / room scale
- Document equipment's and sizes/ location. This can be done by taking photos or annotating room plans to document key pieces of furniture's or equipment's in rooms.( Furnishing, basic horizontal dimensions, location and function )
- Document key flows / observe and map)
- Establish key spatial flows and document how people travers space
- Floor Plans





Habaynta Hoyga Qaxootiga iyo Qaabka Dejinta: Daraasad ku Saabsan Ku Filanaanshaha Guryaha ee Xerada Qaxootiga ee Keberbeya Jijiga

17. Tirada xubnaha qoyska marka loo eego heerka waxbarashadooda?

1. Dugsiga	2. Waxna qorin waxna akhriyin	3. Waxbarashada aasaasiga ah 1-8	4. Waxbarashada sare	
------------	-------------------------------	----------------------------------	----------------------	--

18. Ma xubno qoys baa leh baahi gaar ah? ý 1. Haa, haddii ay haa tahay raac su'aasha hoose ý 2. Maya

18.1 Tirada xubnaha qoyska ee baahida gaarka ah qaba?

1. Dhinaca Maskaxda	2. Dhibaato Jireed	3. Aragga Naafo	4. Maqal La'aan	5. Mid kale, Fadlan sheeg
---------------------	--------------------	-----------------	-----------------	---------------------------

19. Ma jiraan hawlo dakhlii abuur ah oo ka dhex jira xubnaha qoyskaaga? ý 1. Haa, haddii ay haa tahay fadlan sheeg hawsha

ý 2. Maya

**Qaybta 3. Habaynta Hoyga iyo Dejinta**

20. Magaca dhabta ah/ isku dhafka ah ee goobta hoyga \_\_\_\_\_

21. Goormaad bilowday inaad ku noolaato hoygan? \_\_\_\_\_ (sanad)

22. Kahor intaadan halkan imaan miyaad ku noolayd hoy kale? ý 1. Haa, hadday haa tahay ka jawaab kuwan soo socda? ý 2. Maya

Safarka Hoyga Qaxootiga	23. Guryo noocee ah ayay ahaayeen?				
23.1 Hoyga I- marka la yimaado	ý 1. Teendhada Caaga ah ee la wadaago	ý 2. Hoyga gaarka ah	ý 3. Teendhada Caaga ah ee la wadaago	ý 4. Hoyga la wadaago	5. kale ý fadlan sheeg
23.2 Hoyga II	ý 1. Teendhada Caaga ah ee la wadaago	ý 2. Hoyga gaarka ah	ý 3. Teendhada Caaga ah ee la wadaago	ý 4. Hoyga la wadaago	5. kale ý fadlan sheeg
23.3 Hoyga III	ý 1. Teendhada Caaga ah ee la wadaago	ý 2. Hoyga gaarka ah	ý 3. Teendhada Caaga ah ee la wadaago	ý 4. Hoyga la wadaago	5. kale ý fadlan sheeg
Socdaalka Hoyga Qaxootiga	24. Intee in le'eg ayaad joogtay?		25. Sababta Isbeddelka Hoyga		
24.1 Hoyga I-					
imaatinka 24.2					
Hoyga II 24.3 Hoyga III					

26. Muddada ku noolaanshaha hoygan / xaaladda hadda jirta.

1. Wax ka yar hal sano ý 2. 1-5 sano ý 2. 6-10 sano ý 3. In ka badan 10 sano

ý 1. Teendho caag ah oo gaar loo leeyahay ý 2. Hoyga gaarka ah

**Qaybta 4. Tilmaamayaasha Ku Filanaanshaha Guriyeynta**

**4.1 Badbaadada Kirada** - Guryuhu kuma filna haddii dadka degani aanay haysan shahaado ilaalineed oo damaanad qaadaya ilaalinta sharci ee ka saarista qasabka ah, dhibaatynta iyo khataraha kale.

