

Beyond Humanitarian Architecture and Urbanism: A Response to Forced Displacement in Tigray, Ethiopia

Samuel Bekele Jote

Iuav University of Venice

School of Doctoral Studies

Doctoral Programme in Architecture, City and Design - International Track

XXXV cycle



June 2026

Beyond Humanitarian Architecture and Urbanism: A Response to Forced Displacement in Tigray, Ethiopia

Samuel Bekele Jote [293694]

Iuav University of Venice

School of Doctoral Studies

Doctoral Programme in Architecture, City and Design - International Track

XXXV cycle

Supervisors

Associate Professor arch. Dr. Jacopo Galli

School of Doctoral Studies, Iuav University of Venice

Professor Domenico Patassini

School of Doctoral Studies, Iuav University of Venice

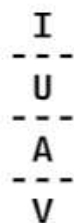
Director of the School of Doctoral Studies

Professor Dr. Maria Chiara Tosi

External Referees

Association Professor arch. Dr. Manlio Michieletto, German University in Cairo

Association Professor arch. Fasil Giorghis, Addis Ababa University



Università
Iuav
di Venezia

I00
1926-2026

June 2026

Publications and Conference Presentations from the Research

1. **Samuel Bekele**, (2025). Sustainable vernacular architecture in Tigray, Northern Ethiopia: Lessons from hidmo house to contemporary practices. Second International Conference on Engineering and Technology (ICET-2025), August 20–21, 2025, Mekelle University, Mekelle, Tigray, Ethiopia. <https://icet.mu.edu.et/>
2. **Bekele, S.**, Patassini, D., & Galli, J. (2025). Internally displaced in Tigray (Northern Ethiopia): Management and sustainability of shelter and settlement. *Progress in Disaster Science*, 28, 100459. <https://doi.org/10.1016/j.pdisas.2025.100459>
3. **Bekele, S.** (2025). Moving from pilot to scale: A comparative study of Innovate Shelter and Settlements Response Project for urban IDPs in Mekelle and Adigrat, Tigray, Ethiopia. In *Proceedings of REAL CORP 2025, 30th International Conference on Urban Development, Regional Planning and Information Society*, Graz, Austria. <https://doi.org/10.48494/realcorp2025.1065>
4. **Bekele, S.**, Patassini, D., & Galli, J. (2025, January 21–23). Urban IDP in Tigray, Northern Ethiopia: Appraisal of area-based approach pilot project for shelter and settlement response in Mekelle. In *Book of abstracts of the 20th International Association for the Study of Forced Migration (IASFM 20): Forced displacement in an urbanizing world*, Yogyakarta, Indonesia. <https://oro.open.ac.uk/102501/1/IASFM20-Book-of-Abstract-16-Jan-2025.pdf>
5. Jacopo Galli, **Samuel Bekele Jote**, Domenico Patassini (2024, October), Urban IDP in Tigray Northern Ethiopia: Appraisal of area-based approach pilot project for shelter and settlement response in Mekelle. Paper presented at the African Urbanisms International Conference, University of the Witwatersrand, Johannesburg, South Africa. <https://www.urban-sdg-school.org/african-urbanisms/programme/session-1-galli>
6. **Samuel Bekele Jote**, Domenico Patassini, Jacopo Galli (2024, October). Humanitarian urbanism in IDP camps. An assessment of management and spatial dynamism in the case of SC4, Mekelle. Paper presented at the African Urbanisms International Conference, University of the Witwatersrand, Johannesburg, South Africa. <https://www.urban-sdg-school.org/african-urbanisms/programme/session-11-bekele>
7. **Bekele, S.** (2024, April). Emergency shelter construction for internally displaced persons in Tigray, Northern Ethiopia: Appraisal of typology of shelter, settlement, delivery, and sustainability. In *Proceedings of the 60th Annual International Conference of the Associated Schools of Construction (ASC), PhD-Doctoral Forum*, Auburn University, Auburn, AL, USA. https://easychair.org/publications/volume/ASC_2024
8. **Samuel Bekele J.** (2023) Neighborhood Approach Piloting Project: An alternative emergency shelter response for IDPs in urban areas - The case of Mekelle, Tigray, Ethiopia. IOM on the behalf of Global Shelter Cluster. *Shelter projects 9th edition*, page 17-21. <https://www.shelterprojects.org/shelterprojects9/ShelterProjects9-2023-Web.pdf>

Acknowledgements

Pursing a PhD study is not an easy journey-not merely because of the academic requirements, but more so due the unexpected life challenges that may arise along the way. My own path was interrupted twice-first by global COVID-19 pandemic, and then devastating war in Tigray (Ethiopia) happened from 2020-2022. During the two years' war, I was in Mekelle, Tigray, with my family, enduring a life under siege and blockade. Those years were marked by extreme hardship, uncertainty, and the daily struggle for survival from shelling, bombardment and drone attacks. One of the terrifying moments occurred in December 2021, when a drone strike hit just less than 200 meters away from our home. I will not forget the fear in my wife and my kid eyes as we lived through that moment. Overtime, they become accustomed to the sounds of drones, shelling, and counterattacks-something no child should ever have to experience. Yet, by the grace of Almighty God, I emerged from that dark period with glimmer of hope still intact.

Following the peace agreement, I was able to resume my PhD study in the 2022/2023 academic year. Given the profound impact of the war, I decided to leave my original research topic-which, under the circumstances, felt too disconnected from the realities we had endured-and instead, developed a new, more relevant research area focused the war and its impact on the built environment and the people. This shift not only reflected the new realities on the ground but also allowed me to contribute meaningfully to the post-war recovery discourse. However, returning to academic life in post-war context came with its own set of challenges - emotional, psychological, and practical. The transition from survival to academic study was not easy, but through faith, perseverance, and support, I was able to continue. I give all the praise to Almighty God for his mercy, protection, and countless blessings throughout this long journey. It is only by his grace that I have reached this milestone, and for that, I am deeply thankful.

I would also like to express my sincere and heartfelt gratitude:

- To my supervisors Prof. arch. Dr. Jacopo Galli, and Prof. Domenico Patassini for their invaluable guidance, encouragement, and unwavering support through the entire study period. Their expertise, constructive feedback, and continuous motivation have played a crucial role in shaping both the direction and quality of my work. I am deeply appreciate the time, effort, and knowledge they generously shared with me at every stage of this journey. Specially during my stay in Venice and Padova.
- To my beloved family and friends for their full support, endless patience, steadfast belief in me. Their constant encouragement, understanding, and trust have been a source of strength throughout this journey. without their presence-both near and far-this achievement would not have been possible. Special and great thanks should go to my wife Feven Tekeste Gebremeskel who scarified through the process but understood at all time. My children, Naiher, Naol, and Nayomi, who lost my special attention and with whom I spent less time, deserve both my apologies and my gratitude.

My father, Bekele Jote, whose moral and financial support has been invaluable, also deserves my deepest thanks. I extend my special thanks to my mother, Zewdu Gebremikael Gebremeskel (*Zendey/Zendo*); my sister, Rozina; my brothers, Kibri, Abiy, and Mewael; and my brother-in-law, Mewael Gebregiorgis Tesfamariam, for their invaluable support. My sister-in-law, Hiwet Tekeste, also deserves special thanks.

- Finally, to Mekelle University, Ethiopian Institute of Technology-Mekelle (EiT-M), Faculty of Architecture and Urban Planning and Iuav University of Venice - School of Doctoral Studies, for their financial support and institutional coordination, which enabled me to resume and continue my academic journey following the devastating war in Tigray. Their leadership commitment to my education during such a challenging post-war period was instrumental in allowing me to regain focus and rebuild my research path after a time of profound disruption. I am also indebted to the travel subsidy support from Mekelle University, NORAD (The Norwegian Agency for Development Cooperation) project. Specially thanks also to Iuav University of Venice for providing financial support for daily subsistence and accommodation during my stay in Italy. Finally, I wish to express my gratitude to the Director of the School of Doctoral Studies, Professor Maria Chiara Tosi, and Dr. Gianfranco Pozzer, as well as to the administrative staff—Claudia Rossi, Adriana Gatto, and Neva Borella—for their warm hospitality and kind assistance throughout my time at Iuav University of Venice.

Samuel Bekele Jote

June 2026

Keywords

Humanitarian architecture and urbanism

- Shelter
- Settlement
- Seba Care 4 IDP Camp
- Mai Dimu IDP Camp

War and conflict

- Damage
- Loss
- Need

Forced displacement

- Internally Displaced Persons (IDPs)
- Refugees
- Returnees
- Host communities

Humanitarian response phases

- Humanitarianism
- Emergency
- Relief
- Recovery
- Reconstruction

Vernacular architecture

- *Hidmo* house
- *Critical regionalism*
- Sustainability
- Tigray

Abstract

War and conflict are among the most significant man-made disasters affecting Africa, causing widespread destruction of the built environment and the forced displacement of millions. In response, various humanitarian actors play pivotal roles in supporting communities living under precarious conditions, alongside the efforts of the displaced themselves. Humanitarian architecture and urbanism—as a conceptual and theoretical framework—together with aid organizations, are critical in providing emergency shelter and settlement solutions for affected populations during the immediate aftermath. These interventions are followed by medium- and long-term relief, recovery, and reconstruction efforts aimed at restoring lives, infrastructure, and urban systems. This research focuses on Internally Displaced Persons (IDPs), returnees, and war-affected communities resulting from the two-year war in Tigray, Ethiopia (2020–2022). It investigates spatial responses implemented by humanitarian actors and affected communities, with particular attention to the production of confined and temporary spaces, including emergency shelters and both spontaneous and planned settlements. The study tests the hypothesis that sustainable humanitarian architecture and urbanism responses—spanning emergency shelter, settlement planning, and reconstruction—are conceptually and operationally under stress in practice, and that they can be more effectively informed by vernacular housing traditions, indigenous spatial patterns, and the surrounding landscape. Simultaneously, it examines the value added by vernacular architecture in post-war reconstruction efforts and how the introduction of standardized emergency shelters in a war-torn context can disrupt local building practices and sustainability, potentially hindering long-term recovery and reconstruction processes. A multi-sited ethnographic and longitudinal approach using mixed methods was adopted, combining an extensive literature review with a series of fieldwork activities conducted at multiple case study sites across Tigray. These sites range from individual households and emergency shelters to informal and planned displacement camps, collective centers, and host communities. The study explores the spatial, socio-economic, management dimensions and adaptations of war-affected communities to understand the complexities of post-conflict shelter, settlement dynamics, and reconstruction processes. The findings are organized into four thematic areas. First, the research identifies and analyzes existing typologies of shelters, settlements, architectural interventions, and management practices implemented both by humanitarian organizations and by IDPs themselves across urban and rural settings. Second, it presents an in-depth investigation of two planned displacement camps and their spatial, social, and economic interactions with adjacent peri-urban and urban areas in the cities of Mekelle (Seba Care 4 camp) and Shire (Mai Dimu camp), revealing emerging dynamics of post-war humanitarian urbanism. Third, the study examines war-damaged housing reconstruction practices and proposes context-sensitive models for future rebuilding efforts that integrate vernacular knowledge with NGO-led reconstruction initiatives. Finally, it highlights the technological aspects of vernacular architecture, demonstrating how traditional construction

knowledge can inform and strengthen humanitarian interventions across the emergency, relief, recovery, and reconstruction (ERRR) phases, as well as contemporary practices.

Keywords: *Humanitarian Architecture and Urbanism; Forced Displacement; Emergency Shelter; Displacement Camps and Settlements; Vernacular Architecture; Post-Conflict Reconstruction; Tigray War (2020–2022); Ethiopia.*

Table of Contents

Introduction: Displacement and confined spaces	10
1. Motivation: Humanitarian architecture and urbanism shaped by spontaneity and traditional approaches to shelter and settlement	10
2. Research hypothesis.....	22
3. Environment: Tigray between peace and war.....	28
4. Design and research methodology	40
Chapter One: Emergency Humanitarian shelter and settlement.....	51
1.1. Humanitarian Emergency: The Circle of Tragedy.....	51
1.2. Need, demand, and reaction: Addressing unmet needs	58
1.3. Humanitarian management system (HMS).....	67
1.4. Combined and Integrated actions	83
1.4.1. Physical transformation: ‘from non-place to place ‘	83
1.4.2. Functional-self production of space	128
Chapter Two: Relief and recovery through Planned IDP camps	134
2.1. Humanitarian camp design and planning protocols.....	134
2.2. Seba Care 4 IDP camp (Mekelle).....	147
2.2.1. Settlement and growth	148
2.2.2. Layout and demographic profile	150
2.2.3. Facilities, services and infrastructures	152
2.2.4. Consumption and market transaction	171
2.2.5. Road and drainage.....	172
2.2.6. Camp design and planning features: beyond a morphological perspective.....	173
2.2.7. Adaptive governance.....	176
2.2.8. SC4 within local urban-rural environment	178
2.2.9. Camp’s inertia and peri-urban growth.....	180
2.2.10. Scenarios.....	187
2.3. Mai Dimu IDP camp (Shire).....	194
2.3.1. Settlement and growth	194
2.3.2. Layout and demographic profile	197
2.3.3. Facilities, services and infrastructures.....	198

2.3.4. Consumption and market transaction	209
2.3.5. Road and drainage.....	210
2.3.6. Camp design and planning features.....	212
2.3.7. Adaptive governance.....	217
2.3.8. Camp’s inertia and peri-urban growth.....	222
2.3.9. Scenarios.....	227
2.4. Shifting between SC4 and Mai Dimu IDP camps.....	228
2.5. From “Camps as a Last Resort” to an “Urban-First” Approach: Reframing Humanitarian Shelter and Settlement Strategies.....	232
2.5.1. Area-Based (Neighborhood) Approach: A pilot project for urban IDPs in Mekelle	233
2.5.2. Scaling Up the Area-Based (Neighborhood) Approach Project in Adigrat	261
Chapter Three: Post-war housing reconstruction	273
3.1. War-induced housing damage, loss, and humanitarian needs	273
3.2. Housing reconstruction.....	283
3.3. Housing reconstruction programs: three approaches	284
3.4. NGO-led housing reconstruction experiences	288
3.4.1. Case study_1: Hawzen.....	293
3.4.2. Case study_2: Gulomekada	297
3.4.3. Case study_3: Bora	301
3.5. Proposals for housing reconstruction in Tigray.....	304
Chapter Four: Lessons from spontaneous adaptation and vernacular ‘hidmo’ architecture .	309
4.1. ‘Hidmo’ culture and practices.....	309
4.1.1. Vernacular architecture of Tigray: Hidmo technology	311
4.1.2. Contemporary vernacular architecture in Tigray	338
4.2. Revisiting the humanitarian cycle	346
4.3. Building Back Better and vernacular architecture	347
Conclusion: Towards adaptive humanitarian architecture and urbanism.....	350
Final discussion, conclusions, and recommendations	350
References	362

ACRONYMS and ABBREVIATIONS

5W – Who does What Where When for Whom

ABA – Area-Based Approach

ALNAP – Active Learning Network for Accountability and Performance

AoR – Area of Responsibility

BBB – Build Back Better

BHA – Bureau for Humanitarian Assistance

BOLSA – Bureau of Labor and Social Affairs

BoQ – Bill of Quantities

BOSAR – Bureau of Social Affairs and Rehabilitation

CBI – Cash-Based Intervention

CC – Climate Change

CCCM – Camp Coordination and Camp Management

CERF – Central Emergency Response Fund

CFR – Cash for Rent

CGI – Corrugated Galvanized Iron

CITG – Commission of Inquiry on the Tigray Genocide

CoHA – Cessation of Hostilities Agreement

CSO – Civil society organizations

DaNA – Damage and Needs Assessment

DRMC – Disaster Risk Management Commission

DRR – Disaster Risk Reduction

DTM – Displacement Tracking Matrix

EDRMC – Ethiopia Disaster Risk Management Commission

ECHO – European Civil Protection and Humanitarian Aid Operations

EPC – Emergency Post-Crisis

ERC – Emergency Relief Coordinator

ESNFI – Emergency Shelter and Non-Food Item

FDRE – Federal Democratic Republic of Ethiopia

FGD – Focus Group Discussion

FHH – Female-headed households

GAUC – Global Alliance for Urban Crises

GBV – Gender-based violence

GCCG – Global Cluster Coordination Group

GDP – Gross domestic product

GSC – Global Shelter Cluster

GRID – Global Report on Internal Displacement
GSTS – Global Society of Tigray Scholars and Professionals
HC – Host Communities
HCB – Hollow Concrete Block
HCT – Humanitarian Country Team
HDP – Humanitarian-Development-Peace
HH – Household
HIIK – Heidelberg Institute on International Conflict Research
HLP – Housing, Land, and Property
HNO – Humanitarian Needs Overview
HPC – Humanitarian Programme Cycle
HoSo – Head of Sub-office
IASC – Inter-Agency Standing Committee
ICCG / ISCG - Inter-Cluster or Inter-Sector Coordination Group
IDMC – Internal Displacement Monitoring Centre
IDPs – Internally Displaced Persons
IFRC – International Federation of Red Cross and Red Crescent Societies
IGA – Interim Government Administration of Tigray
IOM – International Organization for Migration
IRA – Interim Regional Administration of Tigray
IUAV – Iuav University of Venice
KII – Key Informant Interviews
MEAL – Monitoring, Evaluation, Accountability, and Learning
MHPSS – Mental Health and Psychosocial Support
MIRA – Multi-Cluster/Sector Initial Rapid Assessment
MU – Mekelle University
NA – Neighborhood Approach
NFI – Non-Food Items
NGO – Non-governmental Organizations
INGO – International Non-governmental Organizations
OSSHD – Organization of Social Services, Health and Development
PDM – Post-Distribution Monitoring
PhD – Doctor of Philosophy
PWD – Persons with disability
RRR – Response Recovery Resilience (3R)
SAG – Strategic Advisory Group
SC4 – Seba Care Four

SDG – Sustainable Development Goals
SMA – Site Management Agency
SOP – Standard Operating Procedure
SRK – Shelter Repair Kits
S&S – Shelter and Settlement
TDF – Tigray Defense Forces
TPLF – Tigray People’s Liberation Front
TRRP – Tigray Recovery and Reconstruction Plan
TWG/TWiG – Technical Working Groups
UNDP – United Nations Development Programme
UNFPA – United Nations Population Fund
UNHCR – United Nations High Commissioner for Refugees
UNOCHA – United Nations Office for the Coordination of Humanitarian Affairs
UNOPS – United Nations Office for project services
USAID – United States Agency for International Development
VA – Vernacular Architecture
WASH – Water, Sanitation, and Hygiene
WFP – World Food Programme
WGFS – Women and Girls Friendly Space

List of Tables

Table 1: Illustration of humanitarian principles and adaptive practices for iconographic analysis in an IDP camp (Source: author’s illustration, updated and adapted from Ficcadenti,2024)	20
Table 2: Conceptual map in timeline format: Tigray and the cyclical pattern of conflict and famine (1974-2022) (Source: author’s compilation 2024)	52
Table 3: Shelter needs, targets, reached, and unmet needs in Ethiopia (2021-2024) (Source: ESNFI annual reports)66	
Table 4: Humanitarian System Architecture at Global and National/Country Levels (Source: author’s illustration by author 2024).....	71
Table 5: Characteristics comparison of family tent and self-standing (UNHCR)	99
Table 6: Shelter type and camp features based on criteria (Source: author, 2024)	111
Table 7: Settlement typology: Theory, principles, and practice in Tigray (Source: author,2024).....	114
Table 8: Top six major urban areas hosting IDPs (Source: IOM DTM, 2021).....	117
Table 9: Matrix of identified shelter types and settlement options (S. Bekele et al., 2025)	126
Table 10: Settlement typologies and shelter options in Tigray (Source: based on ESNFI,2022)	128
Table 11: Camp responsible parties (Source: adopted by author from the UNHCR Handbook for Emergencies) ...	137
Table 12: Planned IDP camps in Tigray (Sources: 250217_cccmcluster_masterlist)	140
Table 13: Refugee camps in Tigray prior to the outbreak of the war (Source: Human Rights Watch ,2021)	143
Table 14: Population by age and gender of the camp (Source: CCCM cluster Ethiopia, service monitoring camp profile July 2023)	151
Table 15: Humanitarian services and responsible agencies (Source: IOM, 2023)	154
Table 16: The matrix of common diseases, cause and services in SC4 camp (Source: IOM health)	168
Table 17: Sectoral standards in SC4 (Source: service monitoring camp profile as of July 2023 by CCCM).....	169
Table 18: Population by age and gender of the camp (CCCM cluster Ethiopia, service monitoring camp profile)..	198
Table 19: Humanitarian services and responsible agencies (Source: IOM,2023)	200
Table 20: Shelter partners commitment in Mai Dimu IDP camp (Source: IOM, CCCM site plan)	200
Table 21: Major challenges in shelter (Source: author,2025).....	202
Table 22: Camp WASH requirements as per established standards (Source: IOM CCCM)	205
Table 23: UNHCR standard for camp design and planning based on ‘module’ approach (UNHCR, 2007).....	214
Table 24: <i>Service provision based on UNHCR standard for camp design and planning (UNHCR, 2007)</i>	214
Table 25: Camp settlement, type of shelter and households (Source: IOM, CCCM 2024)	215
Table 26: Committees and leaderships in the camp (Source: author based on ground assessment)	222
Table 27: Comparison of the two camps based on key characteristics (Source: author,2024)	229
Table 28: Area-Based Approach Shelter and Settlement Responses: Three Intervention Scenarios	243
Table 29: Scale-up categories and implementation routes (Source: author’s compilation from literature,2025)	262
Table 30: Literature review of definitions and types of scaling up.....	264
Table 31: Gender-Disaggregated HH and individual (the pilot project Mekelle).....	268
Table 32: Gender-Disaggregated HH and individual (the scaleup project Adigrat).....	270
Table 33: Shared characteristics among cases (Source: author,2024)	271
Table 34: Divergent characteristics across cases (Source: author,2024)	271
Table 35: War-induced damage per units in Tigray, Ethiopia (World Bank, 2022).....	275
Table 36: Damage in cost in Tigray, Ethiopia (World Bank, 2022)	275
Table 37: Shelter reconstruction based on community-driven, climate-appropriate, and environmentally responsible (Ethiopia ES/NFI, 2025)	285
Table 38: Case study of NGO-led housing reconstruction	291
Table 39: Staples in NGO-led housing reconstruction in Tigray as recommended by ESNFI cluster	291
Table 40: Hidmo house and building components	315

List of Figures

Figure 1: Conceptual and theoretical approach and linkage to humanitarian architecture and urbanism theory (Source: author,2024).....	14
Figure 2: Transformation from hidmo housing to multi-phase humanitarian shelter design (Source: author’s illustration, 2024).....	18
Figure 3: IDPs in Tigray and Ethiopia (IOM, 2022).....	26
Figure 4: Research problem articulation (Source: author 2023).....	27
Figure 5: Map of Tigray region in Ethiopia (OCHA, 2021b).....	30
Figure 6: Intensity of the Tigray war (2020-2022). (Source: conflict barometer, HIIK,2020-2022).....	31
Figure 7: Tigray war and local and international actors (Annys et al., 2021).....	32
Figure 8: Global War and conflict affected areas (Source: Global conflict tracker 2023).....	33
Figure 9: Map of Tigray, Ethiopia with accessibility and displacement patterns (IDPs and refugees) (OCHA, 2021a).....	34
Figure 10: Internal displacement caseload in Tigray, with high concentrations in Mekelle and Shire, July 2021 (Source: IOM, 2021).....	36
Figure 11: Levels of accessibility and areas where the Emergency Site Assessment was conducted across Tigray (Source: IOM, 2021).....	37
Figure 12: Relational abstraction of the shelter-settlement matrix and vernacular architecture within ERRR practices (Source: author, 2025).....	43
Figure 13: Theoretical and conceptual relationship among key concepts (Source: author,2024).....	45
Figure 14: Thesis conceptual framework and research flow (Source: author, 2025).....	49
Figure 15: Real GDP Growth and GDP per Capita in Tigray (Ethiopia): Natural vs. Man-Made Crises (Source: AfDB 2021).....	53
Figure 16: IDPs in Ethiopia since 2017 (Source: IOM DTM, July 2025).....	54
Figure 17: Circle of tragedy: disaster circle diagram of different countries (Lobos, 2011).....	56
Figure 18: Tigray war and complex humanitarian emergency: concept and real-world application (Anderson & Gerber, 2018).....	58
Figure 19: Humanitarian shelter needs in Ethiopia, 2021 (OCHA, 2021c).....	61
Figure 20: Humanitarian shelter needs in Ethiopia, 2024 (UNOCHA, 2024).....	62
Figure 21: Humanitarian shelter and other sectors need in Tigray (UNOCHA, 2024).....	63
Figure 22: Shelter target and responses in Tigray and Ethiopia, 2024 (Ethiopia ESNFI, 2025).....	64
Figure 23: Shelter response gap in 2024 (Ethiopia ESNFI, 2025).....	66
Figure 24: Global cluster lead agencies and phases of disaster management cycle (Source: IASC,2015).....	69
Figure 25: Coordination structure of shelter cluster at Global and country levels (Source: GSC).....	70
Figure 26: Humanitarian coordination architecture of shelter and settlement: Global, National and Tigray levels (Source: author’s illustration,2024).....	75
Figure 27: New and merged global cluster and cluster lead agencies (Source: IASC March,2026).....	76
Figure 28: Shelter cluster partners and donors in Tigray, Ethiopia (Source: ESNFI cluster strategy 2025-2027).....	77
Figure 29: Humanitarian actors adapting their agendas to the political realities of war (adapted from Antonio Donini (2012).....	79
Figure 30: Humanitarian space and access in Tigray (Source: OCHA 2021).....	79
Figure 31: Humanitarian agency tarpaulins used side by side for shelter maintenance in Mekelle and Shire camp in Tigray illustrating the interplay of humanitarian politics among partners at the field and management levels. (Source: author, 2023 and 2025).....	82
Figure 32: Shelter and settlement options by ESNFI cluster, Ethiopia (Source: Ethiopia ES/NFI cluster 2022).....	85
Figure 33:ES/NFI Response Strategy (Source: ES/NFI cluster, august 2023).....	85
Figure 34: Overlapping definitions and process of post-disaster shelter (IFRC, 2013).....	89
Figure 35: Classification of Shelter Types in Tigray (Source: author’s compilation based on field visit and ESNFI cluster, 2022).....	90
Figure 36: Newly arrived IDPs in no shelter conditions, North-western Tigray (Source: ESNFI Ethiopia 2022).....	91
Figure 37: Makeshift shelters in Tigray (Source: author and ESNFI cluster).....	92
Figure 38: Educational facilities repurposed as collective centers for IDPs, with classrooms functioning as shelter units in Midregenet and Fresuwat Secondary School, Shire (Source: author, 2026).....	93
Figure 39: School room used as a collective centre without partition (Source: author, 2023-2026 and IOM).....	94