28. Lahaanshaha Hoyga

1. Gaar ah ý 2. Beesha martida loo yahay ý 3. Dowladda

29. Xuquuqda Kirada Hoyga 1. Mulkiilaha Joogtada ah ee Gaarka ah ý 2. Mulkiilaha Ku Meel Gaarka ah 3. Lahaanshaha Kooxda

5. Wax kale ý fadlan sheeg

30. Sideed u qiimayn lahayd **heerka nabad-gelyo-hayneed** iyadoo la tixgalinayo ilaalinta sharciga ah ee ka soo horjeeda **heerkan**

soo socda ee Amniga Muddada	Faqiir Cadaanad Ku Qanci Wanaagsan Aad U Fiican Aad U Fiican				
30.1 Ka saarida Qasabka ah	1ý 2ý	3ý	4ý	5ý	6ý
30.2 Hagar daamo	1ý 2ý	3ý	4ý	5ý	6ý
30.3 Hanjabaadaha kale, Fadlan sheeg	1ý 2ý	3ý	4ý	5ý	6ý



**4.2 Helitaanka Adeeg, agab, tas-hillaad iyo kaabayaasha** Guryeynta kuma filna haddii aysan dadka deggan haysan biyo nadiif ah oo la cabbo, fayadhowr ku filan, iyo tamar ay ku karsadaan, kuleyliyaha, nalka, kaydinta cuntada ama qashinka.

31. Sideed u sharaxi lahayd helitaanka iyo goobta adeega aasaasiga ah iyo kaabayaasha dhaqaalahaaga guri guri?

Hoyga adeegga aasaasiga ah ama	Lama heli karo		Meel u dhow Midway Far		
		La heli karo			
kaabayaasha 31.1 Biyo nadiif ah oo la cabbo	1 y	2 y	3 y 4 y		5 y
31.2 Nadaafad ku filan 31.3	1 y	2 y	3 y 4 y		5 y
Tamarta wax lagu kariyo	1 y	2 y	3 y 4 y		5y
31.4 Tamarta laydhka 31.5	1 y	2 y	3 y 4 y		5 y
Kaydinta Cuntada	1 y	2 y	3 y 4 y		5y
	1 y	2 y	3 y 4 y		5y
36.7 Aagga cagaaran	1 y	2 y	3 y 4 y		5 y

32. Sideed u sharaxi lahayd helitaanka iyo goobta adeega aasaasiga ah iyo kaabayaasha dhismaha ee xarunta marka loo eego qaybtaada guri?

Adeegga aasaasiga ah ama kaabayaasha isku	Lama heli karo		Meel u dhow Midway Far		
		La heli karo			
dhafka ah 32.1 Xarunta waxbarashada	1 y	2 y	3 y 4 y		5 y
32.2 Xarunta	1 y	2 y	3 y 4 y		5 y
Caafimaadka 32.3 Xarunta	1 y	2 y	3 y 4 y		5 y
Wax iibsiga 32.4 Xarunta Diinta ee Aagga	1 y	2 y	3 y 4 y		5 y
Cibaadada 32.5 Garoonka	1 y	2 y	3 y 4 y		5 y
Ciyaaraha / Garoonka Ciyaaraha 32.6 Xarunta	1 y	2 y	3 y 4 y		5 y
madadaalada ee dadka waaweyn iyo waayeelka	1 y	2 y	3 y 4 y		5 y
	1 y	2 y	3 y 4 y		5 y

33. Halkee ka keentaa cuntadaada aasaasiga ah? Fadlan sheeg saddexda ugu sarreeya 1. \_\_\_\_\_ 2. \_\_\_\_\_

3. \_\_\_\_\_ 34. Tayada guryaha lagu bixiyo Kaamka ma saamaynaysaa awoodaada shaqo helida iyo joogtey Haay 2. Maya haddii ay haa tahay fadlan sheeg sida \_\_\_\_\_

35. Miyaad magacaabi kartaa saddex hawlood oo dhaqaale ama fursado shaqo oo ka jira xerada dhexdeeda?

1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_

36. Weligaa ma ku hawlanayd wax dhaqdhaqaaq dakhli abuur ah oo ka jira xerada dhexdeeda? y 1. Haa y 2. Maya haddii ay haa tahay fadlan sheeg \_\_\_\_\_

37. Ma jiraan bamaamijyo tababar xirfadeed ama hindise lagu bixiyo xerada si kor loogu qaado fursadaha maciishada? y 1. Haa y 2. Maya haddii ay haa tahay fadlan sheeg \_\_\_\_\_

38. Waa maxay saddexda xaddidaad ee aasaasiga ah ee ka horjoogsanaya qaxootiga inay helaan shaqo fursadaha ama hawlaha dakhli-abuurka gudaha ama dibadda kaamka?