Figure 40: War affected family in their partially damaged building which serves as shelter (Sources: ESNFI cluster,2022)	95
Figure 41: Unfinished Building Used as an Emergency Shelter (source: author 2026 and ESNFI cluster 2022)	96
Figure 42: Family tent (UNHCR).....	97
Figure 43: UNHCR Shelter design and typology (UNHCR, 2016).....	98
Figure 44: Self-made emergency shelter in collective centres (Source: author, 2025).....	101
Figure 45: Standard emergency shelter constructed by humanitarian agency (Source: ESNFI Cluster, 2022).....	102
Figure 46: Single shelter in SC4 planned IDP camp, Mekelle (Source: author, 2023).....	103
Figure 47: Modular shelter units in Shire area (Source: ESNFI Cluster, 2022)	103
Figure 48: Modular IKAE shelter (Source: via Better Shelter)	104
Figure 49: Duplex shelter in Mai Dimu IDP camp Shire (Source: author,2024).....	105
Figure 50: Communal shelter in SC4 camp Mekelle (Source: author,2023)	106
Figure 51: Shelter constructed with partition inside another main space (Source: author, 2025; ESNFI, 2022).....	107
Figure 52: IDPs who initially lived in rental housing were unable to sustain rent payments, prompting their return to Tsehaye IDP site in Shire, where they built makeshift shelters (Source: author, January 2026)	108
Figure 53: Tenant agreement form used in cash-for-rent programs in humanitarian sector in Tigray (Source: IOM 2023)	109
Figure 54: IDP living in rent house in Adigrat (Source: author 2023)	110
Figure 55: Displaced persons settlement programme options (Corsellis & Vitale, 2005).....	113
Figure 56: Settlement typology (CCCM cluster, 2021).....	113
Figure 57: Sankey diagram of IDP migration flows from origin to destination in Tigray (CCCM Cluster et al., 2021)	116
Figure 58: Settlement type in Tigray (Source: IOM/DTM Ethiopia 2023)	117
Figure 59: IDP sites in Mekelle (Source: CCCM cluster,2021)	119
Figure 60: Shelter and settlement conditions at Tsehaye and Fre-swuat Schools IDP sites in Shire (Source: author 2022-2026 and ESNFI 2024).....	120
Figure 61: IDP Sites in Shire.....	121
Figure 62: IDP Sites in Axum	122
Figure 63: IDP Sites in Adigrat	123
Figure 64: Origin of IDPs hosted in Adigrat	123
Figure 65: IDP Sites in Adwa.....	124
Figure 66: IDP Sites in Abi Adi	125
Figure 67: IDP Sites in Sheraro	126
Figure 68: Schools as shelter in Tigray (CCCM cluster January,2023)	127
Figure 69: Gebru was one of the incentive workers hired by IOM to support in strengthening shelters in the IDP site. (Source: IOM Ethiopia September, 2023)	133
Figure 70: Standards and Principles for Humanitarian Camp Management.....	135
Figure 71: Camp coordination overview at national and site level (Source: Camp Management Toolkit)	136
Figure 72: Camp lifecycle (Global CCCM Cluster, 2014a)	137
Figure 73: Evolutionary model of camp design (Jahre et al., 2018)	138
Figure 74: Distribution of planned IDP camps in Tigray (Source: author illustrated based on UNHCR open ArcGIS,2025)	141
Figure 75: Location of the four Eritrean refugee camps in Tigray before November 2020	142
Figure 76: Hitsats Refugee Camp after destruction of humanitarian facilities and infrastructures and shelters.....	144
Figure 77: Shimelba refugee camp (Source: various media outlets)	145
Figure 78: A general view shows Mai Aini Eritrean Refugee camp near Mai Tseberi town, June 26 2021	146
Figure 79: Children playing in the streets of Adi Harush refugee camp before the outbreak of the war	146
Figure 80: Seba Care 4 IDP camp, Mekelle (Source: author, based on UNHCR open ArcGIS,2025).....	147
Figure 81: Mekelle and its seven-sub cities (Patassini D et al., 2024).....	149
Figure 82: Main gate of SC4 IDP camp, Adihaki sub-city, Mekelle, Tigray (Source: author 2023).....	150
Figure 83: Sources and partners of humanitarian service delivery system (Sds) (Source: author 2023)	153
Figure 84: SC 4 planned camp and initial design (Source: IOM Ethiopia CCCM operations,2023)	155
Figure 85: Shelters and humanitarian agencies in the camp (IOM Ethiopia, 2021)	156
Figure 86: Communal shelter non-operational due to looting and vandalism (Source: author 2023)	156
Figure 87: Shelter typology (Source: author 2023)	157
Figure 88: Traditional cooking in emergency shelters (Source: author 2024).....	158

Figure 89: Shelter damage and maintenance tracking maps in different timeline in IOM shelter Zone A-E (Source: IOM reports).....	159
Figure 90: The camp water supply layout (Source: IOM WASH, 2023)	160
Figure 91: Elevated water reservoir (Source: author 2023).....	161
Figure 92: WASH activities in SC4 camp (Source: IOM Mekelle and author, July 2024)	162
Figure 93: Strengthening Cohesion between Host Communities and IDPs through Water Supply Support (Source: author, July 2022 and 2025)	163
Figure 94: Traditional firewood baking (Source: author, 2023).....	164
Figure 95: Educational facilities in the camp (Source: author 2024).....	165
Figure 96: Small shops in SC4 camp, Mekelle (Source: author 2023).....	171
Figure 97: Camp Road alignment based on UNHCR design and planning standards (UNHCR, 2019).....	172
Figure 98: Poor drainage conditions in SC4 Mekelle during rainy season 2023 (Source: author 2023)	172
Figure 99: Camp design layout and spatial organization at block level in SC4 (Source: author 2023).....	174
Figure 100: Embeddedness of SC4 within local urban dynamics (Source: author’s illustration 2024).....	175
Figure 101: New humanitarian urbanism (Source: author’s illustration based on findings and theories)	176
Figure 102: SC4 hierarchical governing structure of IDP camp in Mekelle (Source: illustration by author, 2023)..	177
Figure 103: Location of IDP sites in Mekelle city (Source: CCCM cluster, 2021)	179
Figure 104: Transformation and adaptation of shelter and additional space using traditional dry-stone masonry (Source: author, 2023)	180
Figure 105: Spatial transformation in the peri-urban area of Serawat and Gefih Gereb (Source: base map used for the land use proposal preparation of 2016 Mekelle Master plan).....	181
Figure 106: Commercial building development in progress near the camp area (Source: Patassini D., 2025)	181
Figure 107: Various activities in SC4 camp (Source: author, 2023)	183
Figure 108: Five-years spatial changes of the camp, peri-urban area, and city (computed from Google Earth by Samuel B. and G. Pozzer,2025).....	185
Figure 109: SC4 camp located within the industrial land-use zone (Source: Mekelle city master plan, 2016).....	192
Figure 110: Industrial building/garage under construction adjacent to the camp (Source: Patassini D. 2025)	192
Figure 111: Mai Dimu IDP camp, Shire (Source: author, based on UNHCR open ArcGIS,2025)	194
Figure 112: Mai Dimu IDP camp satellite map (Source: Pleiades Neo Airbus DS 2024, BBC February 2024)	196
Figure 113: CCCM office in Mai-Dimu Planned camp (Source: author, May 2024).....	197
Figure 114: Sources and partners of humanitarian Sds (Source: author 2025).....	199
Figure 115: Alteration of emergency shelter and activities in the camp (Source: author May, 2024).....	201
Figure 116: IDPs queuing at water point to access potable water (Source: author May, 2024 and December, 2025)	203
Figure 117: Emergency latrine in camp.....	204
Figure 118: Solar panel providing lighting and mobile phone charging facilities (Source: author December, 2025)	206
Figure 119: Proposed school facilities in the camp site plan (Source: IOM May 2024)	207
Figure 120: The top five causes of morbidity vary depending on the season (Source: health cluster update,2023) .	209
Figure 121: Shelter-based retail shop and DSTV house in the camp (Source: author May, 2024 and December, 2025)	210
Figure 122: Modes of transportation operating within the camp (Source: author December, 2025).....	211
Figure 123: Site improvement in the camp (Source: author December, 2025).....	212
Figure 124: Layout of shelter blocks around the communal space of courtyard (Source: IOM, CCCM 2024)	213
Figure 125: Mai Dimu planned IDP camp site plan (Source: IOM, CCCM 2024)	215
Figure 126: Zite manager used in Mai Dimu camp since May 2024.....	218
Figure 127: Coordination structure of the camp (Source; author,2024)	220
Figure 128: Camp-level committee in Mai Dimu (Source: author, December2025).....	221
Figure 129: Existing master plan of shire	223
Figure 130: Fuel station under development at the junction of the asphalt road leading to the camp (Source: author 2025).....	224
Figure 131: Five-years spatial changes of the camp, peri-urban area, and city (computed from Google Earth by Samuel B. and G. Pozzer,2025).....	225
Figure 132: Standard coordination of at and between site, community and country levels.....	228
Figure 133: Characteristics of an area-based approach (ABA).....	235
Figure 134: ABA project inception following the war (Source: author,2024)	237

Figure 135: Hierarchy of project target: City, host communities' and IDPs (abstraction by author,2023)	241
Figure 136: Shelter kits and cash distribution in Mekelle city (Source: IOM Mekelle,2022)	247
Figure 137: Outcomes of ABA shelter and settlement intervention (Source: IOM Mekelle,2022).....	247
Figure 138: ABA multi-sector collaboration (Sanderson & Sitko, 2017).....	250
Figure 139: Core principles and criteria applied to Urban ABA in post-disaster context(Sanderson & Sitko, 2017)	251
Figure 140: Type of engagement (Suri, 2016).....	255
Figure 141: Humanitarian coordination architecture.....	256
Figure 142: Scenario for scaling up (UNDP, 2013)	263
Figure 143: Project structure and implementation flow with stockholders mapping (illustration by: author,2024)..	265
Figure 144: Map of Mekelle and Adigrat in Tigray region, Ethiopia (Source: UNHCR via AP)	267
Figure 145: Analytical paths in comparative case studies (Source: author,2024)	268
Figure 146: Mud block shelter constructed by an IDP on a host family's plot in Adigrat (Source: author, 2024)....	272
Figure 147: CGI shelter constructed by an IDP household on a host family's plot in Mekelle (Source: author, 2022)	272
Figure 148: Maximum estimated number of housing units impacted (both damaged and destroyed) in Ethiopia	274
Figure 149: Estimated Household Income Losses in Tigray (% of Pre-2020 Income), by Zone and Woreda (World Bank, 2022)	277
Figure 150: Estimated Costs (US\$) of Total Needs for Housing Sector, by Recovery Phase and Region (World Bank, 2022).....	278
Figure 151: Buildings damaged in humera town, Tigray, Ethiopia (Damage analysis by Human Rights Watch)	281
Figure 152: Location of attacks striking on or near civilian structures documented by Human Rights Watch in Shire, Tigray region, Ethiopia. 2021	282
Figure 153: Damaged to wall of condominium building in Shire, Tigray,2020	282
Figure 154: Post-war housing reconstruction: management and institutional framework in Tigray (Source: author,2024).....	284
Figure 155: Partial damage house (Ethiopia ES/NFI, 2025)	286
Figure 156: Fully damage house (Ethiopia ES/NFI, 2025)	287
Figure 157: Map of Tigray Regional State Administration showing updated Wereda (district), boundaries,2020 (Annys et al., 2021).....	293
Figure 158: Typical Hidmo house in the area (Source: Patassini D., 2024)	294
Figure 159: War-Inflicted Housing Damage, Hawzen (Source: author 2022)	294
Figure 160: Hidmo housing reconstruction: flat roof replacement shade and open gable CGI roof (Source: author 2022 and 2024).....	297
Figure 161: War-Inflicted Housing Damage, Gulomekeda (Source: authore,2024)	298
Figure 162: Shelter Repair kits (SRK) aligned with damage severity levels based on ESNFI cluster	299
Figure 163: Housing reconstruction process and practices in Gulomekeda (Source: author, 2024).....	301
Figure 164: Traditional and authentic vernacular architecture in Bora area, South Tigray (Source: author, 2024) ..	302
Figure 165: Reconstruction of damaged house in Bora area, South Tigray (Source: author,2024).....	304
Figure 166: Wall plastering: women's participation in post-war housing reconstruction in Bora town, South Tigray (Source: author,2024)	306
Figure 167: Capacity building for SRK beneficiaries in Bora district (Source: IOM Ethiopia,2023)	306
Figure 168: Post-War Housing Reconstruction Models for Rural Areas in Tigray (Source: author,2025)	308
Figure 169: Monkey head construction technique in Debre damo monastery, Tigray (Source: social media)	313
Figure 170: Typical Hidmo ceiling in Aynalem, Mekelle (Source: Patassini D., 2023)	314
Figure 171: Two-story Hidmo house of a farmer in Tigray (illustration by the author, February 2026)	318
Figure 172: Hidmo farmer house around Adigrat, Eastern Tigray, showing a partially buried structure designed in harmony with its surrounding site (Source: author 2024).....	319
Figure 173: One-story hidmo house of a farmer in Tigray (illustration by the author, February 2026)	319
Figure 174: Tigray Chief house (illustration by the author, February 2026).....	320
Figure 175: Variations of hidmo housing with adapted roof materials in Bora, South Tigray (Source: author, 2024)	321
Figure 176: Two story hidmo house called 'Debri' in urban area, Mekelle (Source: Patassini D., 2023).....	322
Figure 177: Details of hidmo house in urban area, Mekelle (Source: Patassini D., 2023)	322
Figure 178: Environmental and Geological Resource Mapping of Tigray Region	324
Figure 179: Stone quarries in Adigrat area, Eastern Tigray, showing local extraction sites (Source: author, 2024).325	

Figure 180: Hidmo house and adaptation of roofing in Tembian area (Source: author, 2025)	326
Figure 181 : Post-war reconstruction of a Hidmo house with a new roofing style in Hawzen area (Source: author, 2024).....	326
Figure 182: Varieties of small opening in a hidmo house (illustration by the author, February 2026)	327
Figure 183: Venturi and stack effects in typical hidmo house (illustration by the author, February 2026).....	327
Figure 184: Pictorial Hidmo variation (Source: Aranha, 2010).....	330
Figure 185: The old inner city of Mekelle, wher the unique hidmo house exist in Kebelle 14 (1994). (Source:	332
Figure 186: Hidmo with cobblestone street in old inner city of Mekelle, kebele 14 (Source: Patassini D.,2023)	332
Figure 187: Twenty-year spatial transformation and dynamics of the traditional settlement in kebele 14, Mekelle (computed from Google Earth by Samuel B. and G. Pozzer,2025).....	334
Figure 188: Demolished Hidmo house on the outskirts following industrial developments in the Messebo area of Mekelle (Source: Patassini D., 2024)	338
Figure 189: Gheralta lodge before the war 2020-2022: photo credit to NCA architects	341
Figure 190: Burnt and damaged of Gheralta lodge after the war 2020-2022: (Source: Patassini D., 2024).....	342
Figure 191: Comparison of traditional hidmo details and those at the Gheralta Lodge (Source: Aranha, 2010)	342
Figure 192: Integration of modern design with traditional hidmo technology at Nicolas Robinson School in Mekelle (Source: Patassini D., 2025)	344
Figure 193: Interaction of humanitarian and vernacular architecture (Source: author 2023)	347
Figure 194: Build Back Better Framework (Mannakkara & Wilkinson, 2014).....	348
Figure 195: Visualizing interactions between planned camp, peri-urban and urban environment with comparative scenarios (Source: Samuel B. and Domenico P.,2024).....	356
Figure 196: Schematic model for approach new humanitarian urbanism arising from camp, peri-urban and urban (Source: Samuel B. and Patassini D.,2024)	357
Figure 197: Emerging pattern of humanitarian urbanism in Tigray after crisis (Source: Samuel B. and Patassini D.,2024).....	358

Introduction: Displacement and confined spaces

This section describes the Tigray region of northern Ethiopia and the 2020-2022 war, focusing on the resulting forced displacement and housing damage, and their relationship humanitarian space making process. It then describes humanitarian architecture and urbanism as frameworks for studying of shelter and settlement responses, which comprises informal sites, camps and, urbanism across emergency cycles and reconstruction of vernacular house. Additionally, the section outlines the researcher's philosophical approach and positionality, identified the framework best suited to address the central hypothesis.

1. Motivation: Humanitarian architecture and urbanism shaped by spontaneity and traditional approaches to shelter and settlement

People often lose their decent living conditions and dignified homes when natural disasters, climate change (CC), pandemics, or complex man-made emergencies occur. These crises disrupt lives, destroy communities, and leave many without safe and secure shelter and even traditional settlement. Vernacular architecture and traditional settlements typically provide decent-quality of housing for the general population typically by providing durable and relatively high-quality structures. In contrast, humanitarian architecture and urbanism—particularly in contexts involving refugees or internally displaced persons (IDPs)—often rely on temporary structures such as tents or shelters made from plastic sheeting, which are prevalent in both individual and camps settings.

Humanitarian emergency can be any disaster whether natural or human man, if the international humanitarian assistant is needed to support affected populations for basic services provision such as food, water, shelter and protection and other life-sustaining measures. On the other hand, according UN a complex emergency is a major humanitarian crisis of a multi-causal nature that typically requires a system-wide response. These emergencies often involve, a long-term combination of political, conflict and peacekeeping factors occurring in context of armed conflict, war, and civil strife.

In complex humanitarian emergencies such as the Tigray war (2020–2022), a comprehensive, large-scale, and multi-phase humanitarian response is necessary to address the massive displacement of people, extensive damage to housing, and significant loss of life. However, the actual response was limited relative to the scale of the needs and failed to take into account the cultural and traditional contexts of both the displaced populations and host communities.

Humanitarian architecture and urbanism for shelter and settlement responses — covering emergency post-crisis (EPC), relief, recovery, and reconstruction phases — often prioritizes rapid provision of

emergency shelters in collective centres, camps, or shelter repair kits (SRK) in dispersed across villages. However, this practice frequently neglects the quality, cultural relevance, and vernacular architecture of both affected and host communities, as well as traditional settlement patterns. In reality, shelter and settlement strategies at the scale of individual dwellings, urban neighborhoods, or entire cities adopt divergent approaches to displacement, depending on context and phase of response. Beyond serving merely as reactive measures, humanitarian architecture and urbanism should be recognized as proactive instruments: they play a vital role in prevention, resilience building, and long-term community development. By embedding principles of social justice, sustainability, and human dignity, architectural and urbanism interventions can help mitigate future disasters — positioning shelter and settlement not just as a response to crises, but as a means of preventing them.

Building on the above insights and my professional experience as a shelter expert with the International Organization for Migration (IOM), where I supported internally displaced persons (IDPs), returnees, war-affected communities and host communities, I have able to critically examined both the practical and theoretical limitations of shelter and settlement (S&S) responses. These responses address the influx of IDPs, returnees and host communities across various contexts, including camp-based or planned sites, collective centres and dispersed or self-settled sites in both rural and urban areas. Prior to that role, I practiced as an architect, urban planner, and construction engineer on development projects that primarily served clients with the financial means to access professional design and construction services. In contrast, vernacular architecture—neither emergency-driven nor purely developmental—can be understood as a form of *decent* architecture, characterized by a gradual, contextually rooted process and practice.

The emergency shelter and settlement sector focuses on the rapid provision and mass production of standardized structures within a limited timeframe, emphasizing efficiency and logistical capacity. Conversely, development-oriented construction projects are often influenced by economic growth and technological advancement. The contrast between these two professional domains is striking: on one hand, I was supporting vulnerable communities living in precarious conditions during emergency post-crisis (EPC) and recovery phases; on the other, I was contributing to long-term development initiatives in more stable contexts.

This dual experience exposes a crucial disjunction between emergency response and development practices, underscoring the necessity of a conceptual ‘grey zone’—an intermediate framework that critically interrogates the entrenched separation within architectural theory and practice. When interpreted through the perspective of critical regionalism¹, vernacular architecture provides a meaningful foundation for

¹ Through the lens of Critical Regionalism, emergency relief construction reflects globalized, placeless production; developmental construction becomes a critical site of mediation; and vernacular architecture provides the contextual intelligence that enables modern architecture to be rooted in place while remaining contemporary. Critical Regionalism thus serves as a theoretical bridge

formulating a more contextually grounded, balanced, and sustainable strategies. Such an approach effectively bridges the gap between immediate relief efforts and long-term development, aligning with the principles of humanitarian-development nexus.

Chun and Brisson (2015), in their book *Ground Rules in Humanitarian Design*, reinforce the above theoretical perspective by asserting that humanitarian architecture constitutes a distinct and essential genre of architecture. It specially addresses the needs of marginalized and unreserved crisis-affected populations of the world who have been largely neglected by mainstream architectural practice and industry (Chun & Brisson, 2015). Likewise, Charlesworth² (2014), in her seminal book *Humanitarian Architecture: 15 Stories of Architects Working After Disaster*, emphasized that while humanitarian architecture primarily operates within crisis contexts, one could argue that all architecture is inherently humanitarian, as it is fundamentally intended to serve and respond to the needs of specific groups of people (Charlesworth, 2014). On the other hand, Charlesworth (2014) further extended the notion of Humanitarian architecture beyond its conventional focus on disasters and crisis responses. She argues that it encompasses a variety of approaches grounded to basic concepts of equity, aiming to bridge the gap between the decently housed and the desperate. (Charlesworth, 2014 forward) Humanitarian architecture, therefore, not only responds to immediate needs in the aftermath of manmade or natural disasters and crisis but also engages with post-disaster reconstruction and the long-term development needs of marginalized and impoverished communities (Charlesworth, 2014).

In this context, the research addresses the capability and recent developments of humanitarian architecture and urbanism, moving beyond merely addressing the shelter (S) and settlement (S) needs arising from war-induced mass displacement and housing destruction in Tigray, northern Ethiopia. The study adopts a spatial perspective while integrating key socio-economic, and managerial dimensions. It examines the everyday living practices of internally displaced persons (IDPs) across diverse settlement contexts—including collective centers, planned sites, and self-settled locations—and explores their patterns of interaction and coexistence with host communities. Shelter and settlement responses range from temporary, confined spaces to prolonged permanent settlements.³ The research further investigate the potential influence of

connecting emergency response, long-term development, and vernacular knowledge systems. This research is deeply rooted to the interplay of emergency shelter, housing recovery and reconstruction, and vernacular adaptation.

² Esther Charlesworth, Professor at the School of Architecture and Urban Design, RMIT University, Director of the Humanitarian Architecture Research Bureau (HARB), and author of multiple books on humanitarian architecture.

³ Confinement is not only about enclosure but also concerns the ways spatial arrangements produce and reinforce social and political orders as defined in a book by Pieris & Horiuchi, (2023), *The Architecture of Confinement*. In another book by, Veasey et al. (2005), in *Confined Space Entry and Emergency Response*, characterize confined spaces as areas with limited or restricted means of entry and exit, large enough for an employee to enter and perform assigned work, and not designed for continuous employee occupancy—a definition aligned with standards from the Occupational Safety and Health Administration (OSHA, USA) and the International Labour Organization (ILO). In this thesis, I use the term *confined spaces* as a theoretical and philosophical analogy for the environments created for IDPs to provide protection from war and external threats. These spaces often emerge spontaneously during

vernacular architecture on humanitarian shelter and settlement practices, as well as how these responses may, in turn, shape vernacular forms. Accordingly, the study is structured to follow the sequence of humanitarian response phases and the recovery cycle of emergency management.

The first part presents a critical analysis of the humanitarian emergency crisis in Tigray, highlighting its origins in both the recent war and historical connections to natural disasters. It also illustrates the immediate post-war responses, with a focus on shelter and settlement (S&S) interventions as well as the overarching humanitarian organizational management system. Identified problems are related to the significant gap in the provision of emergency S & S responses, which left IDPs living dire conditions. IDPs that live in an emergency settlement includes the spontaneous, self-settled and unplanned sites scattered throughout the region, where shelters are often poor quality, undignified, and substandard. Additionally, examined the ongoing socio-economic activities aimed at adapting to the humanitarian crisis.⁴

The second part explores the largest planned camps in the cities of Mekelle and Shire during the relief and recovery phase. IDP camps are not isolated enclaves of space; rather, they function as dynamic, integrated spaces that challenge traditional notions of confinement, the concept of bare life, and the state of exception as theorized by (Agamben, 1998). A detail analysis of the interactions between these camps and host communities, including peri-urban and urban areas is necessary to account both the spatial and socio-economic dimensions. These interactions gave rise to a form of new humanitarian urbanism that challenges established conceptual and operational definitions and theories, particularly in case of Mekelle city, its peri-urban area and the camp. This observation aligns with the spatial model developed by (Martin, 2015a) called campscapes where forcibly displaced populations, host communities, and other outcast groups intersect, leading to blurred physical and symbolic boundaries.⁵ However, as the displacement becomes protracted, emergency camps often transition into semi-permanent settlement, where the experience of so-called confinement becomes normalized. This development contrasts with Marc Augé's concept of 'non-place'(non-lieux), which are referees to space transience and anonymity that lack the quality of traditional 'places' rootedness in identity, history, and social relationships (AUGE, 1995).⁶

the initial phase of an emergency. Over time, however, humanitarian architecture can evolve into a mechanism of power that shapes how individuals experience inclusion, dignity, and protection.

⁴ An unplanned site is characterized by spontaneity, overcrowding, and limited basic services, and may also include IDP sites supported or managed by humanitarian partners, though services remain limited.

⁵ Diana Martin (2015) analyzes Palestinian refugee camps and informal settlements in Beirut as "campscapes"—dynamic socio-spatial systems that combine conditions of exception with everyday life. She argues that these spaces represent more than sites of crisis, functioning instead as environments where residents actively create, negotiate, and shape their own spatial realities.

⁶ According to the French anthropologist Marc Augé in his 1995 book *Non-Places: Introduction to an Anthropology of Supermodernity*, "non-places" refer to spaces of transience and anonymity that lack the qualities of traditional "places", such as rootedness in identity, history, and social relationships. These are spaces of passage or temporary interaction where individuals remain largely disconnected from a sense of community, memory, or personal attachment.

The third section delves into the reconstruction household-level space for returnees and war affected communities, through detailed case analyses, based on housing damage, loss, and need. Large-scale post war housing reconstruction is inherently complex, involving the engagement of multistakeholder including government entities at various levels, local communities, and NGOs. Varieties of housing reconstruction approach such as government-driven, donor-driven (NGO-led), market-driven, and owner-driven approaches explored (Chang et al., 2010). Three NGO-led case study projects, implemented in war damaged rural vernacular structures, are analyzed and conceptualized as an emerging strategy. Furthermore, the institutional and organizational framework for housing reconstruction is analyzed through a multi-scalar perspective, encompassing three interconnected levels: the macro, meso, and micro scales.

The fourth section discusses the vernacular architecture (VA) of Tigray, locally referred to as *hidmo*, emphasizing its value-added contribution to humanitarian architecture within the shelter and settlement sector across the phases of emergency, relief, recovery, and reconstruction. This discussion highlights how humanitarian architecture acknowledges the central role of traditional knowledge systems and spontaneous adaptation practices in enhancing post-war reconstruction consistent with the *Build Back Better (BBB)* framework. The reconstruction of damaged *hidmo* dwellings is further interpreted through the theoretical lens of *critical regionalism*, which offers a balanced perspective that reconciles universal reconstruction principles with a local vernacular tradition, thereby fostering culturally grounded and context-sensitive rebuilding strategies (Frampton, 1983).

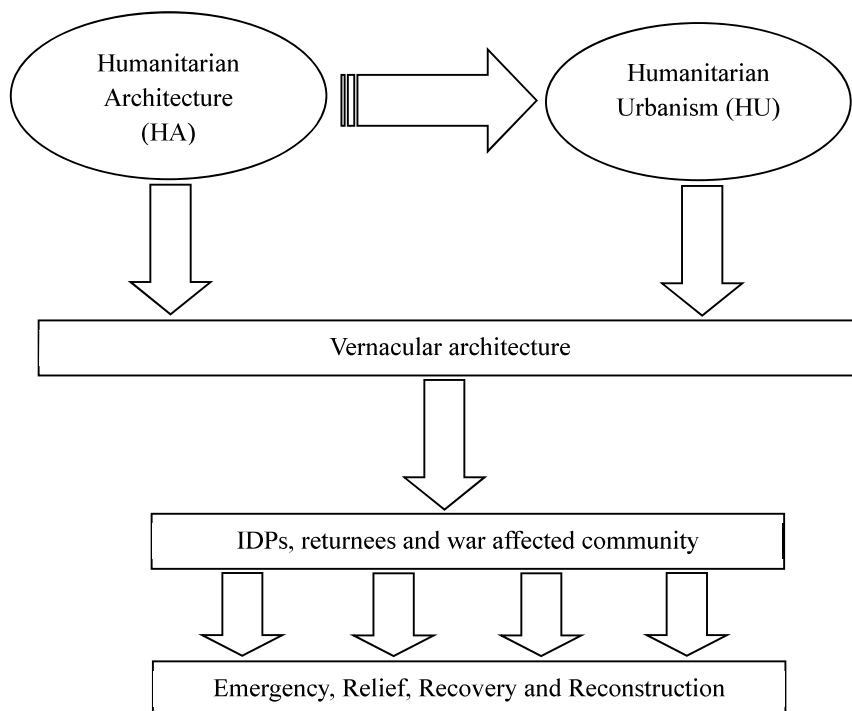


Figure 1: Conceptual and theoretical approach and linkage to humanitarian architecture and urbanism theory (Source: author, 2024)

These four interwoven sections of the research explore the micro-level dynamics of shelter and settlement by examining how a Hidmo man, displaced from his home, navigates multiple trajectories of displacement and implements immediate shelter solutions during different crisis phases, highlighting how traditional knowledge, skills, and lived experience in home-making, settlement organization, and house–environment interactions inform adaptive strategies under challenging and changing conditions. The study further contends that vernacular architecture extends beyond short-term coping mechanisms, influencing both recovery and reconstruction, as traditional architectural practices guide how returning IDPs and affected communities rebuild homes and re-establish settlements. In this context, vernacular knowledge serves not only as an emergency response tool but also as a long-term framework promoting resilience, cultural continuity, and community restoration, scaling beyond individual dwellings to inform broader urban-level approaches for accommodating large displaced populations. Such dynamics can be further interpreted through the lens of planetary urbanism, as well as through micro-level and incremental adaptations within humanitarian architecture and urbanism.

IDP settlements and refugee camps as a “systemic component” of a planetary urbanism

IDP settlements and refugee camps might be treated less as anomalous humanitarian spaces and more as regular, repeatable urbanization processes and outcomes produced by the same global forces that generate metropolitan regions, logistics corridors, extractive frontiers, and informal peripheries. Such processes and outcomes are frequently confirmed by studies and researches on mobility, migration and displacement. In general, camps and IDP sites fit planetary urbanism for many reasons.

The first is that planetary urbanization is “bigger than cities” and displacement landscapes are part of that “urban fabric”. Planetary urbanization approaches (inspired by Lefebvre, Brenner, Schmid and others) argue that urbanization is not confined to bounded “cities,” but is produced through interconnected processes that reorganize territories at multiple scales (resource zones, infrastructures, borders, peripheries). A key statement of this move is Brenner & Schmid’s call for a new “epistemology of the urban,” explicitly arguing that urbanization must be analyzed beyond the city/non-city divide, restoring legitimacy of urban-rural linkages/exchanges (U/R/E). Camps and IDP settlements become these extended urbanization landscapes. As a matter of fact, they are planned and serviced through infrastructures (water, sanitation, grids, roads), they are positioned within border regimes and security architectures, in many cases integrated into labor markets and supply chains (‘formal’ and ‘informal’). As documented by official sources, they often persist long enough to develop urban morphologies, economies, and governance.

The second main reason can be attributed to the fact that camps operate as infrastructural nodes in a global “humanitarian–security–logistics” system. It is a logistical network that, beyond capturing spontaneous or forced population movements, establishes “fields of interaction” endowed with distinctive economic bases and forms of governance, which nonetheless interact with local economies and existing administrative

structures. Camps are not just shelters. They are territorial (spatial) devices where humanitarian agencies, host states or communities, and donors manage mobility, eligibility, and resources at scale. That is what (Agier, 2011) frames as “humanitarian government,” and what later work describes as camps that can become “camp-towns/camp-cities.” From a planetary urbanism angle, this looks like a standardized, networked mode of settlement production: modular layouts, registration systems, supply pipelines, policing, and “contained circulation.” These are systemic spatial technologies, not exceptions.

There is a third reason that deserves a great attention. Camps “urbanize” internally affecting morphologies, economy, and politics, but also externally since they can reshape entire regions and environments. A large and increasing literature shows camps as distinctive political-urban spaces rather than purely temporary sites. (Ramadan, 2013) influential paper develops an analytic strategy for understanding the refugee camp spatially and politically, using Palestinian camps as a central case. (Agier, 2011) similarly tracks how camps can shift toward quasi-urban forms (“if this is a town...”). Externally, camps and IDP settlements drive peri-urban expansion (land markets, rental micro-economies), new mobility patterns (commuting, circular migration), service ecologies (NGO economies, subcontracting), and new borderland urbanisms (checkpoints, corridors, waiting zones). This is what’s happening in Mekelle, Shire and other places in Tigray.

A fourth reason refers to the phenomenon of “widening and spreading” refugee cities, from bounded camps to dispersed urban refuge. Following such a perspective, the “refugee cities” idea is often used in two related ways. Firstly, refugees are making and transforming existing cities (arrival neighborhoods, informal districts, labor and housing markets). (Ward, 2014) article explicitly frames “refugee cities” in relation to UNHCR’s shift toward urban refugee policy in the Middle East, even if such a process might be extended to other regions of the world. In many cases, cities substantially constituted by refugee presence and history, not as a temporary episode but as an enduring urban condition. (Alimia, 2022) book argues Afghans materially reshaped urban Pakistan, i.e., “refugee cities” as a long-run urban formation.

In summary, from a planetary urbanism perspective, the “widening/spreading” move is, on one side, a concept that expands beyond the camp to include urban neighborhoods, squats, informal settlements, and peripheral subdivisions where displaced people live and build life. Secondly, these formations appear across regions (Global South and North), linked by migration governance, capital flows, and humanitarian infrastructures. As a consequence, “refugee urbanism” becomes a recurrent planetary pattern rather than a special case.

Micro dimension of humanitarian architecture/urbanism (HA/HU)

Human populations traditionally inhabit dwellings constructed according to locally developed building practices, commonly referred to as vernacular architecture. These indigenous forms of housing reflect longstanding cultural traditions, environmental adaptation, and social organization. In many contexts,

vernacular construction techniques optimize the use of local materials and adapt to climatic conditions, contributing to culturally appropriate and sustainable living environments. However, in the aftermath of natural or human-induced crises, such as armed conflict or environmental disasters, established ways of life—including traditional housing—are frequently damaged or destroyed, forcing populations to flee their homes. This sudden loss of shelter disrupts not only physical structures but also social and cultural norms embedded in housing and community life. According to humanitarian guidance, shelter responses must consider both immediate survival needs and longer-term cultural and contextual factors (Gkoumas et al., 2025).

During the initial phase of displacement, affected populations often lack adequate shelter and rely on self-initiated coping strategies. This early period may involve living without shelter, constructing makeshift structures, or occupying temporary spaces. In practice, displaced households are frequently the first responders to their shelter needs, improvising solutions before formal assistance arrives. Over time, as the crisis response evolves, households transition toward more stable living arrangements.

Humanitarian organizations typically provide standardized emergency and transitional shelter solutions during this process. International standards such as *The Sphere Handbook* outline minimum requirements for humane and dignified shelter responses, including appropriate living space, safety, privacy, and the ability to adapt structures to local conditions. As displacement becomes prolonged, the emergency phase often transitions into transitional and then more durable shelter solutions. During this evolution, interactions between affected populations and humanitarian actors increase, creating opportunities to integrate local knowledge and vernacular construction practices into shelter responses. Humanitarian guidelines increasingly emphasize the importance of engaging affected communities, respecting cultural preferences, and enabling household participation in shelter design and construction to improve appropriateness, sustainability, and acceptance of interventions (Sphere Association, 2018). Recognizing and incorporating indigenous building knowledge not only enhances the cultural relevance of shelter assistance but also supports local livelihoods and resilience, allowing shelter interventions to be more contextually grounded and sustainable over the longer term.

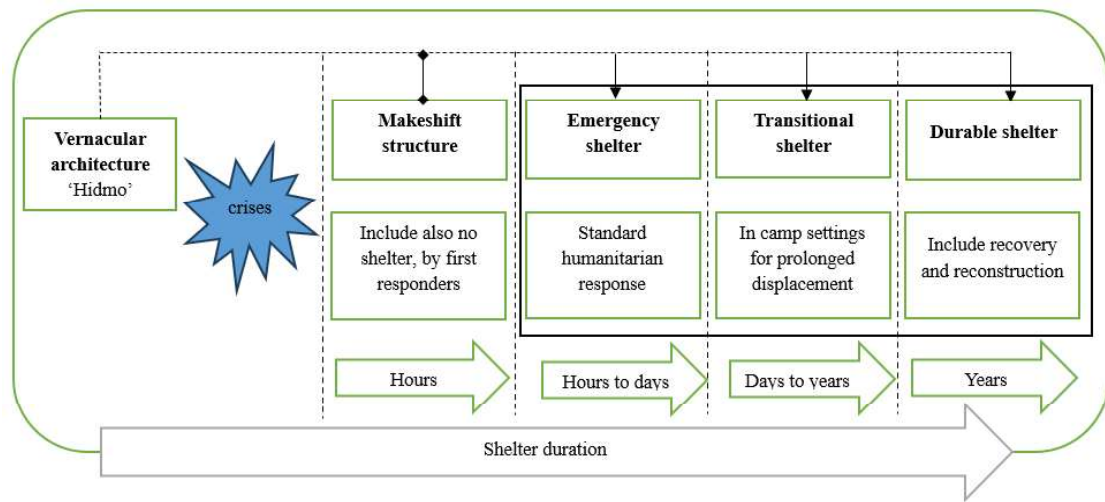


Figure 2: Transformation from hidmo housing to multi-phase humanitarian shelter design (Source: author's illustration, 2024)

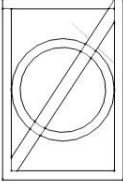
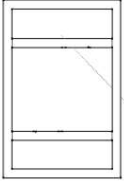
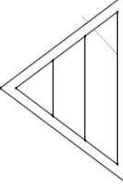
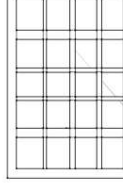

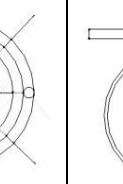



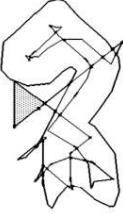
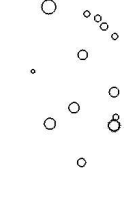
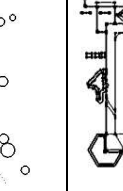
Changing spatial icons of camps: from humanitarian principles to adaptive practices

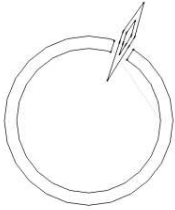
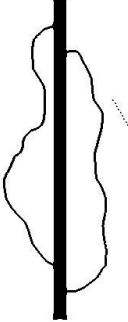
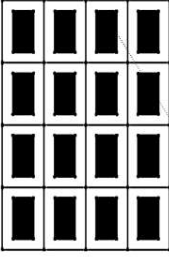
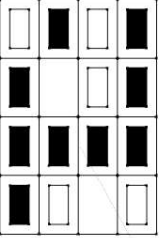


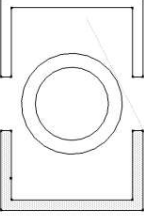
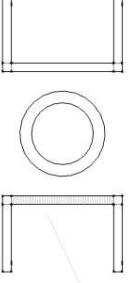
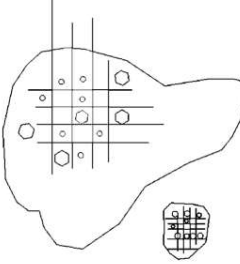
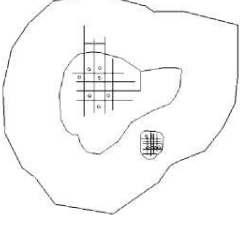
Humanitarian urbanism, as articulated through theoretical frameworks and the principles established by UN agencies, proposes standardized models for the planning and management of displacement camps (Sphere Association, 2018; UNHCR, 2014). In practice, however, the process of encampment frequently departs from these protocols, revealing an ambivalence between theory and field-based adaptation. This gap offers a critical lens through which to examine the spatial and social similarities between planned camp models and adaptive, ground-level encampments. By framing encampment as a form of settlement production, the research identifies a set of spatial invariants common to both humanitarian principles and adaptive practices. Using an iconographic methodology (Panofsky, 1955) these invariants are interpreted as spatial signs that materialize before they are conceptualized theoretically. Camp principles and adaptive encampments thus emerge first as constructed (spontaneous) spatial phenomena and only secondarily as objects of intellectual speculation such as design, planning, ruling and management.

Through an analytical factorization of humanitarian camp protocols and field/adaptive encampments, the study reveals architectural and urban implications embedded in processes of isolation, control, and adaptation as underlined by (Agamben, 1998; Foucault, 1995) and other authors. These findings extend beyond humanitarian architecture, demonstrating that IDP (along with refugee) camps must be understood as part of a planetary urbanism rather than as exceptional or temporary conditions (Lefebvre, 1991). The comparison between theory and practice underscores the need for architects and planners to take a more active role in humanitarian contexts—an area that remains under-researched and largely dominated by managerial and logistical approaches (Corsellis & Vitale, 2005).

Ultimately, the research opens a critical discussion within humanitarian urbanism by proposing a “counter-iconography” of ‘impermanence’(Ficcadenti, 2024), offering a new conceptual and operational framework for the architectural and urban spatialization of displacement.

Table 1: Illustration of humanitarian principles and adaptive practices for iconographic analysis in an IDP camp (Source: author's illustration, updated and adapted from Ficcadenti, 2024)

mainstream principles	adaptation practices
<p>Geometrical layout: domination through geometry and enforced patterns</p>	
<p>Setting, formal and mono functional arrangement: rigidity and specialization are mandated</p>	
<p>Hierarchical framing (subordination)</p> <ul style="list-style-type: none"> • life is subordinated to spatiality of settlement patterns 	
<p>Static nature of the settlement patterns</p> <ul style="list-style-type: none"> • saturation of emptiness • space as a sum of objects 	
<p>Concentration of spaces ('close' space)</p> <ul style="list-style-type: none"> • gravity rules • radial/radical form of densification 	
<p>One gate and checkpoints: controlling in/out interactions /inside vs. outside impervious, like an image of a 'root'</p>	
<p>Open layout, flexibility, organic layout, degree of freedom, combination of narrative layers</p>	
<p>Process (co-design, co-implementation) creates personalized and interpretative space</p>	
<p>Mutuality, cooperation and conflict</p> <ul style="list-style-type: none"> • space – settlement interaction • life flow between spaces, it's not bound into 'given' spaces 	
<p>Performative space: spontaneity generates dynamic places of adaptation</p>	
<p>Dispersion, spreading, mixite (open space)</p> <ul style="list-style-type: none"> • ambivalent modality, serving to "keep in" and to "keep out." 	
<p>Permeability: more gates, interaction, different meanings of access</p>	

<p>Border/limit/demarcation</p> <ul style="list-style-type: none"> • barber wire/solid wall • psychological/mental • margin to margin • linearity of a limit • the 'issue' of the edge 			<p>Threshold, transition, buffer, space of filtration, passthrough, break through, thickness,</p> <ul style="list-style-type: none"> • escapism, evasion, fantasy, dissociation • extended and areal entities
<p>Zoning, planning standards, sheltering/building codes</p> <ul style="list-style-type: none"> • repetitiveness • standardized housing/shelter units • pre-configured architectural responses • selective settlement 			<p>Interchange, variation, modulation Combination based on inclusive interaction Associating human needs with identity and social role. 'Convenient image' to 'convenient space'.</p>
<p>Mono dimension</p> <ul style="list-style-type: none"> • flatland: the horizontal space of the 'field' • continuity of the horizon • thickening horizon line 			<p>Multidimension</p> <ul style="list-style-type: none"> • dialectic between verticality and horizontality
<p>Ownership/copyright</p> <ul style="list-style-type: none"> • field/camp as property • political action • 'spaces creators' do hold the copyright (and responsibility) 			<p>Actual common use, new rights (shelter, housing, land and property), decommissioning, copy-left. Spaces start belonging to the community.</p>
<p>Failure to integrate with surrounding systems: transport, healthcare and education provision, labor markets and alike.</p>			<p>Links and exchanges with external communities, together with a neighborhood-oriented approach, have shaped the new form of humanitarian urbanism.</p>

2. Research hypothesis

In 2014, Esther Charlesworth a pioneer writer in the field of humanitarian architecture published *Humanitarian Architecture: 15 stories of architects working after disaster*, a book exploring the vital role of architects in designing projects for communities after disaster. Through the fifteen case studies illustrate how architects can use spatial sensibility and integrated problem-solving skills to help alleviate both human and natural disasters (Charlesworth, 2014). She framed architecture as a form of humanitarian aid rather than luxury, emphasizing its potential to restore dignity, identity, and stability to displaced or disaster affected populations.

Esther Charlesworth also highlights the importance of active community involvement throughout the design and construction process as a key factor in achieving successful of post-disaster reconstruction. Furthermore, she strongly advocated to draw attention for the use of local materials, traditional building techniques, and cultural practices, arguing that these approaches enhance sustainability, community acceptance, and the resilience of the built environment. On the other hand, Charlesworth 2006 critique what she terms the '*design parachute*' approach, in which architects and designers enter disaster-affected regions with preconceptions and externally imposed solutions, often neglecting local knowledge and participation. Recognizing that humanitarian responses have largely concentrated on short-term emergency shelter and settlement solutions, Charlesworth (2006) underscores the need to bridge the gap between immediate relief and long-term development through adaptable, incremental, and sustainable design and construction strategies (Charlesworth, 2006).

Kirtee Shah, points out that there is a historic and ongoing tradition of humanitarian architecture in India. The architect believes that, although the term has many definitions, it is necessary that adjective "humanitarian" stems from the fact that architecture's function is to serve people.⁷ This cannot be denied, even when constructing spectacular buildings of grand proportions and monumental significance. However, humanitarian architecture has another dimension; it refers to providing architectural services to those previously unserved – certain rural communities, the urban poor, or those affected by disasters. "Serving a marginalized community is a design challenge that differs from working with a traditional, commercial architect's client. [...] Humanitarian architecture is also an architectural practice that recognizes, internalizes, and creatively responds to recurring global and societal challenges. Sensitive and creative

⁷ Kirtee Shah – architect, honorary director of the Ahmedabad Study Action Group (ASAG). This non-governmental organization brings together professionals who want to use their skills for the public good, assisting with slum upgrading, post-disaster reconstruction, creating low-cost housing, and shaping regulations. In the book Charlesworth, E. *Humanitarian architecture: 15 stories of architects working after disaster*. Routledge, 2014, the role of architect Kirtee Shah is discussed as a case study. He emphasizes that humanitarian architecture has deep roots in India. He argues that Indian architectural tradition has long focused on serving social needs—providing shelter, dignity, and safety for ordinary people—rather than only producing monumental or elite buildings. Through his work with the ASAG, Shah demonstrated that architects can play a humanitarian role by working with low-income communities, disaster-affected populations, and informal settlements, using participatory and people-centred design approaches.

solutions to crises related to resources, the environment, and identity must be translated into sustainable architectural practice and directed toward the search for a more 'humane' urban community," Shah argues (Charlesworth, 2014).

Shigeru Ban, a Japanese architect and winner of the prestigious 2014 Pritzker Architecture Prize, emphasized in his book *Shigeru Ban: Humanitarian Architecture (2014)* that architecture can and should serve humanity by providing sustainable, dignified, and affordable shelter for vulnerable communities (Shigeru et al., 2014). He advocates for compassionate approach design, the innovative use of unconventional materials, and the active participation of local community involvement, especially in contexts of disaster and crisis situations.⁸ Shigeru Ban is widely acknowledged as a practicing humanitarian architect for his innovation use of paper tubes and cardboard in design temporary and emergency shelters for population displaced by disaster. Beyond his material innovations, Ban emphasizes community participation and integrates humanitarian values into his work, thereby aligned architectural practice with social responsibility.

"Architects are not building temporary housing because we are too busy building for the privileged people.... I'm not saying I'm against building monuments, but I'm thinking we can work more for the public." - Shigeru Ban, Pritzker Prize, 2014

Hollmén (2020) explored the conceptual underpinnings of humanitarian architecture, emphasizing the necessity of cultural context and community engagement. The author underscored the significance of local building traditions, indigenous knowledge, and vernacular practices in shaping architecture that is sustainable, resilient, and deeply rooted in its locality (Hollmén, 2020). Complementing this perspective (Charlesworth & Fien, 2023), in *Design for fragilities: 13 Stories of Humanitarian Architects*, the authors highlight the urgent need for architects to respond to the complex design and planning challenges involved in rebuilding cities and landscapes devastated by civil conflict, (un)natural disasters, political instability, and persistent poverty. Together, these perspectives reinforce the critical role of context-sensitive and socially responsive architectural approaches in contemporary humanitarian practices.

Humanitarian responses and interventions extend beyond the mere provision of shelter, encompassing the planning, management, design of settlements, camps, and urban areas that accommodate disaster-affected populations, migrants, slum dwellers, and other marginalized communities. Such interventions not only address immediate physical needs but also shape social relations, spatial organization, and long-term urban resilience (Agier, 2008; Potvin, 2013).

⁸ Conventional materials in architecture refer to those that are widely used, readily available, and possess well-established performance characteristics derived from long-standing construction practices. These typically include concrete, steel, brick, stone, wood, and glass—materials that have become standard due to their durability, reliability, and widespread familiarity within the construction industry (Ashby & Johnson, 2014; Ching, 2014)

Marianne Potvin (2013), a leading scholar in humanitarian urbanism, proposed a framework in which humanitarian interventions are understood as actively shaping and producing urban space, particularly in context of displacement and crisis (Potvin, 2013). She defines humanitarian urbanism, as the “production of space through humanitarian action,” situated at the intersection of the two key forces: the evolution of the humanitarian project and the dynamics of urbanization processes. The concept offers a novel analytical perspective for examining emerging urban conditions that result from the expanding spatial, chronological, and ideological scopes of humanitarian interventions. Potvin also critiques the traditional view of camps as isolated spaces, highlighting the importance of considering broader urban processes that are influenced and transformed by humanitarian action.⁹

Büscher, Komujuni, and Ashaba (2018) analyze how humanitarian aid agencies influence post-conflict urban development, arguing that humanitarian actors act not only as providers of relief but also as key drivers of urbanization, a process they describe as humanitarian urbanism. Their findings show that the sustained presence of aid organizations stimulated population growth, infrastructure development, and economic activity, contributing to the transformation of settlements into urban centers. However, this process produced uneven outcomes, as rising land values and rents primarily benefited certain groups while marginalizing poorer residents. The authors further note that limited coordination with local authorities led to fragmented planning and weakened local governance, highlighting the long-term and unintended urban impacts of humanitarian interventions (Büscher et al., 2018).

Building on the concept of humanitarian urbanism, Jansen advances this perspective through ethnographic research on the everyday social and spatial dynamics of protracted refugee camps. He demonstrates that camps initially conceived as temporary sites of emergency relief frequently endure over extended periods, evolving into complex urban formations that mirror cities in their social organization, economic practices, and governance arrangements. Conceptualized as “accidental cities,” these spaces emerge at the intersection of humanitarian governance, state authority, and residents’ agency, shaping patterns of mobility, belonging, and socio-spatial inequality that extend beyond the logic of temporariness. Jansen’s analysis underscores the argument that humanitarian interventions do not simply manage displacement but actively produce enduring urban forms and modes of governance that structure daily life and future possibilities. This perspective challenges the framing of camps as exceptional or transitory spaces and reinforces broader scholarship that situates humanitarian settings as integral to contemporary processes of urbanization (Jansen B.J., 2018).