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**4.3 Deganaanshaha:** Guryuhu kuma filna haddii aysan dammaanad qaadin badbaadada jireed ama aysan siinin meel ku filan, iyo sidoo kale ilaalinta qabowga, qoyaanka, kulaylka, roobka, dabaysha, khataraha kale ee caafimaadka iyo khataraha dhismaha.

39. Immisa qol ayaa ku yaal hoygaaga / Marka laga reebo jikada iyo suuliga? \_\_\_\_\_

40. Boosku miyay ku filan tahay degaan iyo aag hurdo? y 1. Haa y 2. Maya 41. Sideed

u qiimaynaysaa cabbirka hoyga guud marka la barbar dhigo tirada qoyskaaga? 1. y Faqiir 2. y Cadaalad 3. y

Ku qanacsan 4. y Wanaagsan 5. y Aad u Wanaagsan 6. y Aad u fican



42. U sharax booska hoygaaga xagga cabbirka ama cabbirka hoyga ee nolol maalmeedkaaga.

Liiska boosaska muhiimka ah ee aan muhiim ahayn	Dhexdhexaad hoose	oo sarreeya	Aad u sarreeya
42.1 Deegaanka lagu noolaado 2 y 3 y 5 y		4 y	
42.2 Goobta lagu seexo	1 y	2 y 3 y	4 y 5 y
42.3 Goobta wax lagu kariyo	1 y	2 y 3 y	4 y 5 y
42.4 Goobta Kaydinta	1 y	2 y 3 y	4 y 5 y
42.5 Goobta lagu Tukado	1 y	2 y 3 y	4 y 5 y
42.6 Goobta shaqada	1 y	2 y 3 y	4 y 5 y
42.8 Kale,	1 y	2 y 3 y	4 y 5 y

43. Ma leedahay meel gooni ah oo jikada/wax lagu karsado? 1. Haa, y haddii ay haa tahay raac su'aasha 2. Maya y

43.1 Aaway jikada/ goobta cuntada lagu kariyo? 1. y gudaha hoyga 2. y meel ka baxsan hoyga u dhow 3. y Ka fog hoyga 4. y Mid kale fadlan sheeg \_\_\_\_\_

44. Sideed u qiimeysaa meesha musqusha ku taal ee la xidhiidha hoygaaga? 1. y Ku dhow 2. y Midway 3. y Fog 45. Waa maxay nooca musqusha ee aad leedahay? y 1. Dadweynaha y 2. Gaar ah y 3. Mid kale fadlan sheeg \_\_\_\_\_

46. Sharaxaad ka bixi hoyga adiga oo tixgelinaya muhiimadda boos ee nolol maalmeedkaaga.

Liiska boosaska muhiimka ah ee aan muhiim ahayn	Dhexdhexaad sare	46.1	Aad u sareeya		
Goobta lagu nool yahay 1y 4y 46.2 Goobta lagu seexo 46.3 Goobta wax lagu karsado			5y		
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y
	1y	2y	3y	4y	5y

47. Sideed ku sifayn lahayd ilaalinta hoyga ee ka ilaalinta hoyga 47.1

Qabow	Faqiir	Cadaalad	Ku qanci	Wanaagsan	Aad U Fiican	Aad U Fiican
	1y	2y	3y	4y	5y	6y
47.2 Qoyaanka	1y	2y	3y	4y	5y	6y
47.3 Kulayfka	1y	2y	3y	4y	5y	6y
47.4 Roob	1y	2y	3y	4y	5y	6y
47.5 daad	1y	2y	3y	4y	5y	6y
47.6 Dabayl	1y	2y	3y	4y	5y	6y
47.7 kale, _____	1y	2y	3y	4y	5y	6y