The aforementioned theories and concepts aim to establish a connection between the practical application of humanitarian architecture and urbanism and the specific needs that arise in the context of man-made

⁹ Potvin’s work introduces the idea of ‘humanitarian urbanism,’ which conceptualizes how humanitarian practice reshapes urban space beyond traditional camps, expanding into complex political-urban contexts.

disasters, particularly armed conflict and war. In doing so, they address the diverse and urgent requirements of affected populations, including IDPs, returnees, war-affected communities, and host populations. Within this framework, several key thematic areas inform the formulation of the research questions and hypotheses of this study, including: i) the relationship between humanitarian architecture and vernacular practices, such as the use of local materials, traditional construction techniques, and cultural contexts; ii) the role of community engagement in the shelter provision process in humanitarian settings; iii) the operational tension between humanitarian architectural approaches and standardized shelter and settlement responses during emergencies; iv) the intersection of humanitarian architecture and urbanism, particularly the blurred boundaries between emergency, temporary, and long-term development;¹⁰ v) the need for innovative, context-sensitive, and adaptive design responses; vi) the contribution of humanitarian architecture to post-war recovery and reconstruction processes; and vii) the dynamics of humanitarian urbanism, including the challenges associated with emergency camps located within urban areas.

Humanitarian architecture and urbanism is emerged as an increasingly significant interdisciplinary field, positioned to respond to the escalating global displacement crisis. Forced displacement continues to intensify as a result of armed conflict, disasters and climate change (CC) with an estimated 75.9 million IDPs globally in 2023 (IDMC, 2024). In Ethiopia alone, more than 4.5 million people are internally displaced, with the Tigray region accounting for the largest share – exceeding 2 million displaced persons during the peak of the conflict in 2021 (IDMC, 2022). According to reports from the UNOCHA, approximately 80 percent of IDPs in Tigray were residing within host communities under poor living condition.¹¹ War-induced displacement, combined with widespread housing destruction, has profoundly reshaped Tigray’s spatial, social, and economic landscape, resulting in the emergence of more than 120 collective centres used as temporary shelters, over eight planned and agency-managed IDP camps, and numerous self-settled sites.¹² These fragmented and often informal settlement arrangements have left large segments of the displaced and vulnerable population without adequate, consistent, and sustainable support. In response to such conditions, humanitarian architecture and urbanism integrates design, spatial planning, and social engagement to develop context-responsive interventions that prioritize human dignity, resilience, and long-term sustainability. Moving beyond short-term emergency shelter provision, the field seeks to foster adaptable and inclusive environments through participatory planning processes, community involvement, and culturally and environmentally sensitive design approaches that better support displaced populations over time.

¹⁰ The intersection of humanitarian architecture and humanitarian urbanism is where building-scale emergency shelters evolve into urban space, and where architectural interventions function not only as crisis responses but also as tools of urban-making that support long-term social, spatial, and environmental resilience.

¹¹ UNOCHA, Ethiopia - Situation Report, 1 Mar 2024, 2024

¹² According to the CCCM Cluster report, the figures changed following the November 2022 peace agreement, as decommissioned schools resumed their educational functions, leading to a reduction in the number of collective centers.

Internally displaced persons (IDPs) in Ethiopia per region

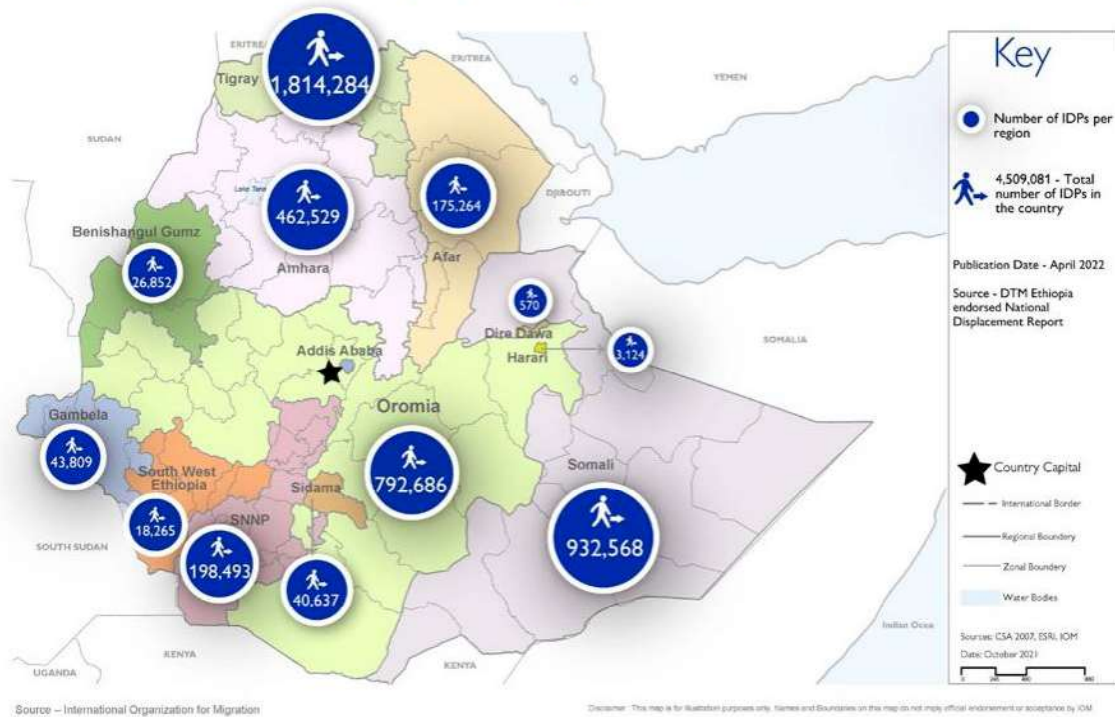


Figure 3: IDPs in Tigray and Ethiopia (IOM, 2022)

To date, limited studies integrate humanitarian architecture and urbanism in addressing war-induced forced displacement and housing destruction. While existing studies, theories, and concepts offer valuable insights, they often focus separately on shelter (S) & settlement (S) interventions, housing reconstruction, or camp-based responses. Much of the existing analysis fails to employ humanitarian architecture and urbanism as an integrated conceptual framework and rarely examines the functional interrelations among humanitarian responses across the disaster management cycle—spanning from emergency, relief to recovery, and reconstruction (ERRR). Furthermore, research rarely explores the dynamics between spontaneous and planned camps, collective centres, urban areas, and long-term recovery efforts of war damaged vernacular houses in large-scale forced displacement contexts, such as the Tigray region, where approximately 40% the population was internally displaced at the peak of the conflict.¹³

The need to address shelter and settlement responses and housing reconstruction through the lens of humanitarian architecture and urbanism arises from the recognition that such interventions must extend beyond their immediate functional purposes to embrace a more holistic and sustainable approach.

¹³ In 2021, during intense armed conflict, over 2.1–2.2 million people were displaced in Tigray—out of an estimated population of 5.5–6.0 million—exacerbating the humanitarian crisis and increasing the demand for emergency shelter and settlement support.

Understanding both the spatial and socio-economic dimensions of these responses—across regional, settlement, camp, and shelter scales—is therefore essential. Accordingly, this study examines how shelter and settlement response strategies for IDPs, returnees, and war-affected communities evolve across the different phases of the humanitarian response cycle. By integrating an analysis of vernacular architectural practices and their potential contribution to enhancing context-driven shelter and settlement solutions throughout the continuum from emergency relief to post-war reconstruction, the research formulates and tests a principal hypothesis at successive stages of investigation.

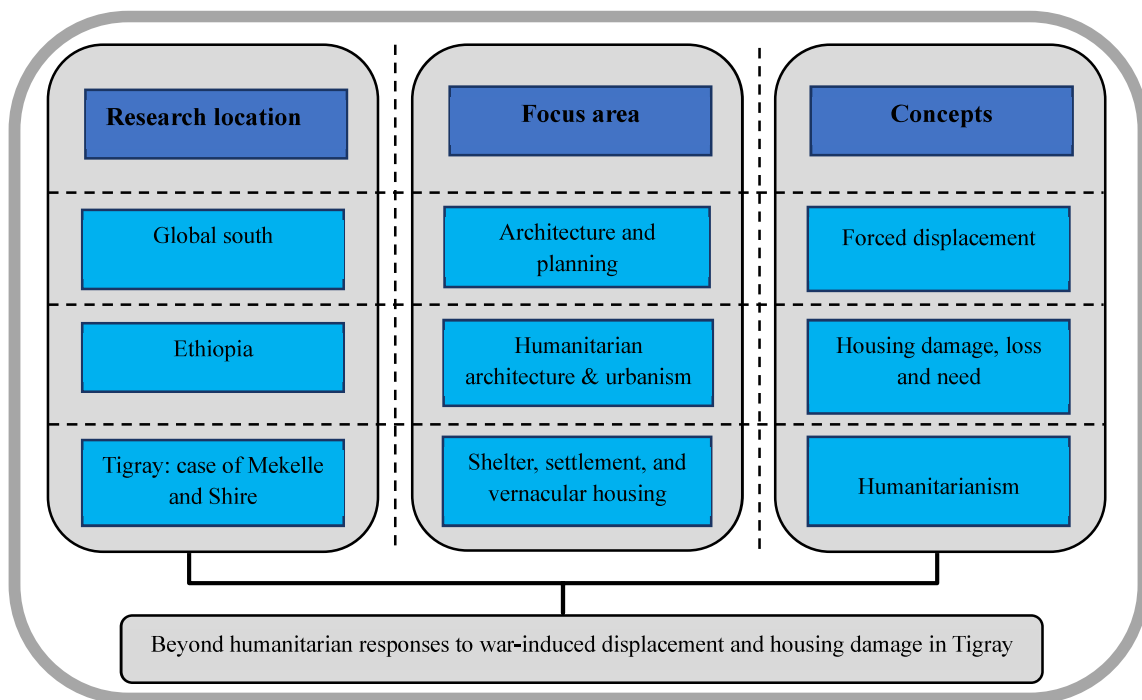


Figure 4: Research problem articulation (Source: author 2023)

Research question:

Based on the foregoing articulation of the problem and the identified thematic areas, this study formulates two primary research questions and corresponding hypotheses.

1: What/which are the changes in conceptual, theoretical, and operationally application of humanitarian architecture and urbanism to accommodate mass displacement of IDPs, returnees, and war-affected communities in Tigray?

Based on the research question, the following hypothesis is suggested:

H1: This study hypothesizes that the application of humanitarian architecture and urbanism in Tigray is under significant strain and has undergone both conceptual, theoretical, and operational shifts to better respond to the contextual needs of IDPs, returnees, and war-affected communities.

From spatial and socioeconomic perspectives, war-induced mass displacement and large-scale housing destruction generate profound transformations in humanitarian architecture and urbanism principles. Diverse forms of shelter adaptation and camp-based settlements, along with their interactions with surrounding peri-urban and urban administrative boundaries, produce new spatial relationships shaped by humanitarian response mechanisms and the efforts and participation of affected communities. Furthermore, displaced populations residing outside both spontaneous and planned camps within urban host communities contribute to distinct spatial configurations and socioeconomic dynamics. These conditions challenge the prevailing tendency in humanitarian architecture and urbanism to focus primarily on the mere provision of space by humanitarian actors and adaptations by users.

2: How do vernacular architecture and traditional settlement patterns add value to humanitarian architecture and urbanism practices in shelter and settlement responses within war-torn and culturally sensitive context such as Tigray?

Based on the research question, the following hypothesis is suggested:

H2: *This study hypothesizes that the integration of vernacular architectural principles and technologies into humanitarian architecture and urbanism enhances the effectiveness and sustainability of shelter and settlement response, as well as war-damaged housing reconstruction, across the emergency, relief, rehabilitation, and reconstruction phases.*

The hypothesis emphasizes the importance of vernacular architecture and traditional settlement patterns in the reconstruction of war-damaged housing, particularly in rural areas during the post-war period. It further examines how shelter and settlement responses across different phases of the emergency cycle can be integrated within humanitarian architecture and urbanism, moving beyond conventional approaches that prioritize the uniform provision of standardized shelters and settlements. Humanitarian architecture is thus understood not only as the provision of emergency shelter or post-disaster housing reconstruction, but also as an approach that addresses the needs of the urban poor. However, this field has been criticized for insufficient cultural sensitivity, particularly in interventions led by international humanitarian architects and organizations.

3. Environment: Tigray between peace and war

The Tigray Region, located in the northernmost part of Ethiopia, is home to more than 6.5 million people, out of the country's estimated total population of approximately 132 million as of 2024, according to the United Nations.¹⁴ It is one of the twelve regional states that constitute the Ethiopian Federation. Geographically, Tigray is bordered by Eritrea to the north, Sudan to the west, the Amhara Region to the

¹⁴ UN, world population prospects (2024) <https://population.un.org/wpp/>

south, and the Afar Region to the east and southeast. The region is primarily inhabited by the Tigrayan people, along with the Irob and Kunama ethnic groups, and is administratively organized into seven zones: Central, Eastern, Western, Northwestern, Southeastern, and Southern, in addition to the Mekelle Special Zone. Mekelle serves as the regional capital, while other major urban centers include Shire, Axum, Adigrat, Adwa, Alamata, Abi Adi, Mekoni, Wukro, Sheraro, Humera, and Maichew, which are among the largest cities and towns in the region.

Geographically, the Tigray region lies between latitude 12° and 15° North and longitudes 36° 30' and 40° 30' East. Climatically, the region falls within a subtropical zone characterized by arid to semi-arid conditions. It is among the driest regions of Ethiopia, receiving an average of annual rainfall of approximately 590 millimeters and distributed very unevenly across the region. The Tigray region is interested by four seasons: *keremti* (rainy season, June-August), *kewei* (harvesting, September-November), *hagay* (dry, December-February), *tzedia* (small rain and land preparation, March-May).

Tigray is widely recognized as the cradle of Ethiopian civilization and the center of ancient Aksumite kingdom, whose history spans over three millennia. The region is renowned for its rich array of historical monuments and both tangible and intangible cultural heritage. Despite its profound historical and cultural significance, Tigray has repeatedly experienced cycles of famine, war, and armed conflict, often resulting in widespread loss of life, mass displacement, forced resettlement, and large-scale destruction of infrastructure. These crises—both manmade and natural—have left affected populations in extremely precarious and vulnerable conditions. Historically, Tigray has been one of Ethiopia's most conflict-affected regions, serving as the epicenter of many of the country's major wars. Most recently, between 2020-2022, the Tigray region and the Ethiopian federal government engaged in blood-stained full-fledged war, causing devastating loss of life and damage of physical assets.

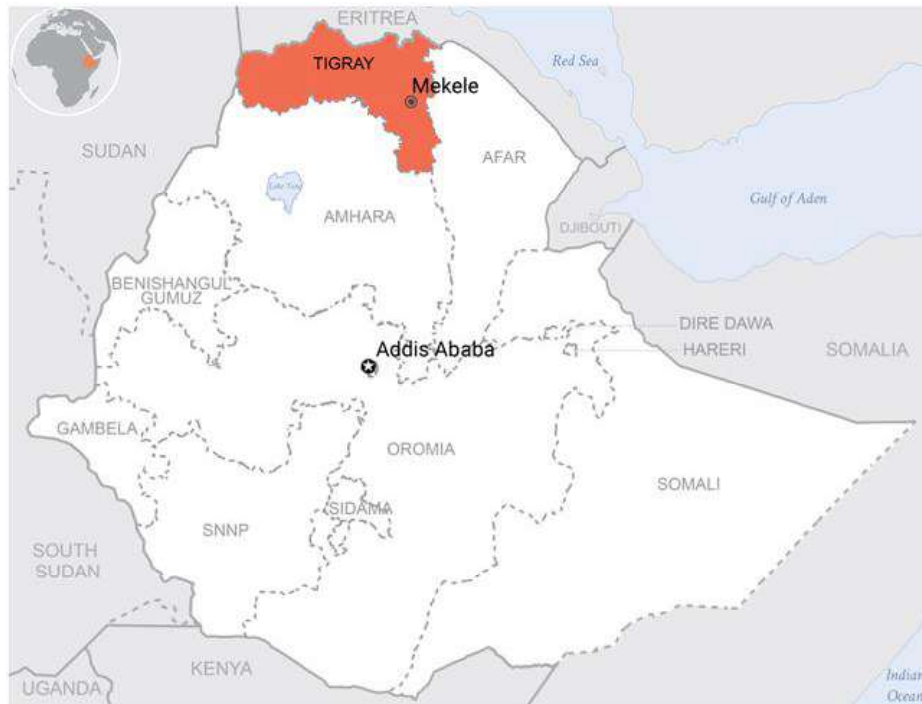


Figure 5: Map of Tigray region in Ethiopia (OCHA, 2021b)

Two years of war (2020-2022): mass displacement and damage

In 2022, 71.1 million people were living as IDPs worldwide, a 20 percent increase in a year and the highest number ever recorded. Conflict and violence become ever more important as the main cause of conflict-induced internal displacement in global which account 62.5 million. Only 8.7 million displacements were caused by disasters. In the same year Ethiopia also hosted around 4.6 million IDPs with 83.5% resulted by conflict and violence (IDMC, 2023).

According to the Heidelberg Institute on International Conflict Research (HIIK) *conflict barometer* (2022), the Tigray conflict and violence classified as a war with intensity level 5 (the highest), based on the casualties, weapon use, destruction, number of displacement and number of participants (HIIK, 2023). Wars are categorized not only by their level of intensity-ranging from level 1, denoting as dispute, to level 5, indicating a full-scale war - but also by their type, depending on the actors involved. Conflicts and wars may occur entirely within a single state or between sovereign states. However, certain wars begin as internally conflicts and later gains international involvements, thereby blurring the lines between domestic and international warfare. Such conflicts are referred to as hybrid or mixed-form (cross-border element) conflict, or more precisely, an internationalized internal war, which is an internal conflict where external states intervene, either directly or by supporting local actors.¹⁵

¹⁵ Heidelberg Institute for International Conflict Research (HIIK), Conflict Barometer; categorizes political conflicts by five intensity levels, from non-violent disputes to wars.

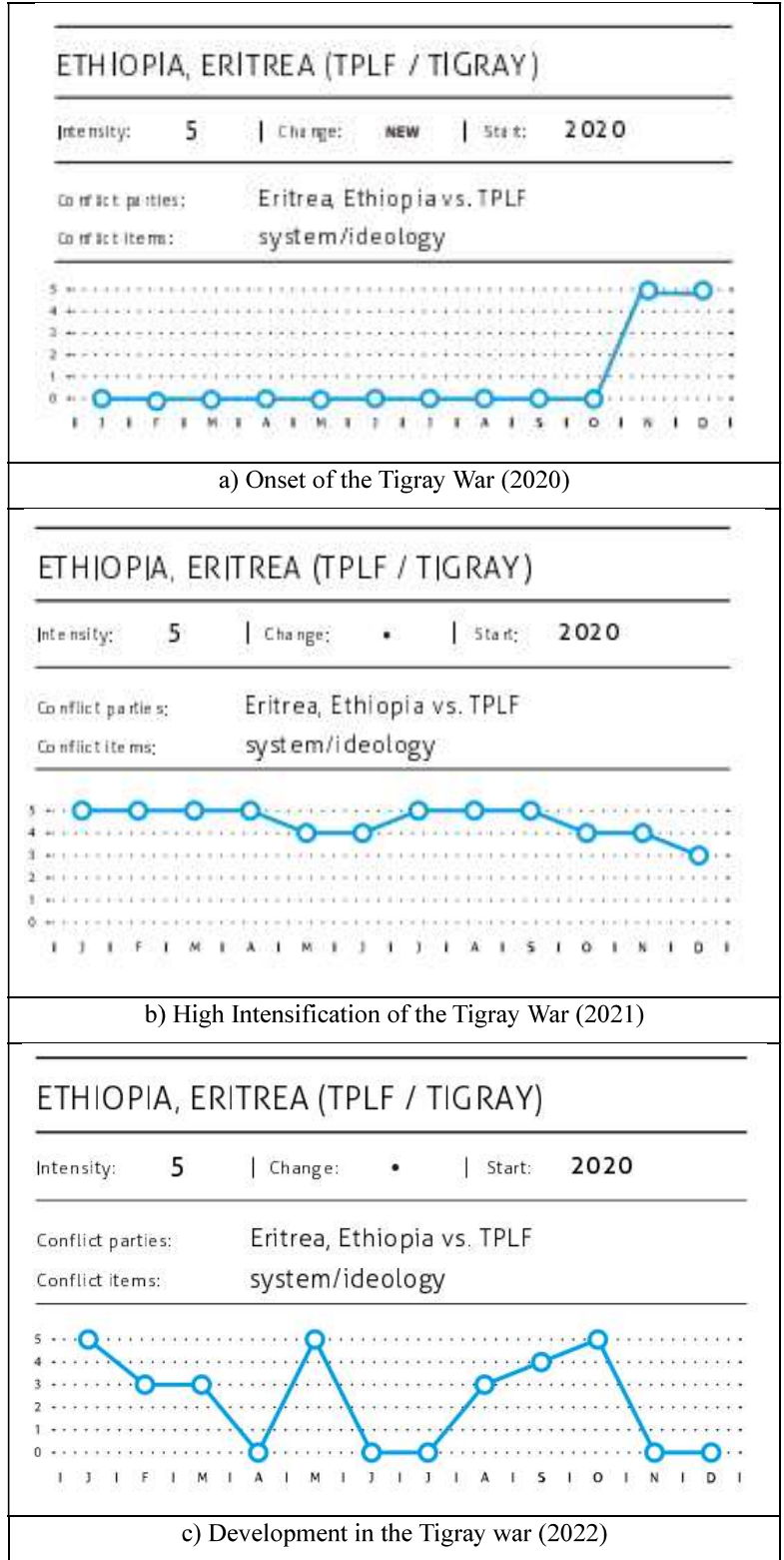


Figure 6: Intensity of the Tigray war (2020-2022). (Source: conflict barometer, HIIK, 2020-2022)

In the Tigray Regional State, a constituent part of the Federal Democratic Republic of Ethiopia (FDRE), the war began on 4 November 2020 following escalating political and constitutional tensions between the federal government and the Tigray People’s Liberation Front (TPLF).¹⁶ The conflict initially started as an internal war between regional and federal forces but quickly escalated when neighboring regional state forces, followed by Eritrean troops and other external actors, joined the hostilities, transforming the war into an internationalized internal armed conflict. The war resulted in widespread civilian harm, mass displacement, extensive infrastructure damage, and a severe humanitarian crisis, with lasting political and social consequences for Ethiopia and the wider Horn of Africa.¹⁷

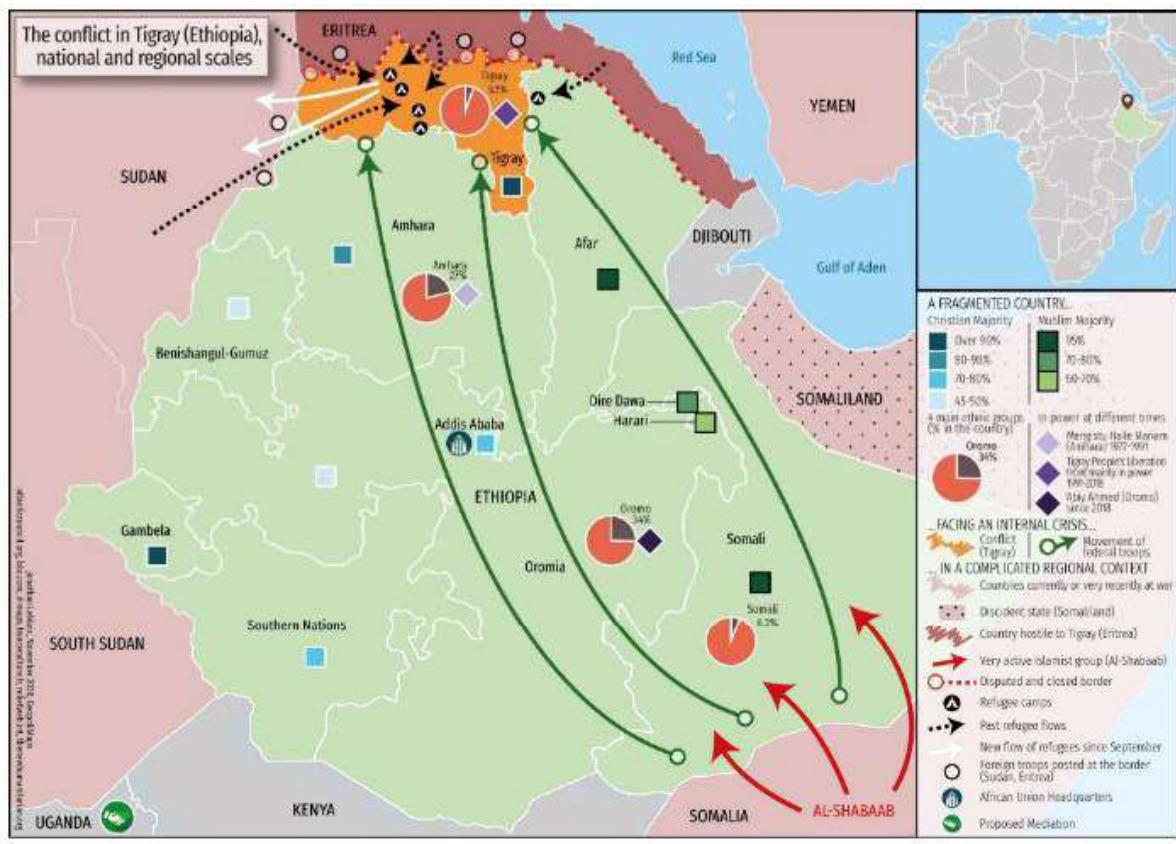


Figure 7: Tigray war and local and international actors (Annys et al., 2021)

In recent decades, most modern conflicts are civil wars in nature, predominantly occurring in low-income and developing countries. As a result, the scale of destruction has increased significantly, making warfare one of the primary man-made causes of damage to the built environment and the forced displacement of

¹⁶ The Tigray People’s Liberation Front (TPLF), established in 1975 to resist the Derg regime, emerged as the dominant member of the Ethiopian People’s Revolutionary Democratic Front (EPRDF), which governed Ethiopia from 1991 to 2018. After 2018, the TPLF’s influence was largely confined to the Tigray region, contributing to the 2020–2022 conflict. The party was instrumental in Ethiopia’s transition from a military dictatorship to a federal system.

¹⁷ BBC news: Ethiopia’s Tigray war: The short, medium and long story, June 29, 2021. <https://www.bbc.com/news/world-africa-54964378>

millions of people. Similarly, the Tigray conflict has had devastating impacts across multi sector, including the natural environment. However, this study focuses specifically on the issues of forced displacement and housing destruction, examining their effects across different timeframes using divers' source of information, as well as assessing the responses of affected community and humanitarian actors.



Figure 8: Global War and conflict affected areas (Source: Global conflict tracker 2023)

According to the UNOCHA Tigray region humanitarian update from 19 August 2021, about 5.2 million people were reported in urgent need of humanitarian assistance, highlighting the scale of vulnerability caused by prolonged conflict and restricted aid access. Approximately millions more were displaced also forced displaced across the region and identified as IDPs. In addition, more than 63,110 individuals are also fled the border into neighboring state Sudan and being a refugee and sheltered in three camps in Hamdayet, UmRakuba and Tunaydbah (OCHA, 2021b).¹⁸

From 1 to 26 June, 2021, the *Emergency Site Assessment: Northern Ethiopia Crisis Round 7* conducted by IOM Ethiopia's Displacement Tracking Matrix (DTM) across 377 sites identified a total of 2,105,387 IDPs, representing 449,492 households, across the Tigray, Afar and Amhara regions. Of these 2,036,398 IDPs (432,358 households) were located in the Tigray region, while 49,001 IDPs (9,102 households) were in Afar and 19,988 IDPs (8,032 households) in Amhara (DTM Ethiopia, 2021).¹⁹ In Tigray, the assessment

¹⁸ The three refugee camps in Sudan—Hamdayet, Um Rakuba, and Tunaydbah—which predominantly host forcibly displaced populations from Tigray, have experienced repeated fires, resulting in extensive shelter damage, budget shortfalls, and cuts to essential service delivery. These challenges have been further exacerbated by the ongoing conflict in Sudan. As a result, some refugees have returned to Ethiopia, particularly to Tigray, where they have subsequently become IDPs, thereby acquiring a *dual legal and humanitarian status*. These individuals were initially fled from western Tigray are now residing across the region in camps, collective centers, and host communities.

¹⁹ Displacement Tracking Matrix (DTM) gathers and analyzes data to disseminate critical multi layered information on the mobility, vulnerabilities, and needs of displaced and mobile populations that enables decision makers and responders to provide these populations with better context specific assistance. DTM is methodology under data and research unit (DRU) at IOM

covered 314 sites, and the displaced population accounted for approximately 40% of the regional population, underscoring the severe humanitarian impact of the war. The DTM findings further indicate that around 80% of IDPs were residing with host communities, reflecting the limited shelter and settlements responses across urban and peri-urban areas. Major urban centers such as Shire (673,241 IDPs) and Mekelle (295,979 IDPs) hosted particularly large concentrations of displaced populations, as they were perceived to be relatively safer and more secure, with better access to basic services than rural areas, where populations were exposed to collateral damage and restored to coping mechanisms—such as hiding in mountainous areas, caves, bushes, or forests—that were unsafe and unsustainable (DTM Ethiopia, 2021).

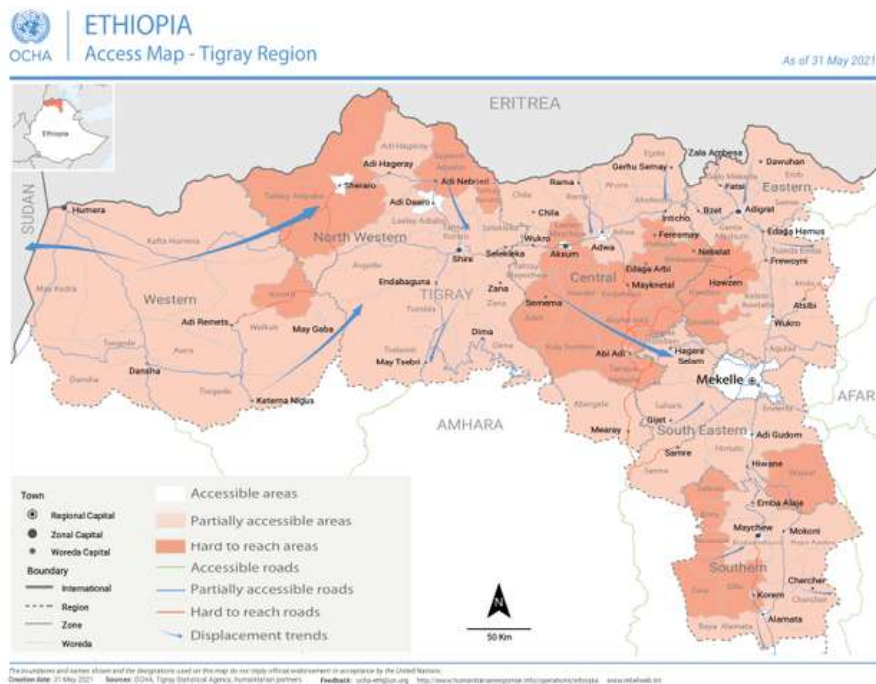


Figure 9: Map of Tigray, Ethiopia with accessibility and displacement patterns (IDPs and refugees) (OCHA, 2021a)

Beyond widespread forced displacement and deteriorating living conditions, the war resulted also in catastrophic levels of civilian mortality. Estimates of civilian casualties resulting from the Tigray conflict vary considerably across academic studies and governmental official sources. For example, research conducted by Jan Nyssen and his colleagues at Ghent University (2022) estimated that, as of December 2022, the average number of civilian deaths was approximately 518,000, with estimate ranging from a lower bound of 311,000 to an upper estimate reaching 808,000. Of these fatalities, roughly 10% were attributed to direct violence, including massacres and aerial bombardments, 30% resulted from the collapse of the healthcare system, and the remaining 60% were caused by conflict-induced famine (Nyssen et al., 2022).

Ethiopia. https://dtm.iom.int/sites/g/files/tmzbd11461/files/reports/DTM%20Ethiopia%20Emergency%20Site%20Assessment%20Round%207%20Report%20%28June%202021%29.pdf?utm_source

The above estimates are further corroborated by statements from senior international mediators of the Cessation of Hostility Agreement (CoHA).²⁰ According to the *Financial Times* (2023), the African Union’s chief mediator for the Tigray peace process, former Nigerian President Olusegun Obasanjo, indicated that the conflict may have resulted in the deaths of approximately 600,000 people, including a significant number of civilians.²¹ The war in Tigray unfolded in four major waves of intense fighting, characterized by successive offensives and counter-offensives. This large-scale, full-fledged war was further compounded by a prolonged siege, including blockades and embargos, which severely restricted access to food, healthcare, fuel, banking and communication services, and humanitarian assistance, and triggered multiple waves of displacement, thereby amplifying both civilian suffering and mortality.

Within this context of extreme violence, mass displacement, housing destruction, and systemic deprivation, the humanitarian situation over the two-year war became exceptionally complex and severely constrained. Humanitarian access was significantly limited, and operational capacity to deliver life-saving assistance was reduced due to the lack of humanitarian space to carry out effective responses.²² In light of the severity of the crisis and the unprecedented scale of human suffering, the United Nations and its agencies, including UNHCR, classified the situation as a Level 3 (L3) emergency—the highest category in the UN’s internal emergency response system—signifying an extraordinary, and large-scale humanitarian crisis requiring system-wide mobilization, enhanced coordination, and sustained international engagement (De Clerck et al., 2023; UNHCR, 2021a).²³

Following this prolonged humanitarian emergency, muted celebrations marked the signing of a peace agreement on November 2, 2022, in Pretoria, South Africa, between the Federal Democratic Republic of Ethiopia (FDRE) and TPLF. The agreement established a permanent cessation of hostilities, effectively silencing the guns and ending the devastating two-years war that claimed hundreds of thousands of lives, displaced millions from their homes and destroy infrastructure. In the wake of COHA, one of the significant

²⁰ The Cessation of Hostilities Agreement (CoHA), also known as the Pretoria Agreement, was signed in Pretoria, South Africa, on November 2, 2022, between the TPLF and the Ethiopian federal government, formally bringing active hostilities to an end.

²¹ *Financial Times*, 2023 <https://www.ft.com/content/2f385e95-0899-403a-9e3b-ed8c24adf4e7>

²² Humanitarian space refers to both the physical space in which humanitarian action occurs—such as refugee camps, safe havens, and humanitarian corridors—and a conceptual or normative space that allows humanitarians to operate safely and effectively. This includes the legal, political, and security conditions that protect humanitarian actors from attack or interference and is grounded in respect for core humanitarian principles of humanity, neutrality, impartiality, and independence, as well as parties’ obligations to facilitate humanitarian assistance (Collinson et al., 2012; Donini, 2012; Hilhorst & Jansen, 2010; Leader, 2000).

²³ In 2021, UNHCR classified the Tigray conflict as a complex humanitarian emergency and designated it as a Level 3 (L3) crisis. Level 3 activation, which entails a full mobilization of the three-tiered international humanitarian system in response to a major emergency, has helped channel additional resources to so-called “forgotten emergencies,” such as the conflict in northern Ethiopia, which often receive limited international attention or have fallen off the radar of global humanitarian agencies, governments, and donors. Nonetheless, smaller-scale emergencies frequently face challenges in securing funding, as donor priorities tend to focus on system-wide L3 crises. Additionally, national governments have expressed concerns that L3 responses may be overwhelming and could inadvertently diminish the capacity and visibility of local authorities in managing the humanitarian response. The L3 emergency operation evaluated 18 months after launch of responses or earlier (UNHCR, 2021).

progresses was the establishment of an Interim Regional Administration (IRA), along with the resumption of essential services and the provision of humanitarian assistance to previously inaccessible sites.²⁴ However, three years after the Pretoria peace agreement, IDPs have not returned to their places of origin and continue to live in dire conditions in camps, collective centers, and host communities across both urban and rural areas. Humanitarian assistance, particularly food aid, has declined due to USAID budget cuts, further worsening their precarious situation. The reconstruction process remains slow and primarily addresses institutional damage, offering limited support for durable solutions for returnees and war-affected host communities.

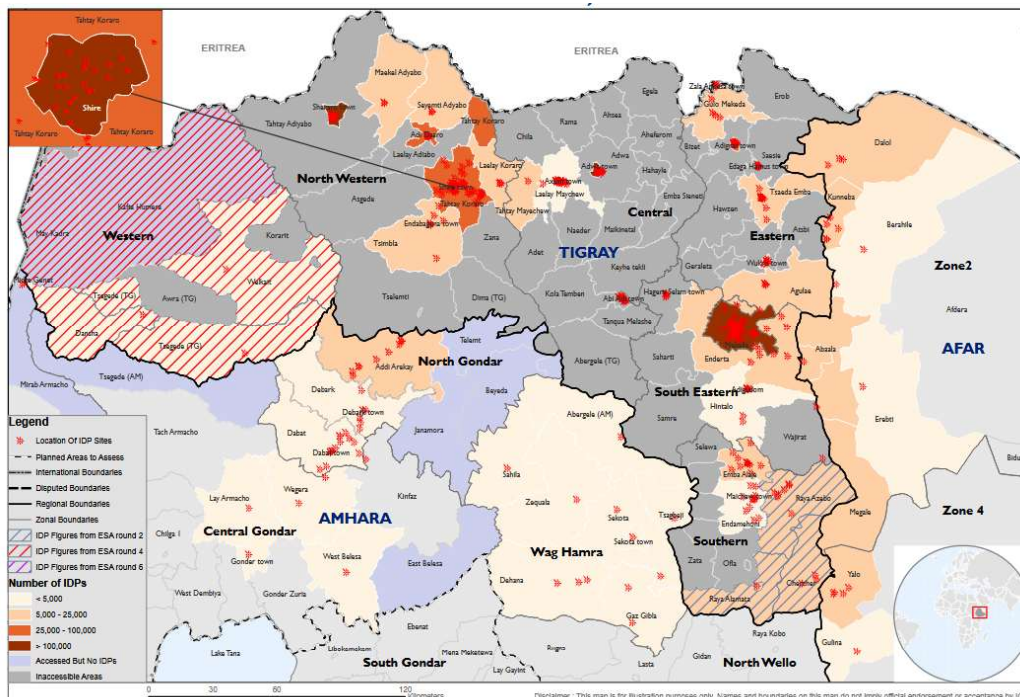


Figure 10: Internal displacement caseload in Tigray, with high concentrations in Mekelle and Shire, July 2021 (Source: IOM, 2021)

²⁴ Interim Regional Administration (IRA) was in place for two years under the leadership of its first president, Getachew Reda, before being replaced by General Tadesse Werede on April 8 2025.

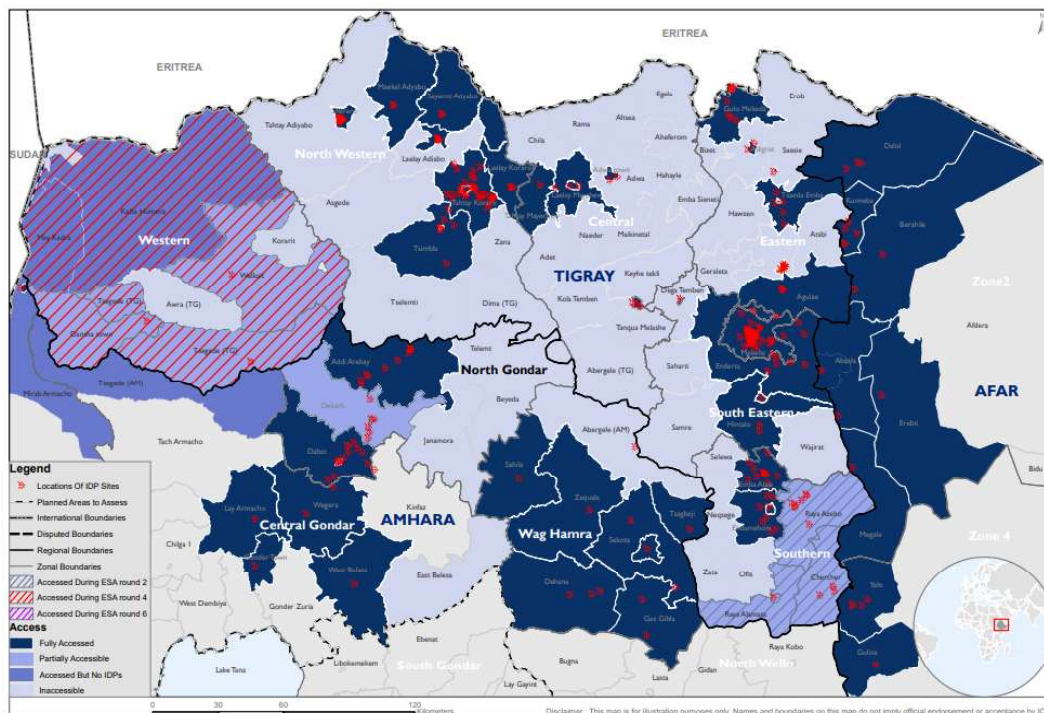


Figure 11: Levels of accessibility and areas where the Emergency Site Assessment was conducted across Tigray (Source: IOM, 2021)

Chronology of the war:

- November 4,2020: Conflict began in Tigray with Federal forces
- November 7,2020: Transitional Government of Tigray declared by the federal government.
- Nov 9–28,2020: Heavy fighting across Tigray reports of civilian casualties and humanitarian crisis begin to emerge.
- November 28,2020: Ethiopian government claims control of Mekelle Tigray’s capital.
- June 28,2021: TPLF/Tigray Defense Forces (TDF) re-control Mekelle and major part of Tigray. Federal government declares a unilateral ceasefire.
- March 24,2022: Ethiopian government declares a "humanitarian truce" to improve aid access.
- March 25, 2022: The Tigray authorities agree to a cease fire.
- August 24,2022: Fighting erupts and this consider the last round of the war before peace deal.
- November 2,2022: Peace agreement (COHA) between Federal government and TPLF
- November 12,2022: Second peace deal signed to implement the Pretoria agreement
- March 23,2023: Interim Regional Administration (IRA) of Tigray established, led by Getachew Reda
- April 8, 2025: Lt. Gen. Tadesse Werede was appointed to lead the Interim Regional Administration (IRA) of Tigray, replacing Getachew Reda.

Impact of the war and emerging challenges on shelter, settlement, and housing:

The war in Tigray created an urgent and large-scale need for shelter and settlement (S&S) assistance, driven by mass displacement and widespread destruction of housing across the region. More than two million people were internally displaced, many of whom had no safe or adequate shelter and were forced into overcrowded camps, collective centres, or host communities ill-equipped to absorb them. The rapid influx of displaced populations exceeded the capacity of humanitarian actors to respond effectively, as the number of operational humanitarian partners on the ground was limited and logistical capacity was weak, complicating efforts to construct emergency shelters in a timely manner. These difficulties were compounded by severe restrictions on humanitarian access, including bureaucratic obstacles, communication blackouts, and blocked or unsafe transport routes, which hindered the delivery of life-saving assistance. Simultaneously, the collapse of local government authority and fragmented control of territory created a power vacuum that further undermined coordination and the overall humanitarian response. As a result, many displaced people continued to live in precarious, unsafe conditions with inadequate shelter, basic services, and protection.

Persistent shelter and settlement (S&S) issues for IDPs following the war and complex humanitarian crises:

- The inadequate shelter and settlement (S&S) response to mass displacement of IDPs has resulted in a significant mismatch between needs and the available assistance, creating in a persistent ‘unmet need’.
- The quality of shelter and settlement (S&S) responses, including self-made structures, has often been poor and undignified, exposing affected populations to protection risks. Many humanitarian organizations rely on standardized emergency shelter solutions, typically intended for six months, following a “one-size-fits-all” approach that fails to accommodate the specific needs, cultural practices, and long-term preferences of the communities they serve.
- The ongoing standardized shelter and settlement (S&S) responses frequently overlook the cultural context and traditional settlement patterns, including vernacular architecture of displaced populations and host communities.
- The crisis has resulted in both large-scale influxes of displaced populations and prolonged periods of displacement, placing sustained pressure on the shelter and settlement sector, as well as the housing stock in urban areas. Humanitarian cash-for-rent or rental assistance programs provide a notable example of interventions addressing housing pressures in urban and semi-urban areas.
- The situation constitutes a complex emergency, characterized by war, armed conflict, and political instability, which complicates and hinders the coordination and delivery of humanitarian responses, including shelter and settlement (S&S).

- The war has created significant administrative challenges, including fragmented governance, insecurity, political turmoil at both federal and regional levels, and weak institutional capacity within the Tigray Interim Regional Administration (IRA), further complicating the delivery of humanitarian assistance.
- The humanitarian support has been insufficient and diminished due to factors such as budget reductions (e.g., USAID cuts), competing global crises, donor prioritization of other large-scale emergencies (including Gaza, Sudan, Syria, and Ukraine), and donor fatigue resulting from the prolonged nature of emergency.²⁵
- Emergency responses at the onset of the war often lacked sustainability principles considerations, particularly regarding material selection, the absence of circular economy practices, limited user participation, and insufficient consideration of cultural contexts. These shortcomings undermine progress toward the Sustainable Development Goals, especially SDG 12 (Responsible Consumption and Production).²⁶ A relevant research sub-question arising from this context is: *To what extent can humanitarian architecture, informed by traditional and cultural practices, support more sustainable shelter and settlement responses?*
- Humanitarian emergency responses frequently exhibit a ‘technocratic organizational culture’ within aid agencies, marked by top-down decision-making, standardized procedures, and limited engagement with local contexts. Such approaches often overlook the knowledge and priorities of affected communities and can inadvertently reinforce ‘colonial legacies’ power dynamics within contemporary humanitarian practice.
- Unlike refugee populations, IDPs typically share language, culture, and social norms with their host communities, indicating that humanitarian responses should be tailored to the local context rather than relying on standardized, “one-size-fits-all” approaches common in refugee assistance. To address this, a place-based or area-based approach has been proposed, emphasizing locally grounded, context-sensitive interventions that respond to the unique social, cultural, and spatial characteristics of affected communities.

²⁵ As the crisis in Tigray persists with limited implementation of the peace agreement and new global emergencies competing for attention, donor fatigue has grown. In prolonged crises, donors often reduce support when there is little visible progress, leaving shelters and settlements in many IDP camps without maintenance for years and forcing displaced people to live in poor, undignified conditions. In response, some humanitarian actors are moving beyond short-term relief toward resilience-focused approaches, linking humanitarian aid with development and peacebuilding through the humanitarian–development–peace (HDP) nexus to demonstrate sustainable, long-term impact and help sustain donor engagement.

²⁶ In the context of humanitarian interventions, SDG 12 (*Responsible Consumption and Production*) emphasizes the importance of using resources efficiently, minimizing waste, and ensuring that emergency responses follow environmentally sustainable practices. [THE 17 GOALS | Sustainable Development](#)

4. Design and research methodology

Every research inquiry requires the use of a suitable and customized methodology framework capable of effectively address its research questions, objectives, and/or underlying hypothesis throughout the research path. In the context of shelter and settlement studies, particularly those related to humanitarian setting, camps, and post-war reconstruction, it is essential to integrate and link the traditional empirical research methods with analytical approaches that can adequately capture spatial, social, economic and management dimensions. Accordingly, this study adopts a multidisciplinary methodological framework that synthesizes principles of humanitarian architecture and urbanism, applicable both in emergency contexts and in the pursuit of dignified and decent living conditions, with vernacular architecture practices. This integrated approach enables a nuanced understanding of humanitarian-built environments by acknowledging both institutional design frameworks and locally embedded knowledge systems, thereby supporting more sustainable, culturally responsive, and context-appropriate shelter and settlement solutions.

This methodological positioning is grounded in the broader field of humanitarian architecture and urbanism, which address a complex variety of interrelated issue such as shelter and settlement responses, forced displacement, planning, construction, and humanitarianism actions. These issues are examined further in detail across technical, social, cultural, economic, management, political, and aesthetical discourses and involve a wide array of humanitarian stakeholders/partners, such as local and national governments, donors, United Nations agencies, Red cross and Red crescent organizations, international and national non-governmental organizations (INGO and NNGO), civil society organizations(CSO), affected and host communities, as well as architects, engineers, and planners working in both academic and professional practice, alongside private-sector suppliers. Although there is general agreed key concepts and definitions within the field, humanitarian architecture and urbanism remains an evolving area of practice and inquiry, with ongoing developments that continue to demand critical examination and refinement.

Therefore, as a research philosophical positions pragmatism research paradigm is used in this thesis, in which acknowledges the existence of both a single objective reality and multiple subjective realities (ontological) and views knowledge as being generated through a combination of objective measurement and in-depth investigation of phenomena (epistemological).²⁷ This approach achieved by employing both quantitative and qualitative methods (methodology), enabling a comprehensive analysis that help to test the hypothesis (Crotty, 1998; Morgan, 2014; Saunders Mark et al., 2019).

The nature of this research involves studying the interaction between the war-affected communities (IDPs, returnees, non-displaced affected individuals and host communities) and the humanitarian agency shelter

²⁷ Crotty (1998) defines ontology as ‘the study of being’, referring to assumptions researcher makes about the nature and existence of reality, while epistemology concerns ‘the theory of knowledge’ embedded within a theoretical perspective and, consequently, informs the methodology.

and settlement responses during different phases of emergency management (Haddow et al., 2006). These interactions are influenced by their cultural norms, beliefs, and individual needs which gives the foundation and meaning of the research. The study focuses on human values and the right to access and live in a safe, dignified and standard shelter during displacement as well as in post-war situation, while also emphasizing and link with decent living conditions the ‘vernacular architecture’ that minimize further disaster-related risks. These values connect the researcher engagement to the research study and forms the basis of the axiology paradigm,²⁸ which emphasizes the practical consequences and usefulness of knowledge in addressing human needs (Maarouf, 2019).

Building on these foundations, the thesis aims to explore the relationship between humanitarian architecture and urbanism (HA/U) and the shelter and settlement responses both by humanitarian and self-made to forced displacement in Tigray through a mixed-methods approach. The overall methodology incorporates ethnographic and longitudinal research strategies to develop a comprehensive understanding of the phenomena over space and time.²⁹ To address the research questions and test the proposed hypotheses, two complementary approaches employed within a multi-method framework: (i) an empirical approach, which include qualitative case study analysis, interviews, focus group discussion (FGD), photography, drawings, GIS-based mapping, and quantitative surveys; and (ii) a theoretical approach, involved the review, discussion, and analysis of relevant concepts and theories. Within the empirical approach, a multi-case study design applied (Yin, 2003), combining both qualitative and quantitative analysis to capture the complex dynamic of forced displacement, shelters, settlements, camps with an urban and rural context. This design enabled the research to be conducted as empirical, multi-site ethnographic fieldwork³⁰, allowing the study to follow displacement process, shelter conditions, settlement nature in camps (both planned and unplanned), and practices in collective sites across multiple settings (Marcus, 1995; Mark-Anthony Falzon, 2009).

²⁸ In the pragmatic paradigm, axiology is viewed through the lens of practical consequences and usefulness rather than strict adherence to value-free objectivity or purely subjective interpretation (Maarouf, 2019).

²⁹ The main research involved active, day-to-day engagement, including systematic observation, note-taking, and photographic documentation of camps, as well as monitoring shelter responses for more than a couple of years across the study areas. This could be and action research complements ethnographic and longitudinal approaches by emphasizing participation, reflection, and iterative learning within real-life contexts (Kemmis et al., 2014; Reason & Bradbury, 2008). While ethnography provides an in-depth, contextual understanding of communities through immersion and observation (Hammersley & Atkinson, 2019), action research extends this by actively engaging participants in co-producing solutions to identified challenges (Lewin, 1946). The longitudinal component strengthens this approach by enabling sustained engagement over time, allowing researchers to observe, evaluate, and adapt interventions as social and spatial conditions evolve (Neale, 2019). Longitudinal research incorporates both time and space dimensions, as it tracks the same subjects across multiple time points (time dimension) and can consider different settings, environments, or populations (space dimension) to understand how context influences changes and patterns over time.

³⁰ Empirical multi-site ethnography is a research approach in which ethnographic fieldwork is conducted across multiple interconnected sites to empirically investigate complex social phenomena. As articulated by Marcus (1995) and further developed by Falzon (2009), this approach enables the researcher to follow people, practices, and processes across different contexts while preserving the depth, reflexivity, and contextual sensitivity central to ethnographic inquiry (Marcus, 1995; Mark-Anthony Falzon, 2009).

The primary case study focuses on the Tigray as a region, examining issues related to war-induced forced displacement, shelter and settlement. At both the planned-camp and urban scales, the cities of Mekelle and Shire were selected as case sites because they host the largest concentrations of IDPs and are experiencing severe humanitarian challenges. A comparative case study methodology employed to examine the two largest planned IDP camps in the region. The analysis identifies similarities, differences, and underlying factors related to internal spatial transformation, camp management structure, the provision of basic services, and their interaction with the surrounding peri-urban and urban areas.

In addition, the study examines interaction between shelter and settlement interventions with other humanitarian sectors. It also explores the relationship between the forcibly displaced populations and humanitarian responses, including shelter and settlement interventions, in order to understand the patterns of coordination and service delivery(sd). Shelter and settlement sector interventions considered in this study also included the reconstruction of vernacular housing for returned IDPs and affected host communities. Extensive field work was conducted from 2023 and 2025 across all the accessible zones of Tigray, with the exception of Western Tigray, which remained a ‘contested area’³¹ throughout the research period.