48. Sideed ku sifayn lahayd hoygaga la xidhiidha alaabta dhismaha Hoyga Element Poor

	Cadaalad	Ku qanacsan	V Good	heer sare ah
48.1 Qaabka	1y	2y	3y	4y 5y 6y
48.2 gidaarada	1y	2y	3y	4y 5y 6y
48.3 Dabaqa	1y	2y	3y	4y 5y 6y
48.4 Saqafka/ Saqafka	1y	2y	3y	4y 5y 6y
48.5 Furitaanka	1y	2y	3y	4y 5y 6y
48.6 Qayb	1y	2y	3y	4y 5y 6y
48.7 Mid kale, _____	1y	2y	3y	4y 5y 6y



49. Sideed ku sifayn lahayd hoygaga xagga dhismaha Farsamooyinka **Shelter Element Element Poor**

	Cadaalad	Ku qanacsan V	Good	heer	saf	ah
49.1 Qaab dhismeedka	1y	2y	3y	4y	5y	6y
49.2 gidaarada	1y	2y	3y	4y	5y	6y
49.3 Dabaqa	1y	2y	3y	4y	5y	6y
49.4 Saqafka/ Saqafka	1y	2y	3y	4y	5y	6y
49.5 Furitaanka	1y	2y	3y	4y	5y	6y
49.6 Qayb	1y	2y	3y	4y	5y	6y
49.7 Mid kale, _____	1y	2y	3y	4y	5y	6y

4.5 Helitaanka- Guryuhu kuma filna haddii baahiyaha gaarka ah ee dadka danyarta ah iyo kuwa la takooro aanay ahayn lagu xisaabtamayo.

50. Sideed u qeexi lahayd helitaanka adeeggan soo socda iyadoo la tixgelinayo mid liidata ama la takooray Kooxda

Hoyga iyo Isku-dhafka 50.1	Faqiir Cadaalad	Ku Qanci Wanaagsan	Aad U Fiican	Aad U Fiican	
Gelida Hoyga	1y 2y	3y	4y	5y	6y
50.2 Qolka musqusha	1y 2y	3y	4y	5y	6y
50.3 Xarunta waxbarashada	1y 2y	3y	4y	5y	6y
50.4 Xarunta Caafimaadka	1y 2y	3y	4y	5y	6y
50.5 Xarunta wax iibsiga	1y 2y	3y	4y	5y	6y
50.6 Xarunta diinta ee aagga cibaadada 1y 2y	1y 2y	3y	4y	5y	6y
50.7 Garoonka ciyaaraha / Garoonka ciyaarta	1y 2y	3y	4y	5y	6y
iyoo waayeelka	1y 2y	3y	4y	5y	6y
50.9 Adeegga Amniga sida xafiiska booliiska	1y 2y	3y	4y	5y	6y
50.10 xarunta maamulka	1y 2y	3y	4y	5y	6y

51 Maxay yihiin 3da caqabaddood ee ugu sarreeya ee ku saabsan gelitaanka adeegga si gaar ah loogu talagalay shakhsiyaadka nugul (carruurta, dadka waayeelka ah, iyo dadka naafada ah) gudaha guryaha?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

52 Maxay yihiin 3da caqabaddood ee ugu sarreeya ee ku saabsan gelitaanka adeegga si gaar ah loogu talagalay shakhsiyaadka nugul (carruurta, waayeelka, iyo dadka naafada ah) gudaha xarunta hoyga?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

4.6 Goobta - guryuhu kuma filna haddii ay ka go' do fursadaha shaqada, adeegyada daryeelka caafimaadka, dugsiyada, xarumaha daryeelka carruurta iyo goobaha kale ee bulshada, ama haddii ay ku yaalliin meelaha wasakhaysan ama khatarta ah.

53 Ma u aragtaa in gurigaaga ku dhex yaal xerada uu yahay mid ammaan ah oo ammaan ah? y 1. Haa y 2. Maya  
53.1 Sidee/ Sabab?

\_\_\_\_\_

54 Hoygaagu ma ku yaalaa gudaha ama agagaarka?

Goobta Cutubka Guriyeynta	Haa	Maya Haa	Day Haa	tahay, Sheeg
54.1 Aagga wasakhaysan				
54.2 Aagga Khatarta leh				
54.3 Meesha cidhiidhiga ah				

55 5-tii sano ee la soo dhaafay ma kula kulantay waxyaabaha soo socda gudaha xerada?