For its theoretical component, this study draws on a review literature and conceptual debates on ‘humanitarian architecture’ and ‘humanitarian urbanism’ as distinct yet related fields. Together, these sub-fields enable a more holistic understanding of humanitarian responses by linking shelter, settlement, and housing to urban systems, livelihoods, and long-term development. The study adopts Charlesworth’s (2015) definition of humanitarian architecture, which emphasizing the design and provision of decent and dignified housing before, during, and after crises, developed collaboratively with affected communities to enhance resilience, and grounded in principles of sustainability and ethics. This approach views disasters as opportunities to create safer and more equitable living environments, rather than merely replacing what was lost or addressing immediate needs (Charlesworth et al., 2015; Charlesworth, 2014). This definition provides a critical framework for understanding the overlapping phases of emergency, relief, recovery, and reconstruction (E-R-R-R), while also highlighting the importance of cultural sensitivity in the design and delivery of humanitarian responses. In this context, vernacular architecture can be understood as aligning with the notion of decent housing, in that it promotes resilience without undermining the dignity, cultural identity, and lived practices of inhabitants, while simultaneously incorporating appropriate contemporary technologies, as articulated in critical regionalist architectural approaches.

The theoretical understanding of humanitarian urbanism is informed initially by Potvin (2013), who examines the spatial, political, and neoliberal hegemonic dimensions of camps within urban contexts

³¹ After the outbreak of the Tigray war in November 2020, Western Tigray—constitutionally recognized under the FDRE—fell under the control of non-federal forces. As a result, UNOCHA and humanitarian organizations have referred to the area as a “contested area” in the context of humanitarian operations and response activities.

(Potvin, 2013). This perspective is further supported by the long-established theory of Agamben’s (1998) notion of the “*space of exception*,” in which camps are understood as zones of suspended legality and altered sovereignty, as well as by Agier’s (2008) interpretation of camps as spaces of humanitarian governance located at the margins of state control (Agier, 2008; Giorgio, 1998). While acknowledging the significance of these influential theoretical contributions, this study adopts a more focused analytical lens that emphasizing the spatial, social, economic and management dimensions of forced displacement, humanitarian responses and settlements, while giving less attention to the explicitly political aspects of humanitarian space.

Building on this shift in emphasis, Martín’s (2015) concept of the transition from “*spaces of exception*” to “*campscapes*” offers a valuable insight for understanding the evolving and increasingly relationship between camps and urban areas, while also extending but challenging Agamben’s (1998) theoretical framework (Giorgio, 1998; Martin, 2015a). Although much of the existing literature focuses on the interaction between refugee camps and urban contexts, as well as on camps in remote areas, this study instead centers on IDPs, a population that has received comparatively limited attention from governments, policymakers, and academic research, particularly in relation to planned IDP camps located on the peripheries of urban areas. Unlike refugees, IDPs remain within their national borders under domestic sovereignty, and their cultural, social, and economic practices are often more closely intertwined with those of host communities. This distinction necessitates a context-specific approach to humanitarian urbanism—one that moves beyond a refugee camp-centric perspective and engages more directly with the spatial, social, and governance dynamics unique to internal displacement.

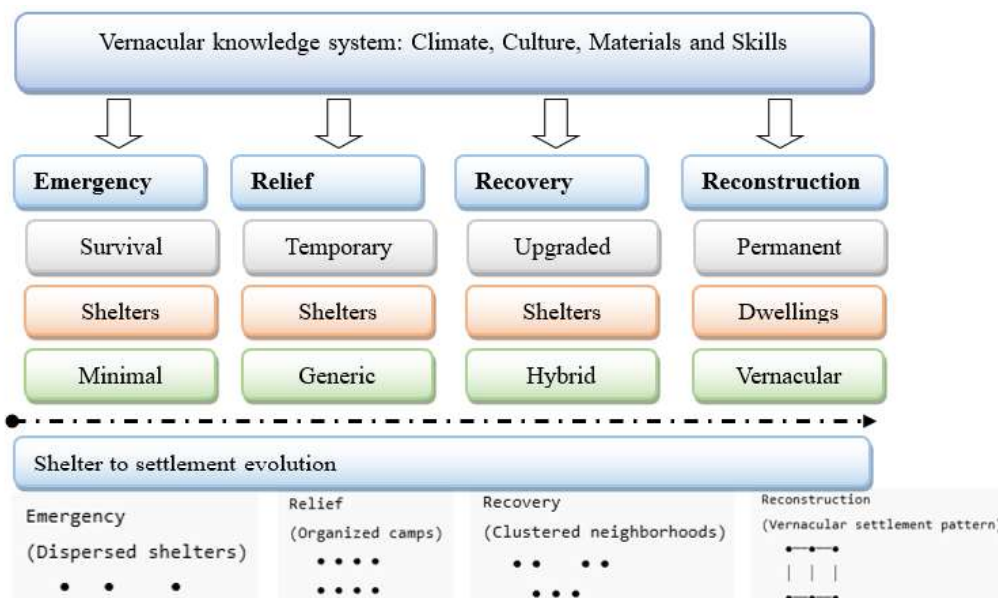


Figure 12: Relational abstraction of the shelter-settlement matrix and vernacular architecture within ERRR practices (Source: author, 2025)

Researcher position:

My academic background is in architecture and urban planning with a specialization in construction technology and management and hands-on engagement in humanitarian emergency and development settings has profoundly shaped my research philosophy. My practical experiences include in architectural design, town planning, and construction project management. However, the research reported in this thesis inevitably operates at the intersection of multiple disciplines, including architecture, urban planning, construction management, and social science.³² These disciplines are engaged at different levels and embraced through the development of research framework. The shelter and settlement sector particularly in the context of humanitarian emergency response for forcibly displaced population, post-war recovery and reconstruction for returnees and affected communities, and vernacular architecture are the core thematic focus of this study that links before, during and post-war conditions. This interdisciplinary grounding reinforces my pragmatic research philosophy and practices, employing a mixed-methods approach tailored toward actionable and context-responsive outcome. I approached knowledge as socially situated, ethically anchored, and purpose-driven, focusing on identifying real-world challenges and co-creating design frameworks that are locally meaningful and structurally responsive.

This research positioning is not only academic but also deeply informed by lived experience. During the two-year war, I was in Mekelle, Tigray, enduring the siege, blockade, and embargo together with my family. We lived without any form of communication, banking services, or electricity—an existence marked by deprivation and diminishing hope. Yet, amid these hardships, the spirit of solidarity, cooperation, and individual acts of humanitarian compassion remained truly unforgettable. During this period, Mekelle became overwhelmed by IDPs who were forced to live in dire conditions, lacking safety, dignity, and protection. Successive rounds of control by the command post administration³³ further intensified the humanitarian crisis and hinder accessibility. Following the Cessation of Hostilities Agreement (COHA) in November 2022, I had the opportunity to visit most parts of Tigray—except for Western Tigray, which remains inaccessible—and witnessed firsthand the extensive destruction of infrastructure and the people’s desperate need for basic services including shelter and further recovery and reconstruction. These experiences have underscored the personal and academic significance of this research, grounding it in realities that I have both observed and lived, and reinforcing the ethical and practical imperatives that underpin this study.

³² Both ethnographic and longitudinal rooted to social science but they become interdisciplinary research methods widely used in architecture and urbanism to understand how human actually experience, use, and adapt spaces over time. Ethnography shifts architecture and urbanism from *object-centered design* to *user-centered and context-sensitive design* whereas longitudinal methods challenge the idea of architecture as a fixed artifact and emphasize it as a *dynamic, evolving process*.

³³ Over the course of the two-year conflict, the Ethiopian National Defense Force and the TPLF/TDF operated through distinct military leadership hierarchies and command systems, which evolved across different phases of the conflict.

Living within a society affected by war and later working as humanitarian shelter experts shaped my methodological approach. This proximity allows me to conduct multisite ethnographic and longitudinal fieldwork more effectively through repeated engagement with affected populations, fostering trust, deeper understanding, and nuanced insights into participants’ experiences. While I acknowledge that I am not immune to bias, I actively address potential influences through a continuous reflexive process, including meticulous field notes, critical reflecting on my positionality, and collaborative discussing of interpretations with peers and participants to ensure rigor and ethical integrity. Likewise, I adhere to a proposed and mutually agreed-upon methodological protocol, maintaining a feasible degree of researcher distance throughout the research process. My role as a researcher is to apply a workable methodological framework that allows the enables inquiry and contributes to knowledge generation on a relatively new phenomenon of ‘war’ in Tigray—mass displacement into host community, the resulting high demand of ‘innovative’ shelter solutions, camp formation within urban areas, and extensive housing destruction and reconstruction through the humanitarian responses cycle (ERRR). Furthermore, this research highlights the contribution of vernacular knowledge to post-war housing reconstruction and shelter provision, reinforcing the integration of socially situated insights with actionable architectural and planning outcomes.

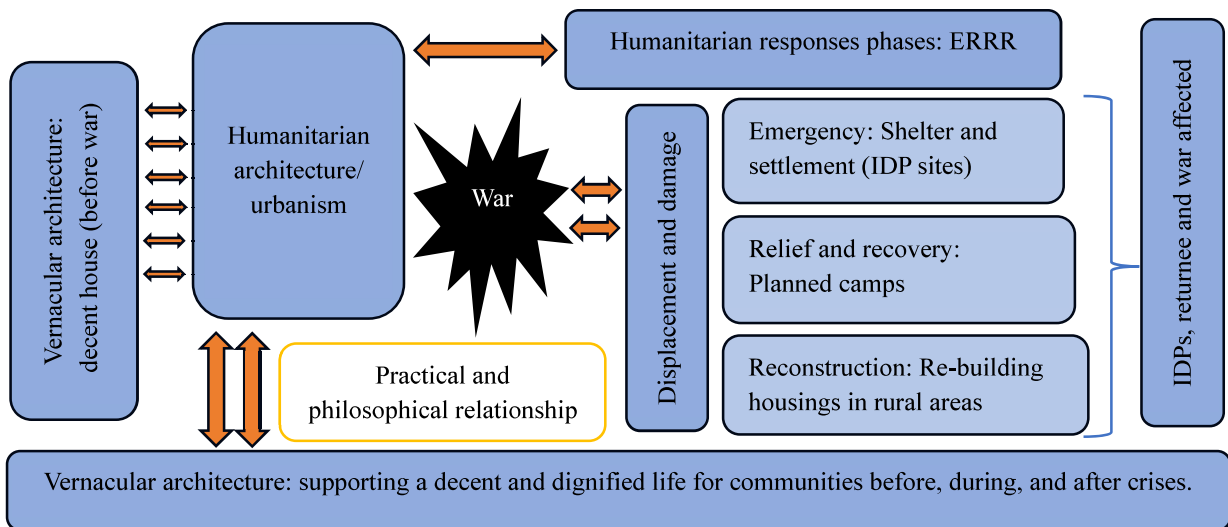


Figure 13: Theoretical and conceptual relationship among key concepts (Source: author, 2024)

Rationale for case study selection:

Tigray region hosts the highest number of IDPs, primarily as a result of the intense conflict in northern Ethiopia between November 2020 and November 2022. According to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) Tigray Humanitarian Update (August 2021), approximately 5.2 million people were reported to be in urgent need of humanitarian assistance, with

millions forcibly displaced within the region and classified as IDPs. Additionally, more than 63,000 individuals crossed into the neighboring country of Sudan, where they became refugees (OCHA, 2021b). Since November 2020, Tigray has faced heavy war, resulting in a significant influx of IDPs into major cities and urban areas including Mekelle and Shire. Between 1 to 26 June 2021, the Emergency Site Assessment (ESA) identified a total of 2,036,398 IDPs (432,358 households) across the region. Furthermore, according to IOM, CCCM (camp coordination and camp management) and Protection Cluster's intention survey conducted in Tigray region for the first time in July 2021, 7% of IDPs in Shire and 20% in Mekelle were residing in collective centers (CCCM Cluster et al., 2021).³⁴ The findings reveal large section of IDPs are living with a host community and underscore the urgent need for innovative and sustainable shelter programming as long-term solution to address the region's on-going humanitarian crisis.

Data from the Displacement Tracking Matrix (DTM) of the International Organization for Migration (IOM) indicate that approximately 80% of IDPs in Tigray reside within host communities in dispersed urban settings, with the majority concentrated in major urban centers such as Mekelle, Shire, Axum, Adigrat, Adwa, Abi Adi, Sheraro, Mekoni, and Maichew. Dispersed settlement also includes IDPs living in rental accommodation as well as living with friends, families and extended family members, while the remaining 20% are accommodated in planned camps, collective centres, and a small proportion in rural self-settled areas (IOM, 2023).

Among these urban centers, Mekelle and Shire host the largest proportion of IDPs where displaced populations are accommodated in collective centers, planned camps, unfinished buildings, self-settled areas, and within host communities, placing additional pressure on municipal services. The largest and most well-known planned camps include Seba Care Four (SC4) in Mekelle and Mai Dimu Camp in Shire-Endaselassie, both of which serve as major sites for displaced populations.

The impact of the war extends beyond the displacement of millions from their places of origin; it has also caused widespread damage to infrastructure and the built environment. Basic services, including education, healthcare, and water supply, have been severely disrupted, while private investments and factories have suffered significant losses. The conflict has also resulted in extensive environmental degradation. Housing has been particularly affected, with large sections of rural areas damaged, leaving hundreds of thousands of homes destroyed or uninhabitable. Overall, the war has had a devastating effect on both the physical and social fabric of the region.

³⁴ The household-level intention surveys aimed to better understand the intentions of internally displaced persons (IDPs) living in urban areas with high displacement concentrations, the barriers preventing them from achieving their preferred durable solutions, and the support required to pursue those solutions. The surveys were conducted in seven urban locations—Abi Adi, Adigrat, Adwa, Axum, Mekelle, Sheraro, and Shire—using representative sampling in each area.

Research limitation:

- Access and security issues: Following the war and ongoing instability, some areas of Tigray remain inaccessible. Field visits for data collection covered all zones except western Tigray, which continues to be restricted due to security conditions. Although there are more than 120 IDP sites across the region (with numbers varying over time), physical observations of shelters and settlements were conducted in selected representative sites, including but not limited to Mekelle, Shire, Maichew, Adigrat, Sheraro, Endabaguna, Hawzen, Bora, Fatsi, and Mokeni.
- Size: for this study two the biggest planned camp from Mekelle and Shire are considered as a case study for detail investigation. However, there are additional six small camp in different areas of Tigray which are not considered in this study. For the spontaneous IDP sites, register and humanitarian agency managed only considered. Post-war reconstruction also considered housing sector only. Other sectors such as health, education and water are beyond the scope of this research.
- Lack of prior studies on the topic: As this study focuses on phenomena following the war, there is very little prior literature or research on the topic in Tigray, or in Ethiopia more broadly. Globally, literature on IDPs shelter is also limited, as most studies tend to focus on refugees and camp setting.
- Data availability and access: Some data are difficult to obtain due to their sensitive nature, which creates gaps in overall reliability. For example, damage, loss, and needs assessment results are openly available from the government of Ethiopia (FDRE); however, similar data from the Commission of Inquiry on the Tigray Genocide (CITG) and some NGOs are not easily accessible. As a result, this research relies on the available official data.
- Humanitarian clusters: Humanitarian responses are organized into eleven recognized sectors (commonly referred to as clusters). Although a global restructuring into eight sectors began at the beginning of 2026, this change has not yet been officially implemented in Ethiopia. While this study primarily focuses on the socio-spatial and management aspects of displacement, particularly shelter and settlement, it also includes a limited discussion of other key sectors, such as WASH, education, health, camp coordination and camp management (CCCM), and protection.

Ethical Disclaimer

This research was conducted in full compliance with established research ethics norms, specifically adhering to the standards of the host institution, Iuav University of Venice, and the home institution, Mekelle University. Since the research took place in Tigray, Ethiopia, a formal support letter was provided by Mekelle University the Scientific Director's Office of the Ethiopian Institute of Technology (attached in the Appendix-A) and endorsed by research and postgraduate directorate office registered under reference number PG/EiTM/PhD/MU-NMBU/43/2012.

As a PhD researcher, I assumed full responsibility for explaining the purpose and scope of the study to participants in appropriate detail. Participants were informed of their involvement and participated voluntarily and willingly, with full respect for their privacy, safety, and anonymity. Given the vulnerable context in which the research was conducted, additional measures were taken to ensure protection and to avoid any potential harm. Photographs were taken by researcher and supervisor only with oral consent and source provided for those taken from different sources.

These doctoral studies were carried out and completed under the support and agreement of a Memorandum of Understanding scholarship between the home and host universities. The research carries no conflicts of interest or external interference from sponsorships or monetary support, beyond adherence to the protocols of both institutions.

Thesis framework and structure: chronological, logical, and thematic flow

The framework and structure of this thesis follow the actual sequence of events related to the study, linking conditions before, during, and after the war in a logical manner. The main focus is on shelter and settlement responses, as well as the concept of a decent and dignified way of living, as embodied in vernacular architecture, which was significantly disrupted by the conflict. The two-year war in Tigray resulted in the mass displacement of millions of people and widespread destruction of housing. During the conflict, initial shelter solutions were primarily provided by the affected communities themselves, followed by emergency shelter interventions from humanitarian organizations. In the subsequent phases of relief, rehabilitation, and recovery, efforts concentrated on restoring basic services and reconstructing housing, particularly in rural areas of Tigray. Throughout this chronological flow, standard academic research methods were applied to address the hypothesis and to complement each chapter of the thesis.

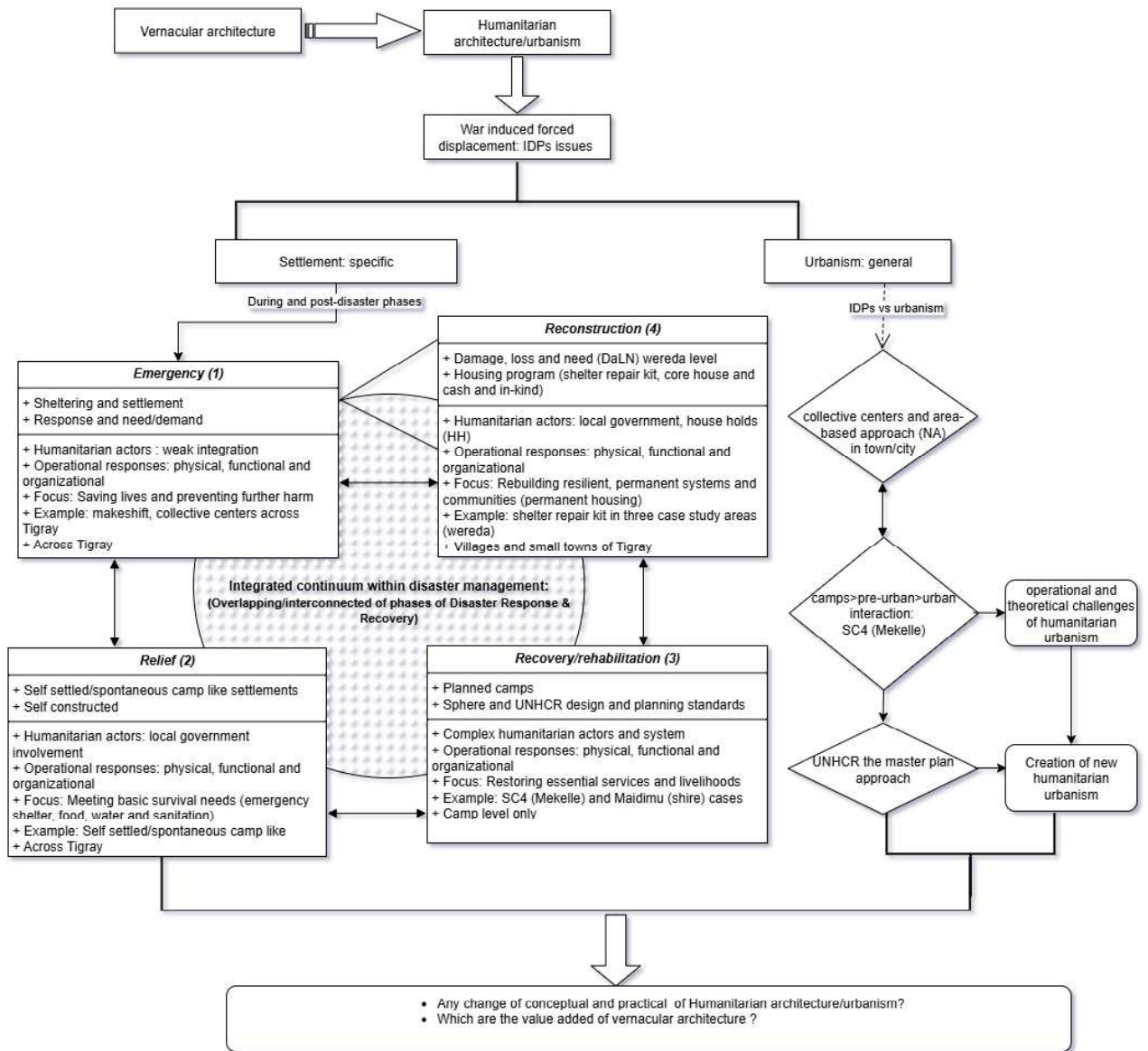


Figure 14: Thesis conceptual framework and research flow (Source: author, 2025)



Chapter One: Emergency Humanitarian shelter and settlement

This section examines the shelter and settlement needs, response strategies, and operational interventions during the emergency phase of the humanitarian crisis that followed the war. It emphasizes the role of vulnerable communities as the first and immediate responders, highlighting their quest of shelter and settlement stability. The section then turns to the processes and practices of humanitarian architecture, illustrating how design and implementation unfold in crisis contexts. Finally, it considers the organizational and managerial frameworks that shape humanitarian architectural responses.

1.1. Humanitarian Emergency: The Circle of Tragedy

Between 1984 and 1985, the world witnessed one of the most devastating famines of the 20th century, which, unfolded in Tigray and other parts of northern Ethiopia, created a large-scale humanitarian catastrophe including death of nearly a million and the displacement of millions more. Though initially attributed to natural causes like drought, extensive research has revealed that the famine was largely political factors—primarily the armed conflict between the Derg regime and insurgent groups as the TPLF.³⁵ What made this crisis especially tragic was its silence; the world remained largely unaware until it was exposed by a BBC report in October 1984.³⁶

In 1974, a decade before the devastating famine of the 1984/85, severe famine also broke out in Tigray and other northern parts of Ethiopia, resulting in deaths of hundreds of thousand people across the country. Much like in 1984/85, the government's response was largely passive. Similar food crises occurred in 1999–2000, 2002, and 2015; however, in these later cases, prompt government intervention prevented significant mortality, unlike in the earlier famines (De Waal, 2018).

A timeline analysis of conflict and famine in Tigray, Ethiopia reveals that since 1974, famine has recurred roughly every decade, often intensified by armed conflict and political instability. These repeated crises

³⁵ The armed conflict between the Derg regime (1974–1991) and the TPLF significantly exacerbated the humanitarian crisis in Tigray. According to Alex de Waal (1997), the 1984–85 famine should be understood not merely as a natural disaster caused by drought, but as a politically induced catastrophe. In his book *Evil Days: Thirty Years of War and Famine in Ethiopia*, De Waal further examines how political and military factors, including government policies and the dynamics of armed conflict, contributed to the occurrence and severity of famine in Ethiopia (De Waal, 1991).

³⁶ In October 1984, the BBC broadcast shocking reports on the Ethiopian famine, filmed mainly at Korem, Tigray. Presented by Michael Buerk, it described a “biblical famine” and showed extreme starvation. The report galvanized global public opinion and directly led to Band Aid and Live Aid. <https://www.youtube.com/watch?v=rvPxizhicpl>

represent a complex emergency shaped by convergent of conflict, weak governance, and climate-induced shocks such as drought as a result of rainfall variability. The pattern reflects a cyclical vulnerability that has persisted over time. Research consistently demonstrates a strong relationship between conflict and food insecurity. Empirical studies show that conflict disrupts food systems, destroys livelihoods, and deepens humanitarian emergencies (De Waal, 2018; Hendrix & Brinkman, 2013; Muriuki et al., 2023).

Today, in the 21st century, Tigray is in another second man-made humanitarian crisis, as a result of the 2020-2022 horrific and devastating war between the Ethiopia’s federal government and its allied forces against the TPLF, later reframed as Tigray Defense Force (TDF).³⁷ The conflict resulted in nearly a million of deaths, the displacement of millions, and left war-torn Tigray trapped in yet another cycle of humanitarian crisis (Plaut & Vaughan, 2023).³⁸ Peace was final achieved with the signing of the Cessation of Hostilities Agreement (COHA) also commonly known as the Pretoria peace agreement in November 2022. This was followed by formation of interim regional administration (IRA) charged with managing the humanitarian situation and initiate the recovery and reconstruction efforts.

Table 2: Conceptual map in timeline format: Tigray and the cyclical pattern of conflict and famine (1974-2022)
(Source: author’s compilation 2024)

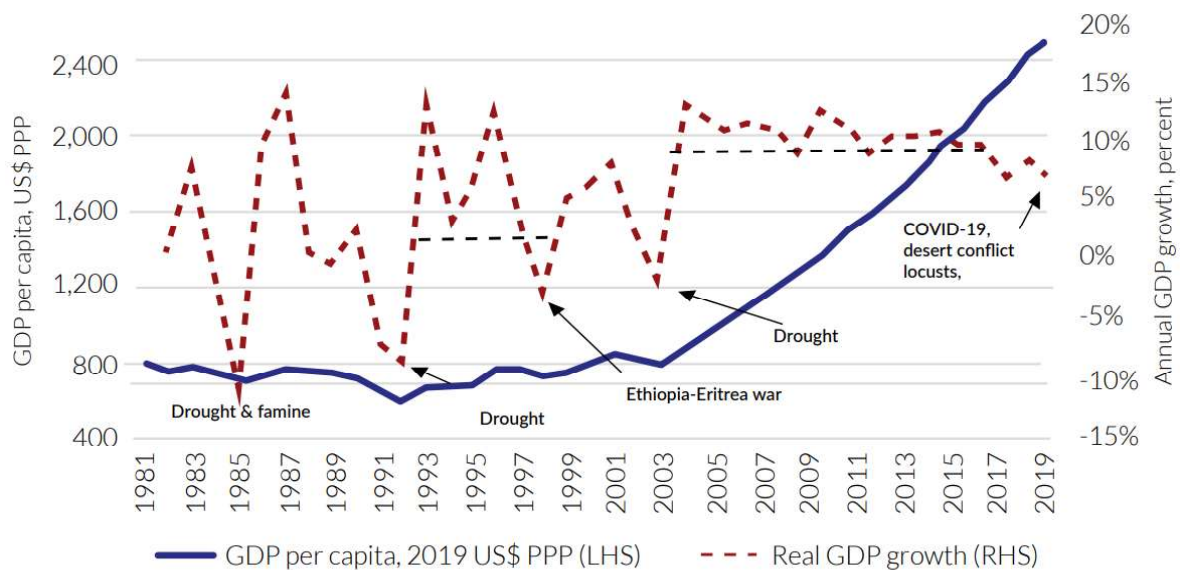
Year (s)	Type of humanitarian crisis	Key drivers and root causes	Remarks /Key observations
1974	Famine and drought	Severe drought combined with imperial neglect, exacerbated by natural disasters and governance failures	Sparked political upheaval and fall of the monarchy
1984/85	Great Ethiopian famine	Drought intertwined with armed conflict between the Derg regime and rebel forces, exacerbated by natural disasters and governance failures, represent a conflict-driven crisis.	Food used as weapon of war
1991	War and conflict: civil war aftermath	Rebel victory over the Derg regime and the ensuing post-conflict crises	Infrastructure damaged
1998-2000	Border war (Ethiopia-Eritrea)	Interstate war and conflict-driven crises	Heavy infrastructure damage
2002-2003	Climate-induced food insecurity and poverty	Climate change (CC), drought and poverty contribute to food insecurity	Limited famine in Tigray; early warning systems improved but structural risks persisted

³⁷ The Tigray Defense Forces (TDF) is a military organization established in late 2020 or early 2021 following the outbreak of the Tigray War. It comprises regional special forces, local militias, former members of the Ethiopian National Defense Forces (ENDF), and civilians, and is primarily led by the TPLF and other leaders.

³⁸ According to Martin Plaut of the Institute of Commonwealth Studies, the number of war-induced deaths varies depending on the source, as indicated in the introduction section of this thesis and also discussed in the book *Understanding Ethiopia’s Tigray War* (Plaut & Vaughan, 2023).

2020-2022	Tigray war and famine	Civil war marked by sieges, blockades, and embargoes, and deliberate obstruction of humanitarian aid	UN and humanitarian agencies state famine used as a weapon of war, large-scale humanitarian catastrophe
-----------	-----------------------	--	---

Considering the pre-conflict period prior to the 2020 war, Tigray—like Ethiopia more broadly—experienced remarkable economic growth over the past two decades, leading to a substantial increase in income per capita. In contrast, economic performance during the 1980s and 1990s was highly volatile. GDP contracted in 1983/84, 1991/92, and 2002/03 due to severe droughts and famine, and again in 1997/98 following the war with Eritrea. Since 2003/04, Ethiopia has been among the fastest-growing economies globally, with average annual GDP growth of around 10 percent between 2003/04 and 2019/20, largely driven by public investment. This sustained growth translated into a sharp rise in income per capita, which more than tripled over the period 2003/04–2019/20 (see the Figure 15 below). According to the national poverty line (Government of Ethiopia, 2017), approximately 12 million people moved out of poverty between 2000 and 2016, representing a 45 percent reduction. However, the outbreak of the Tigray conflict in 2020 inflicted severe economic damage, with the war-affected Tigray region experiencing particularly profound losses and economic disruption. (World Bank, 2022)



Source: AfDB 2021; Conference Board 2021; World Bank 2021.

Note: GDP: gross domestic product; PPP: purchasing power parity; LHS: left hand side; RHS: right hand side.

Figure 15: Real GDP Growth and GDP per Capita in Tigray (Ethiopia): Natural vs. Man-Made Crises (Source: AfDB 2021)

The economic devastation caused by the Tigray conflict was accompanied by large-scale population displacement, further undermining livelihoods and recovery prospects. Ethiopia hosts approximately 4.38 million IDPs, one of the largest displacement crises globally (IOM, 2023). Prior to the COHA, over 2 million people from Tigray—around 40% of the region’s population - had displaced internally and more than 70,000 fled to Sudan as refugee.³⁹ In 2025, despite some return efforts, roughly 1 million individuals remain displaced, largely due to inaccessibility issues as a result of security in western, south and other zones of Tigray (IOM, 2025).⁴⁰ According the Internal Displacement Monitoring Center (IDMC)⁴¹, the number of IDPs in Ethiopia varies depending on the underlying cause, with conflict, climate change (CC), and drought identified as the primary drivers of displacement.

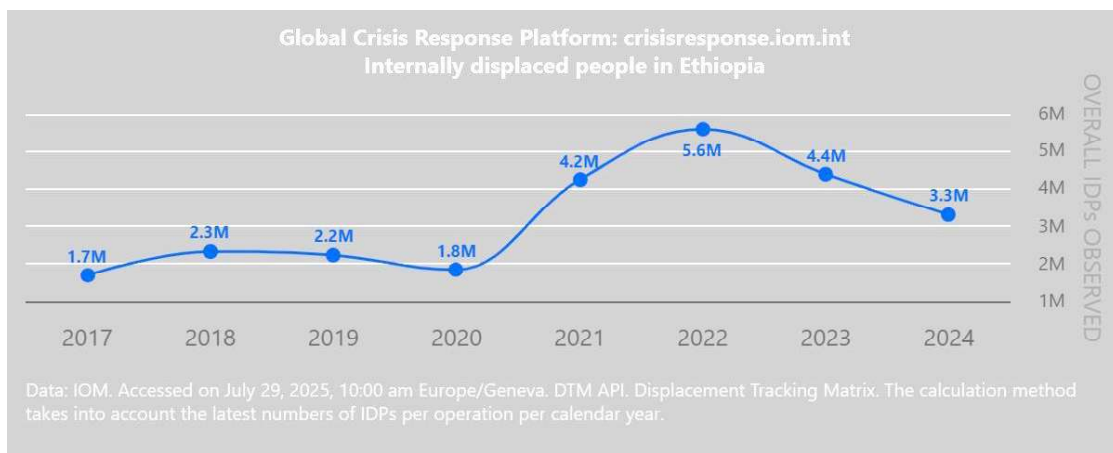


Figure 16: IDPs in Ethiopia since 2017 (Source: IOM DTM, July 2025)

Model of Disaster management cycle

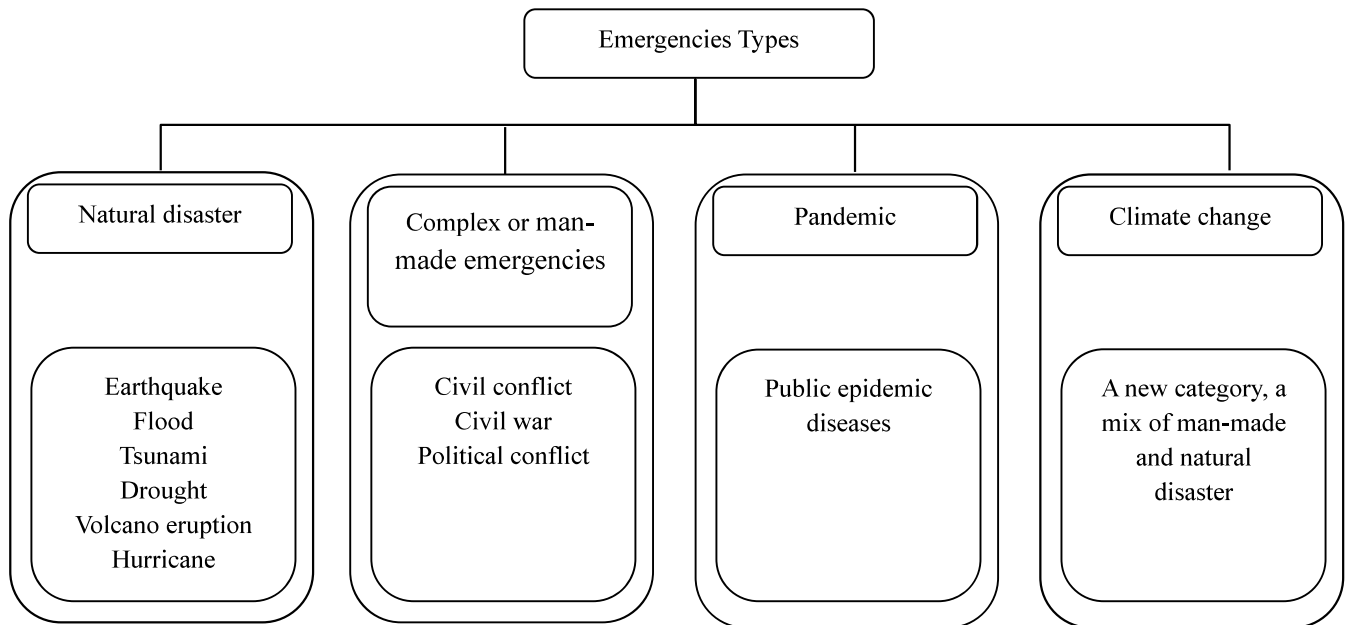
The conceptual framework of the disaster management cycle helps to categorize the stages or phases of disasters. Traditionally, the cycle comprises four interrelated and overlapping stages: mitigation and preparedness, which occur prior to the onset of an extreme event, and response and recovery, which take place after the event. Although the framework was originally developed to address natural hazards, it remains analytically relevant for complex man-made emergencies. With appropriate contextual adaptations,

³⁹ Some refugees returned from Sudan to Ethiopia; however, they were unable to access their places of origin and, consequently, lived as IDPs in various settings across Tigray—a situation that can be described as having a “double status.” Evidence of this was gathered through discussions with individuals in this situation at the SC4 IDP camp in Mekelle, and within host communities in Shire and Endabaguna.

⁴⁰ Tigray region hosts the highest number of reported returning IDPs (an estimated 1,120,483 returning IDPs or 39.8% of the assessed national caseload).

⁴¹ The Internal Displacement Monitoring Centre (IDMC) collects and analyzes data on internal displacement caused by conflict, disasters, and climate change. Its annual Global Report on Internal Displacement (GRID) provides comprehensive data and analysis on displacement trends worldwide.

the disaster management cycle can be applied to armed conflicts, including the war in Tigray, as such crises similarly involve risk reduction, emergency response, and long-term recovery processes (Coppola, 2020).⁴²



In the aftermath of the Tigray war, the situation rapidly escalated into a complex humanitarian emergency⁴³ that persisted until the signing of the peace agreement. During this period, humanitarian agencies or partners were compelled to address immediate relief needs while simultaneously engaging in recovery and reconstruction efforts, as the absence of effective governance created a significant operational vacuum.⁴⁴ Throughout these cycles or phases, humanitarian agencies or partners were responsible for responding to urgent crises and supporting longer-term recovery initiatives—often within contexts marked by limited capacity for preparedness, prevention, and mitigation efforts by local and federal government. This finding and/or observation aligns with Lobos (2011), whose comparative analysis of global disasters demonstrates that countries employ varying frameworks and strategies in managing both natural and human-induced crises. Lobos further notes that developing nations are particularly vulnerable to such shocks, resulting in their prolonged involvement in emergency, relief, and recovery, and reconstruction cycles, while exhibiting relatively weak preparedness and mitigation capacities (Lobos, 2011).⁴⁵

⁴² Coppola, 2020: *Introduction to International Disaster Management (4th edition)*. According to the book, the disaster management cycle works also for manmade disaster like conflict and war with some nuanced adaptations.

⁴³ Complex emergencies are major humanitarian crises caused by multiple, interconnected factors—often involving political instability, armed conflict, war, or civil strife—that require a large-scale, system-wide humanitarian response (Duffield, 1994).

⁴⁴ At the onset of the war, a government vacuum emerged. During the conflict, different forms of governance were established, including a federal government-appointed interim administration, followed by command posts established by the Tigray side, and, following the peace agreement, the formation of an interim administration.

⁴⁵ Lobos (2011) in a book *Architecture for Humanitarian Emergencies* explores how architecture can effectively address disasters, conflicts, and humanitarian crises by providing safe and dignified shelter. The work emphasizes that emergency architecture should

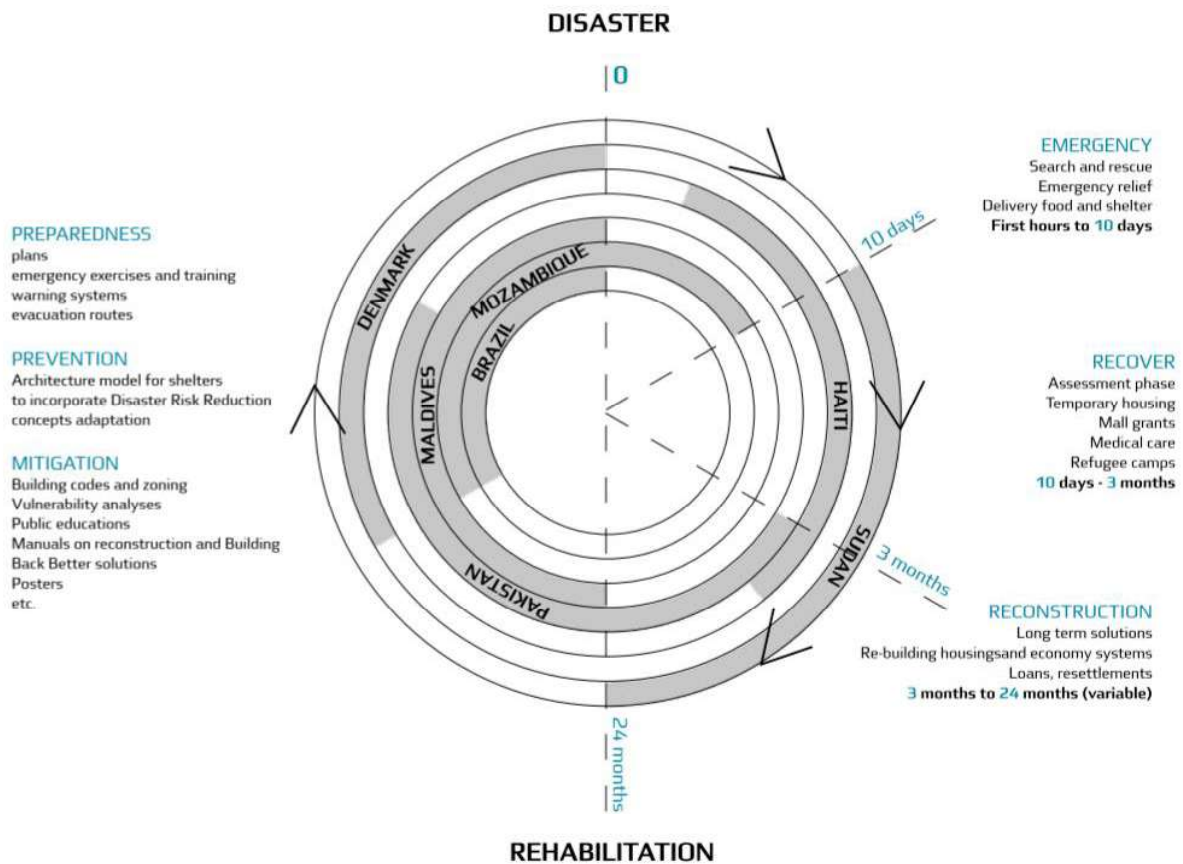


Figure 17: Circle of tragedy: disaster circle diagram of different countries (Lobos, 2011)

In a complex humanitarian emergency—characterized by full-scale war, mass displacement, widespread destruction, armed conflict, political instability, and the collapse of local administration, shelter, and settlement systems—international humanitarian assistance becomes essential. Local and national resources alone are often insufficient to meet the urgent relief needs. Furthermore, the scale and complexity of such crises typically exceed the capacity of any single humanitarian organization, making coordinated international support crucial for an effective response.

Among the most urgent needs in any emergency, shelter is typically one of the most essential needs during any type of emergency and is typically prioritized in the initial phase of the immediate response cycle, which spans from the first hours after a crisis to the first ten days. However, the experiences of IDPs from the western parts of Tigray and other war-affected areas reveal that many households spent three weeks or more traveling to reach major urban centers that were considered safe havens at the time. During

extend beyond temporary solutions to support long-term recovery and resilience. It underscores the crucial role of architects collaborating with humanitarian organizations and affected communities, advocating for participatory, context-sensitive design that honors local culture, climate, and resources. The book further connects architecture with human rights, ethics, and sustainable development in emergency contexts.

displacement, families often spent weeks hiding and moving through rural areas, sleeping in open fields, caves, forests, or other exposed environments with no shelter situation. Many families experienced multiple displacements in their search for immediate emergency shelter solutions. In many cases, collective centers, such as schools, frequently served as the first safe locations for displaced families seeking refuge from forced displacement.^{46,47,48,49,50}

These prolonged and fragmented displacement trajectories underscore the critical role of coordinated shelter and settlement responses once local coping mechanisms are exhausted. Shelter and settlements humanitarian actors therefore rely heavily on funding and technical support from the UN, international NGOs, donors, and other stakeholders when local capacities are insufficient to meet standard response requirements. While the initial response is typically led by affected communities and local authorities, subsequent interventions focus on providing emergency shelters across diverse settings, often shaped by the resources available within the local area as well as imported materials or shelter kits. Over time, these interventions can evolve into more organized humanitarian settlements, ranging from individual shelters to interconnected settlements systems. Beyond meeting immediate needs, such interventions reflect principles of humanitarian architecture and urban planning, and in the longer term, recovery and reconstruction efforts increasingly integrate cultural, climatic, and environmental considerations, drawing on vernacular housing knowledge to promote resilient and context-appropriate built environments.

⁴⁶ Sources: Local media stories on IDPs from Tigray and Dimtsi Weyane (DW) TV.

⁴⁷ [Dire situation for displaced mothers and children in Tigray, Ethiopia | Ethiopia | World Vision International](#)

⁴⁸ [The hopes and dreams of Tigray's displaced children | Plan International](#)

⁴⁹ [Tadesse's Journey | UNICEF Ethiopia](#)

⁵⁰ [Serious obstacles are preventing Tigray's IDPs from going home and getting back to work - Equal Times](#)

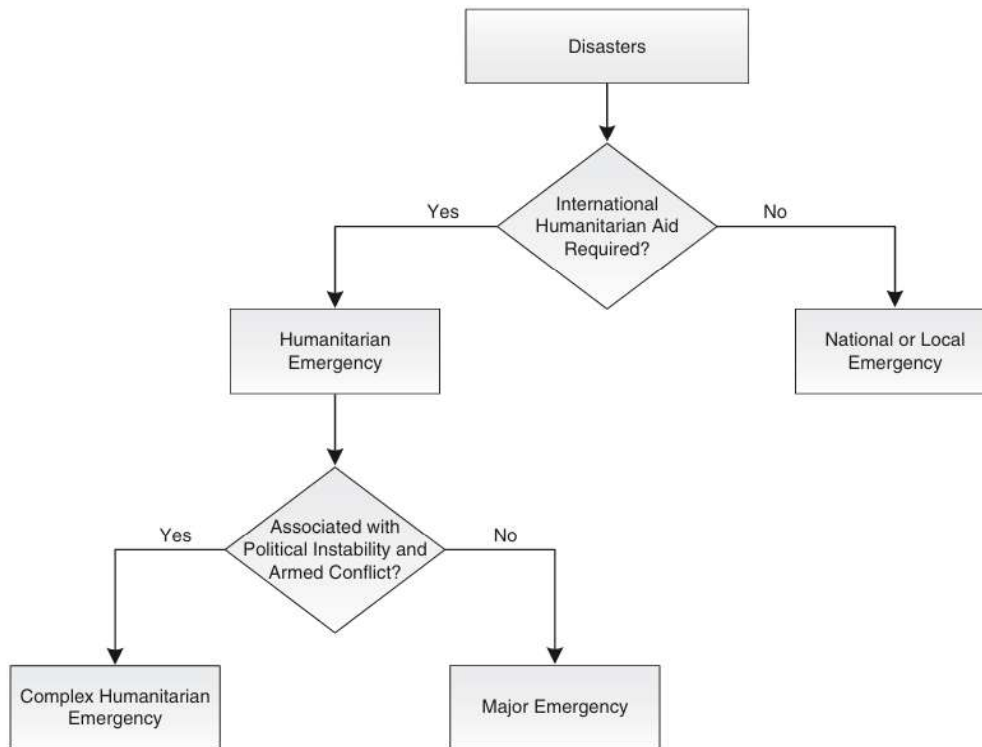


Figure 18: Tigray war and complex humanitarian emergency: concept and real-world application (Anderson & Gerber, 2018)

1.2. Need, demand, and reaction: Addressing unmet needs

Article 25(1) of the Universal Declaration of Human Rights (1948) affirms that “everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care ...” (United Nations General Assembly, 1948)

Humanitarian agencies operate according to four core humanitarian principles—humanity, neutrality, impartiality, and independence—which guide all emergency response efforts (UN General Assembly, 1991).⁵¹ These principles ensure that assistance is delivered based solely on need and without discrimination, particularly in the chaotic context of disasters. They affirm every person’s inherent right to live with dignity, emphasizing respect for life and the preservation of human well-being during crises (Sphere Association, 2018). They also require agencies to provide protection and security, recognizing that vulnerable populations face heightened risks during emergencies. In addition, the principles guarantee the right to access humanitarian assistance, ensuring that no affected individual is denied life-saving support.

⁵¹ The first three principles (humanity, neutrality and impartiality) are endorsed in General Assembly resolution 46/182, adopted in 1991. The fourth principle (independence) was added in 2004 under General Assembly resolution 58/114. These principles are reaffirmed in subsequent humanitarian resolutions of the General Assembly and the Economic and Social Council.

These commitments align with international human rights frameworks that affirm all individuals have the right to adequate housing, including protection from forced eviction and access to safe and secure shelter (Office of the United Nations High Commissioner for Human Rights, 2021).

Article 25 of the *Universal Declaration of Human Rights (1948)* recognizes adequate housing (shelter) as a fundamental human right and an essential component of an adequate standard of living (United Nations General Assembly, 1948). During crises such as armed conflict, large numbers of people are displaced from their homes and are forced to seek temporary accommodation. IDPs often experience the destruction or loss of their homes, insecurity, and deprivation of basic necessities. Consequently, the demand for shelter corresponds directly to the number of displaced households. Similarly, returnees and war-affected host communities also possess the right to adequate housing and urgently require appropriate shelter solutions. In line with the principles of Article 25, governments and humanitarian organizations share both a moral and legal obligation to ensure that displaced populations have access to safe, adequate, and dignified shelter. Shelter serves not only as a physical necessity but also as a foundation for protection, privacy, health, and human dignity.

Taken together, the humanitarian principles and international human rights norms provide a coherent framework for understanding shelter not merely as a logistical response to emergencies, but as a rights-based obligation. By grounding humanitarian action in dignity, non-discrimination, and protection, these principles translate abstract human rights commitments into practical responsibilities during crises. In this context, shelter emerges as a central component of humanitarian assistance, linking immediate life-saving interventions with the longer-term realization of the right to an adequate standard of living. This connection is most evident in situations of displacement, where the loss of housing directly threatens safety, health, and human dignity.

Shelter is more than a roof; it is safety, dignity, and protection in times of crisis (Office of the United Nations High Commissioner for Human Rights, 2021; Sphere Association, 2018; UNHCR, 2014a).

Shelter and Settlement needs:

Shelter is a basic human right; “the house is man’s affirmation in space” (Bachelard, 1958).

Shelter is a basic human right, embodying security, identity, and belonging – as expressed in the idea that “the house is man’s affirmation in space” (Bachelard, 1958).⁵² However, in humanitarian emergency

⁵² In *The Poetics of Space*, Bachelard explores how houses and shelters are more than physical structures—they are intimate spaces that shape our memories, dreams, and sense of self. He emphasizes that corners, rooms, and nooks serve as places of safety, imagination, and personal reflection, allowing individuals to retreat into their inner world. Ultimately, the house becomes a symbolic extension of the psyche, representing both protection and the imagination’s capacity to transform ordinary spaces into poetic experiences.

situations, the provision and space making of shelter are largely determined by the capacities of humanitarian organizations—specifically the availability of resources, logistics, and operational constraints—rather than by the actual shelter needs of the affected population. In most situations, the demand for shelter far surpasses the assistance provided (S. Bekele et al., 2025).

Quantifying humanitarian needs after a disaster is a complex process that need coordination and collaboration of multi stakeholders including government (national and local), UN agencies and NGOs. Multi-Cluster/sector Initial Assessment (MIRA)⁵³ conducted following the onset of disaster - typically coordinated by OCHA - is conducted to provide abroad understanding of the situation and urgent needs on the ground. Following the MIRA, individual clusters carry out more detailed or sector-specific assessments. Emergency Shelter and Non-Food items (ES/NFI) cluster⁵⁴, in collaboration with its humanitarian partners, contributes to identifies the shelter and settlement condition and need. As part of the MIRA process, the ES/NFI cluster develops a sector-specific rapid assessment form/tool, and when needed, conducts further in-depth assessments through its technical working groups (TWiG)⁵⁵ represented from different partners (OCHA, 2015; UNHCR, 2024).

However, despite these coordinated assessment efforts, gaps often remain between identified needs and actual aid delivery. According to the 9th edition of Shelter Projects⁵⁶ by the Global Shelter Cluster — a coordination mechanism under the Inter-Agency Standing Committee (IASC) that facilitate support to disaster-affected populations — there is a consistent gap between the number of people targeted for shelter and non-food item (NFI) assistance and those actually reached. Between 2016 and 2022, millions of people were identified as needing support each year, but the number of beneficiaries who ultimately received aid was consistently lower. This data underscores the global disparity in disaster impact and response efficacy, emphasizing the need for improved disaster preparedness, response strategies, and equitable resource allocation (Global Shelter Cluster, 2023).

⁵³ Multi-Cluster/Sector Initial Rapid Assessment (MIRA) is a joint needs assessment tool used in sudden-onset emergencies, including Inter-Agency Standing Committee (IASC) system-wide Level 3 responses, to support rapid, coordinated analysis of humanitarian needs across sectors (Office for the Coordination of Humanitarian Affairs (OCHA), 2015).

⁵⁴ The ES/NFI Cluster is a humanitarian coordination mechanism that convenes organizations involved in delivering emergency shelter and essential household items to populations affected by crises. At the global level, it operates as the Global Shelter Cluster, which provides overall coordination for shelter and settlement responses and remains continuously active. At the country level, however, the cluster is activated on an as-needed basis in response to specific emergencies.