Badbaadada Unugga Guriyeynta ee ku wajahan	Haa	Maya Haa	Day Haa	tahay, Sheeg



55.1 Khatarta Dabka			
55.2 Guryo shil ah oo dumay / dumay 55.3 Dhul garlir / dhulganir			
55.4 Khatar koronto / shilal 55.5 Daad			
55.6 Dabayl			
culus			
55.7 Cudur faafa 55.8 Macaluul			

56 Ma u aragtaa qaybta guriyeynta iyo guud ahaan xerada kaamka inay xor ka yihiin deegaanka soo socda wasakhaysan?

Badbaadada wasakhawga deegaanka	Haa	Maya Hadday Haa tahay, Sheeg
56.1 Dareere/Wasakhawga Biyaha		
56.2 Wasakhawga		
Hawada 56.3		

Wasakhawga Sawaxanka 57 tii sano ee la soo dhaafay adiga ama xubnaha kale makula kulmeen waxyaabaha soo socda gudaha xerada?

Dhibaatooyinka	Had iyo	Badanaa Marmar	Marmar	2y	3y	4y	5y
Bulshada 57.1 Dhaca/	jeer 1 y		3 y	4 y	5 y		
Xatooyo 57.2 Xadgudub	1 y	2 y	3 y	4 y	5 y		
Jireed 57.3 Isdil ama dil	1 y	2 y	3 y	4 y	5 y		
57.4 Balwad	1 y	2 y	3 y	4 y	5 y		
57.5 dhilaysiga	1 y	2 y	3 y	4 y	5 y		
57.6 tuugsi	1 y	2 y	3 y	4 y	5 y		

4.7 Ku Filanaanshaha Dhaqanka- Guryeynta kuma filna haddii aysan ixtiraamin oo aysan tixgelin muujinta aqoonsiga dhaqameed.

58 Xaalada guriyeynta kaamka miyay ogolanaysaa isdhexgalka bulshada iyo xidhiidhka bulsho ee saaxiibadaa qaxootiga? y1. Haa y 2. Maya  
58.1. Sidee/ Sabab?

---



---



---

59 Miyaad ku qabataa waxqabadyo bulsho iyo dhaqameed xerada dhexdeeda, sida meelaha la wadaago, meelaha madaddaalada, ama meelaha cibaadada? y 1. Haa y 2. Maya 3.  
59.1 Sidee/ Sabab?

---



---



---

60 Ma u fiirsataa qaybta guryeynta iyo guud ahaan deegaanka kaamka tixgalinta asalka iyo dhaqanka degan? y 1. Haa y 2. Maya 60.1. Sidee/ Sabab?

---



---



---

61 Miyaad aragtay wax wada-shaqayn ah oo laga sameeyay qaybaha guryaha iyo xaafad la leh bulshada deegaanka si kor loogu qaado doorbidka dhaqanka bulshada? y 1. Haa y 2. Maya  
60.2. Sidee/ Sabab?

---



---



---



**Qaybta 5. Rajada Mustaqbalka iyo Hamiga**

61 Shanta ilaa tobanka sano ee soo socda sidee u qiimeeyaa xaaladaada nololeed ee hadda?

1. y Horumar wayn
2. y Horumar dhexdhexaad ah
3. y Horumar yar
4. y horumar la'aan
- yKa sii daran hadda
- 6.Waa maxay sababta

---

---

---

62 Shanta ilaa tobanka sano ee soo socda maxay tahay cabsidaada ugu weyn ee la xiriirta xaaladaada nololeed ee hadda qaxooti ahaan xeradan? Fadlan sheeg ugu yaraan saddex

---

---

1.2.3.

63 Shanta ilaa tobanka sano ee soo socda maxay tahay rajadaada ugu weyn ee la xiriirta xaaladaada nololeed ee qaxooti ahaan xeradan? Fadlan sheeg ugu yaraan saddex

1. \_\_\_\_\_

2.3. \_\_\_\_\_

64 Shanta ilaa tobanka sano ee soo socda maxay yihiin hamigaaga ugu wayn ee la xidhiidha xaaladaada nololeed ee qaxooti ahaan xeradan? Fadlan sheeg ugu yaraan saddex

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Institute of Architecture, Dhismaha Dhismaha iyo Horumarinta Magaalada (EiABC) Jaamacadda Addis Ababa, Ethiopia

Habaynta Hoyga Qaxootiga iyo Qaababka Dejinta: Daraasad ku Saabsan Ku Filanaanshaha Guryaha ee Xerada Qaxootiga ee Keberibeya Jijiga



**EiABC**

**Foomka Oggolaanshaha La Wargeliyay**

**Hordhac**

Magacaygu \_\_\_\_\_ Waxaan la socdaa Hosing iyo kooxda cilmi-baarista ardayda horumarka waara wuxuu ka socdaa Machadka Dhismaha Dhismaha, Dhismaha Dhismaha iyo Horumarinta Magaalada (EiABC) ee Jaamacadda Addis Ababa, Itoobiya. Waxaan jeclaan lahaa inaan kaala hadlo qaabaynta Hoyga Qaxootiga iyo Qaababka Dejinta ee Xerada Qaxootiga ee Keberibeya Jijiga. Waxaan ka shaqeyneynaa si aan u wanaajino ku filnaanta hoyga qaxootiga iyo dejinta annagoo barana baahida isticmaalaha dhamaadka iyo caqabadaha waaweyn ee ay la kulmaan maamulayaasha. Waxaan ku waydiisanaynaa inaad caawiso habaynta xerada hoyga qaxootiga iyo daraasada qaabka dejinta anoo aaminsan in fikraddaadu aad u qiimo badan tahay isticmaalaha ugu dambeeya.

Haddii aadan rabin inaad caawiso, waan ixtiraamaynaa doorashadaada inaad sidaas samayso

Haddii aad ogolato, waxaan jeclaan lahayn inaan duubno wareysiga. Waxaad xaq u leedahay inaad diido inaad ka jawaabto su'aal kasta

haddii aad rabto inaad soo afjarto waraysiga mar uun xor baad u tahay inaad sidaas samayso

Marka aad saxiixdo heshiiska waxaan sii wadi doonaa wareysiga waxaana ku weydiin doonaa su'aalo muhiim ah. Waxay igu qaadan doontaa qiyaastii 45-60 daqiiqo inaan dhammaystiro a= su'aalahayga

• Waxaanu ku dadaali doonaa inaanu xogtaada ilaalino marka aanu faafinno natiijada sida loo baahan yahay

Wixii macluumaad dheeraad ah, waxaad kala xidhiidhi kartaa Marwo Keniko Duguma talefoonka +251 910929649, Email

[keniko.duguma.edu@gmail.com](mailto:keniko.duguma.edu@gmail.com)

**Ogolaanshaha**

Ogolaanshaha	Haa waan samayaa	Maya anigu ma sameeyo
Ma ogolatay in lagu wareysto?		
Ma ogolatay in codka waraysigan la duubo?		
Ma ogolatay in la duubo?		
Ma aqbashay in lagu sawiro?		

**Saxiixa dukumeentiga, waxaan cadeynayaa inaan si buuxda u fahmay macluumaadka la ii sharaxay. Waxaan sidoo kale oggolahay beddelkeeda si aad uga qaybgasho iyada oo aan wax lacag ah bixin ama magdhow ah/ dhaqaale ah ama si kaleba lagu , inaan doorto inaan ka qaybqaato taageerayo ujeedada mashruuca. Sidaa darteed waxaan siiyay oggolaanshaha abaabulaha mashruuca (ay ku jiraan laakiin aan ku xaddidnayn EiABC iyo daneeyayaasha kale) si ay u faafiyaan sawiradeyda, fiidiyowiyada, duubista maqalka iyo ama wareysiyada cilmi-baarista iyada oo loo marayo warbaahinta elektaroonigga ah ama daabacadaha labadaba heer qaran iyo caalamiba.**

Magaca ka qaybqaataha \_\_\_\_\_

Taariikhda \_\_\_\_\_

Saxiixiyada \_\_\_\_\_