⁵⁵ Global Shelter Cluster, provided a sectoral level need assessment using tools. [2F: In-Depth Sectoral Needs Assessment | Shelter Cluster](#)

⁵⁶ Shelter Projects is a series of case-study compilations illustrating project options available to agencies and institutions working in humanitarian shelter. Through annual (2008, 2009, 2010) and biannual (2011-2012, 2013-2014, 2015-2016, 2017-2018, 2019-2020, 2021-2022) publications, Shelter Projects aims to improve the capacity of humanitarian actors to meet the shelter needs of disaster - and conflict - affected populations by disseminating shelter responses and promoting learning from experience. www.shelterprojects.org

This global pattern of unmet shelter needs is also evident at the country level. A comparative of shelter needs between 2021 and 2024, based on the Joint Intersectoral Analysis Framework (JIAF) methodology⁵⁷ and complemented by Shelter Cluster sectoral analyses conducted in line with JIAF guidance, shows that both the number of people in need (PiN) and the severity of shelter needs—reflected in conditions such as damage, displacement, shelter adequacy, and access to services—have remained consistently high. Despite various response efforts since the onset of the conflict, IDPs, returnees, and host communities continue to face significant shelter and settlement challenges, underscoring the ongoing need for humanitarian intervention.

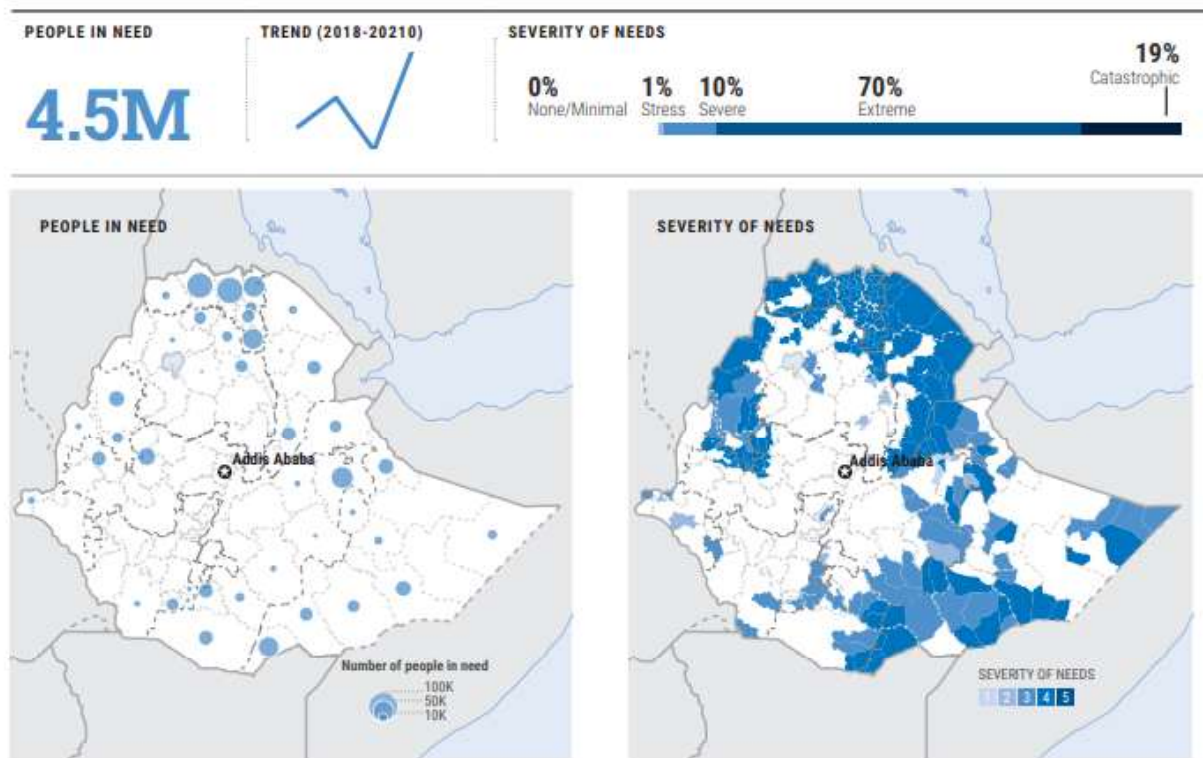


Figure 19: Humanitarian shelter needs in Ethiopia, 2021 (OCHA, 2021c)

In 2021, the escalation of the Tigray conflict across northern Ethiopia—including the Afar and Amhara regions—triggered a large-scale humanitarian crisis, leaving an estimated 4.5 million people in need (PiN) of shelter assistance. This figure closely mirrored the number of IDPs at the time, reflecting an unprecedented level of displacement in Ethiopia’s history and positioning the country as having the highest number of IDPs in Africa (OCHA, 2021). By 2024, two years after the signing of the peace agreement, approximately half of the displaced population from Tigray had been able to return to their places of origin.

⁵⁷ Joint Inter-Sectoral Analysis Framework (JIAF) is a methodology developed by humanitarian actors to improve how needs are assessed and prioritized across multiple sectors in crisis situations. It plays a key role in the Humanitarian Programme Cycle (HPC) and supports the Humanitarian Needs Overview (HNO) process.

However, the Amhara region continued to experience protracted conflict, sustaining high shelter needs that affected around 3.6 million people—comprising 2.3 million IDPs, 1.1 million returnee IDPs, as well as returning migrants and non-displaced yet conflict-affected communities (UNOCHA, 2024).

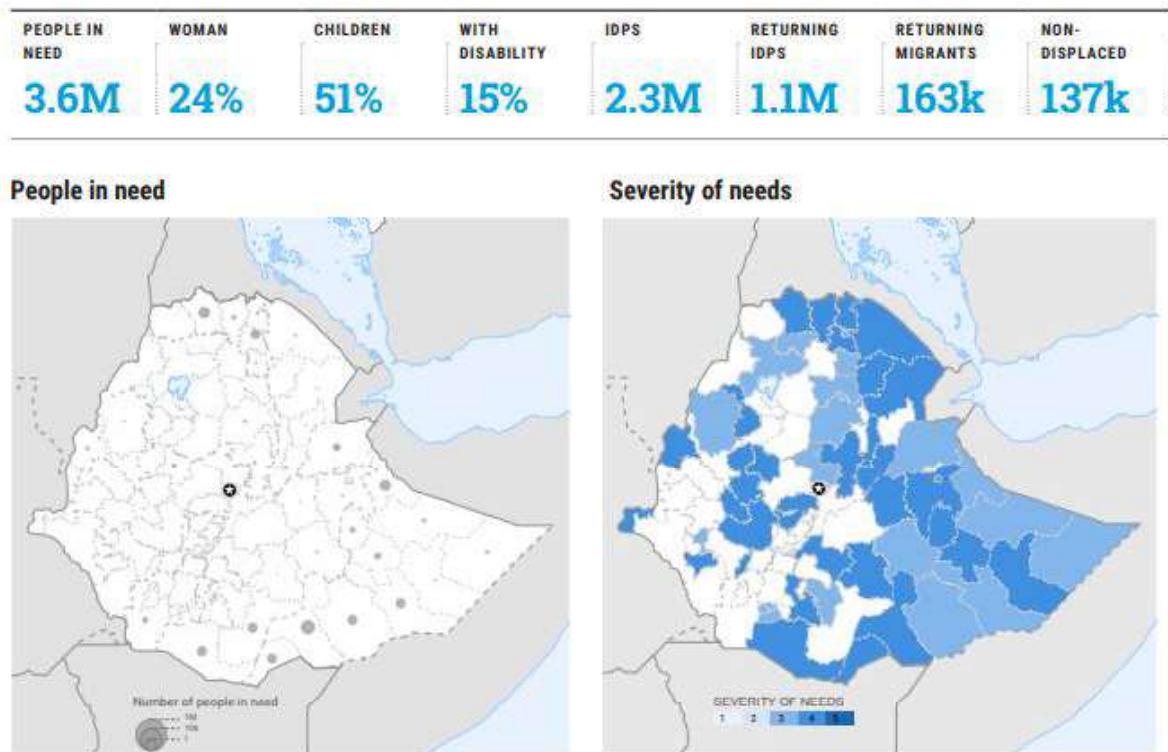


Figure 20: Humanitarian shelter needs in Ethiopia, 2024 (UNOCHA, 2024)

An analysis of sectoral need among of IDPs, returnees, and non-displaced affected communities across Tigray’s zones (with the except western zone) reveals that food remain the most urgent and widespread need, followed by shelter. This pattern reflects a hierarchy of basic human needs, consistent with Abraham Maslow’s (1943) Hierarchy of Needs, which identifies physiological requirements such as food and shelter as fundamental to human survival and well-being (Maslow, 1943).⁵⁸ At the same time, the legal foundation for the right to housing is articulated in Article 25 of the Universal Declaration of Human Rights (1948)⁵⁹, which recognizes adequate food and housing as essential components of an adequate standard of living(United Nations General Assembly, 1948). Despite ongoing humanitarian responses, the persistence

⁵⁸ Abraham Maslow’s Hierarchy of Needs (1943) is a motivational theory that explains human behavior as being driven by a series of needs arranged in a hierarchy. Maslow proposed that lower-level needs must be satisfied before higher-level needs become important. Shelter is among the lowest-level physiological needs for human beings.

⁵⁹ Article 25 of the Universal Declaration of Human Rights establishes that all individuals are entitled to a sufficient standard of living, including adequate housing, health, and well-being, highlighting shelter as a basic human right(United Nations General Assembly, 1948).

of severe food insecurity alongside extensive shelter deficits underscores the continued and critical need for comprehensive humanitarian intervention in Tigray (Annys et al., 2021).

Overall number of people in need and sectoral severity

REGION	ZONE	CCCM	EDUCATION	NUTRITION	FOOD SECURITY	HEALTH	PROTECTION	SHELTER	WASH	INTER SECTORAL	OVERALL PIN	IDPS	RETURNING IDPS	RETURNING MIGRANTS	NON DISPLACED	FOOD PIN
Tigray	Central	4	4	4	5	4	4	4	4	4	687,528	211,083	191,236	-	285,209	852,962
Tigray	Eastern	4	4	3	5	4	4	4	4	4	704,558	124,066	266,054	-	314,437	918,064
Tigray	Southern	3	3	3	5	4	4	4	4	4	354,492	82,727	65,828	-	205,937	219,644
Tigray	Western				1	2				3	130,430	9,699	-	-	120,731	217,516
Tigray	South Eastern	4	3	3	5	3	4	4	4	4	327,358	37,599	136,695	-	153,064	581,051
Tigray	Mekele	4	3	3	-	3	3	4	3	3	289,350	224,548	-	-	64,802	224,548

Figure 21: Humanitarian shelter and other sectors need in Tigray (UNOCHA, 2024)

Shelter and Settlement interventions:

Two years after the signing peace agreement, IDPs in Tigray are neither fully returned to their home villages nor received the basic and dignified shelter and settlement responses. The humanitarian response continues to deteriorate as many humanitarian partners withdraw due to funding cuts and resource shortages.⁶⁰ As a result, IDPs remain to live in precarious conditions, living in makeshift shelters, overcrowded classrooms, and even open spaces. In the absence of sufficient humanitarian support, many displaced households have resorted to self-recovery efforts, attempting to meet their shelter and settlement needs using whatever limited resources are available.

In 2023, the shelter and non-food item (NFI) response achieved one of the highest percentages of people reached relative to its target, reaching 63% of the 1.1 million targeted individuals. The ESNFI cluster has provided responses in cash for rent (CFR), shelter repair kits (SRK), emergency shelters (ES), and ES/NFI distributions to IDPs, returnees, and affected non-displaced communities in Tigray. The interventions come up persistent challenges includes: the relocation of IDPs facing evictions from collective centers such as schools, private grey buildings, and public facilities across the region; the ongoing influx of IDPs from different part of areas (Ethiopia ES/NFI, 2024). However, in 2024, more than 92 schools still function as collective centers, where IDPs live in overcrowded and substandard conditions. This situation disrupts education for thousands of children and strain relations with host communities, who face limited access to essential services, especially schooling (Ethiopia ESNFI, 2025b). According to the ES/NFI cluster report, shelter assistance in Tigray reached only 20.6% of the targeted population, which is lower than the average

⁶⁰ Since early 2025, USAID funding cuts have severely affected global humanitarian operations, including the humanitarian shelter and settlement sector. In Ethiopia, where USAID has long supported key areas basic sectors, over \$3.6 billion in aid was provided in 2020 and \$3.6 billion 2022. However, the recent reductions now pose serious challenges to sustaining essential humanitarian and development services.

country level repeses (Ethiopia ESNFI, 2025).⁶¹ Significant shelter needs remain unmet, highlighting the urgent requirement for increased resources and innovative approaches from humanitarian partners.

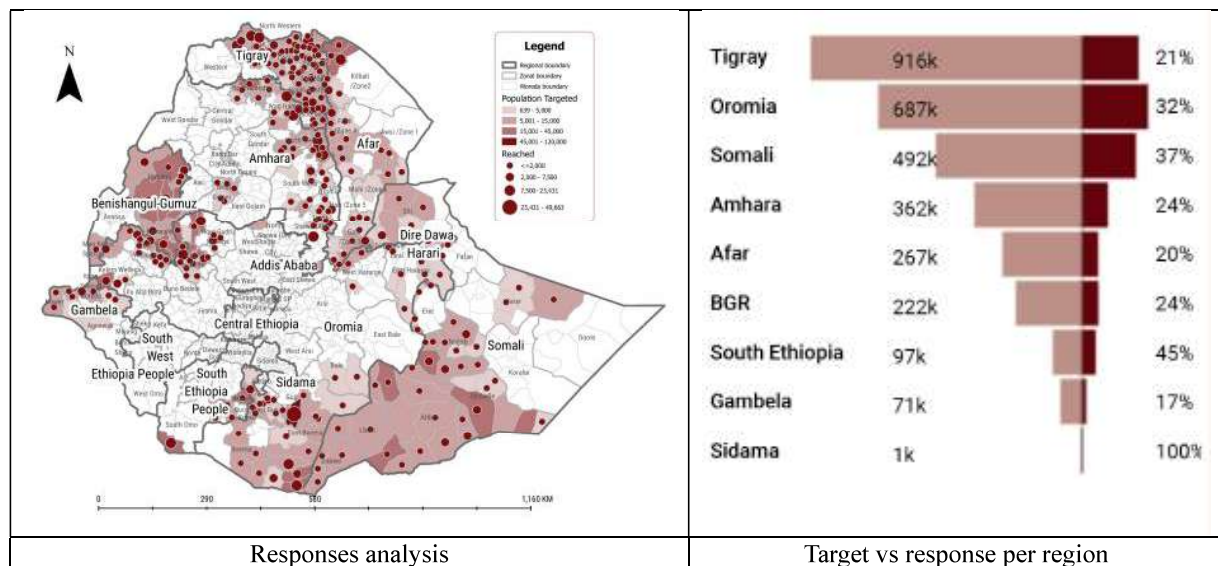


Figure 22: Shelter target and responses in Tigray and Ethiopia, 2024 (Ethiopia ESNFI, 2025)

Unmet Needs:

Globally, escalating humanitarian crises and displacement have caused shelter needs to surge—doubling since 2019—while response capacity and funding have lagged far behind.⁶² Yet, shelter provision encompasses more than meeting numerical targets; it also requires attention to the quality, appropriateness, and long-term sustainability of housing solutions. The loss of a home signifies more than physical displacement—it entails the loss of security, dignity, privacy, and essential household assets. Consequently, effective shelter interventions must emphasize both quantity and adequacy to support meaningful recovery and resilience.

Moreover, shelter needs evolve throughout the various phases of displacement—from the initial emergency response and temporary accommodation to recovery and the eventual construction of durable, long-term housing. Following humanitarian crises, the demand for emergency shelter typically increases sharply, as seen in the Tigray crisis, where the massive influx of IDPs overwhelmed both needs assessments and response capacities. In addition to the unmet quantitative shelter needs, the quality of available emergency shelters remains a major concern for almost half a decade prolonged displacement.⁶³ Thousands of displaced

⁶¹ The Ethiopia ESNFI Cluster (2024) Annual Report indicates that ESNFI interventions encompass the distribution of non-food items (NFIs) for household use. At the global level, shelter responses are integrated with settlement planning and coordinated under a unified structure, the Global Shelter Cluster (GSC), which oversees both shelter and settlement activities. More recently, this coordination framework has evolved to incorporate shelter, land, and site coordination functions within a consolidated cluster approach.

⁶² Norwegian Refugee Council (NRC) 2024 report https://www.nrc.no/news/2024/december/shelter-needs-doubled-in-five-years/?utm_source

⁶³ It is five years after the onset of the conflict, IDPs continue to reside in inadequate shelter and settlement conditions. However, shelter is more than four walls and a roof; it plays a critical role in protecting individuals from violence, preserving human

families continue to live in overcrowded, unsafe, and deteriorating conditions, with limited access to adequate shelter, essential household items, and protection services.

Protracted and acute conflicts tend to intensify humanitarian crises while contributing to “crisis or donor fatigue”, whereby sustained emergencies receive diminishing levels of international attention and funding. Under such conditions, humanitarian actors are often compelled to adopt triage-based approaches, prioritizing the allocation of limited resources to the most urgent needs. This pattern has been observed in contexts such as the Democratic Republic of the Congo (DRC) and the Central African Republic (CAR), where prolonged instability has resulted in persistent funding shortfalls (Lamarche, 2018). Furthermore, the emergence of new large-scale crises—including those in Ukraine, Gaza, and Sudan—has diverted donor attention and resources toward more immediate emergencies. Consequently, these global and regional dynamics have further exacerbated shelter and settlement challenges in Tigray and across Ethiopia, deepening unmet humanitarian needs, placing additional strain on the already limited shelter stock, and constraining the overall capacity of the humanitarian response.

In Tigray, shelter provision fails to meet the needs of the displaced population, and the necessary ongoing repairs are further hindered by inadequate follow-up, limited donor support, and the high costs of routine emergency shelter maintenance.

‘According to the discussion conducted to assess shelter availability, stock, and conditions in planned camps indicate a substantial unmet need for emergency shelters, accompanied by widespread deterioration of existing emergency shelter structures. The prolonged displacement of IDPs, coupled with funding constraints faced by humanitarian actors, has contributed to the poor maintenance of shelters over time. As a result, residents in these camps endure a reduced quality of life, characterized by undignified living conditions and limited privacy. Although tarpaulin- or plastic-sheet shelters are typically designed for a service life of approximately six months, many have been in use for over four years, far exceeding their intended durability. These shelters are frequently exposed to environmental hazards, including strong winds, extreme heat, flooding, and attacks by wild animals such as hyenas, highlighting the significant protection and safety risks associated with inadequate and poor shelter provision. It is likely that conditions are even more precarious in self-constructed shelters within unplanned or unmanaged camps and self-settlement sites.’⁶⁴

dignity, and providing a secure environment for recovery from displacement-related trauma and the reestablishment of stable lives.

⁶⁴ Author’s field interviews with IDPs at Seba Care 4 Camp in Mekelle in 2024, with a follow-up in 2025 after a reported hyena attack, attributed to poor shelter conditions caused by unrepaired damaged poles and plastic sheeting, due to limited donor support for ongoing maintenance.

Table 3: Shelter needs, targets, reached, and unmet needs in Ethiopia (2021-2024) (Source: ESNFI annual reports)

Year	Need in million	Targeted in million	Reached in %	Gap in %
2021	4.5 m	2.8 m	11%	89%
2022	7.8 m	4.5 m	48%	52%
2023	4.5 m	3.2 m	45%	55%
2024	3.5 m	3.1 m	31%	69%

Based on Ethiopia ES/NFI Cluster reports from 2021 to 2024, shelter demand peaked in 2022, largely due to the escalation of the Tigray conflict in 2021 and its spillover effects, which resulted in substantial displacement and increased caseloads. Performance also reached its highest point in 2022, with nearly half of the identified needs met. Analysis of response coverage and remaining gaps indicates that the discrepancy between identified needs and set targets reflects a realistic assessment of humanitarian partners’ operational capacity and the level of funding received during these years. After 2022, consistency declined as coverage dropped again, underscoring challenges in sustaining progress. Nevertheless, the Shelter and Settlements sector retains the capacity to scale up its response further, should additional resources become available to reach those in need.

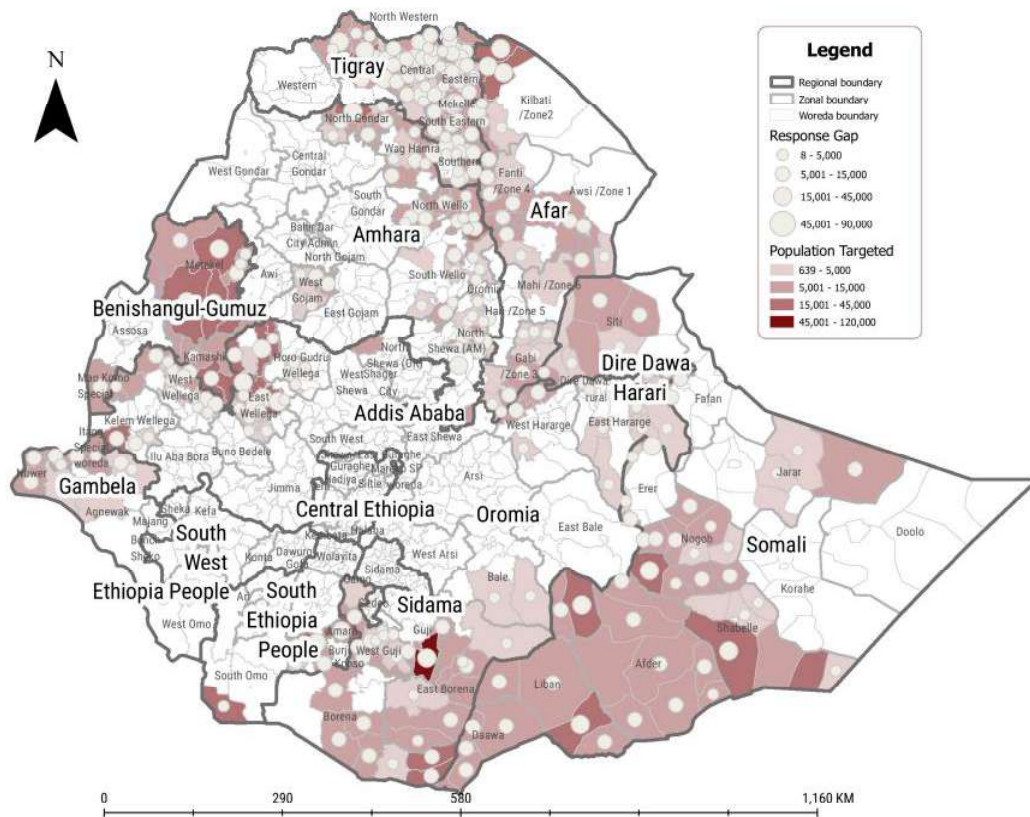


Figure 23: Shelter response gap in 2024 (Ethiopia ESNFI, 2025)

1.3. Humanitarian management system (HMS)

Any one outsider to the field of humanitarian works, it provokes how the humanitarian system works and managed particularly in the shelter and settlement sector can seem complex and overwhelming. The involvement of numerous stakeholders (UN agencies, donors, IFRC, International and local NGOs and CSOs, government and non-traditional actors), across different phases of emergency responses often leads to an idealized perception of how coordination should work, especially during situation of mass forced displacement and urgent shelter needs with government has poor preparation and mitigation responses in developing countries.⁶⁵

In reality, the humanitarian coordination architecture offers only a glimpse into the intricate web of humanitarian responses, with shelter and settlement responses efforts spanning from global to national and then to areas of responsibility (AoR). while the system may appear standardized from outside, the actual implementation is far more complex and politically nuanced than it seems. As each context brings its own set of organizations (example: government or UN agency lead sectoral responses), challenges, and dynamics. And here provided a brief exploration with an illustration of how the humanitarian coordination architecture operates in practices, with a specific focus on shelter and settlement responses for IDPs in Tigray.

Humanitarian coordination during emergency responses have gained attention among scholars and humanitarian partners in the past years. This is particularly as a result of an increased type, nature and number of humanitarian crisis and actors. Scholars, organizations and others have realized that humanitarian responses coordination is not static, uniform but need adaptation to the context of the hosting country environment (ALNAP, 2022; Currión, 2010; Harmer & Macrae, 2003).^{66,67,68} One of the points of aspiration of the humanitarian coordination architecture in Tigray, as both a conceptual and management tool, is to enhance the coordination, logistics, communication, and overall management of responses efforts, particularly in relation to the improvements of spatial shelter and settlement interventions in emergency to reconstruction. The organization and coordination strategies employed by humanitarian partners, alongside the mechanisms through which responses are funded and prioritized, significantly influence the efficiency and capacity of shelter and settlement operations. Effective coordination and resource allocation not only

⁶⁵ Non-traditional actors are entities outside the formal humanitarian system—such as private companies, community or faith-based organizations, academic institutions, volunteer networks, and philanthropic groups—that participate in humanitarian response alongside traditional actors.

⁶⁶ Humanitarian coordination mechanisms have evolved significantly over the last decade, responding to the increasingly multifaceted nature of emergencies and the multiplicity of actors (Currión, 2010).

⁶⁷ As the international humanitarian system has expanded, coordination has become a central challenge, especially in complex emergencies involving multiple stakeholders which stated by the Macrae, J., & Harmer, A. (2003).

⁶⁸ According the ALNAP (2022) the increasing number and diversity of actors involved in humanitarian action, combined with more frequent and protracted crises, has placed coordination mechanisms under strain, drawing renewed focus to their effectiveness.

optimize operational performance but also ensure that affected populations receive timely and adequate support in crisis contexts.

The coordination and leadership of shelter and settlement sector responses depended on the nature of forced displacement - such as IDPs or refugee - and the capacity of the host government. Governments are the primary responsible for protecting and assisting affected communities, but when they lack of capacity, willingness or failed as a state to do so, UN agencies – through UNOCHA – take the leadership under the IASC cluster system established in 2005 (IASC, 2015). As IDPs, who remain within their country of origin, the national government mainly is mandated to support, protect and lead the humanitarian system and supported by humanitarian working groups with UN agencies in co-lead role.⁶⁹ however, as of like Tigray case during the onset of the 2020 war where government failed to support the mass influx of displacement and large need, humanitarian partners with UN leading role coordinate all humanitarian sectors including the shelter and settlement provision efforts with some support and coordination with the sectoral offices (UNHCR, 2021b).⁷⁰

To understand the humanitarian coordination architecture, it is important to examine the vertical linkages at the global, national, and sub-national or field levels, as well as the horizontal interactions across different sectors. This framework illustrates the overall structure, systems, and mechanisms employed to organize, coordinate, and manage humanitarian responses among multiple actors during complex emergencies, as reflected in the cluster approach and inter-agency coordination mechanisms established by the Inter-Agency Standing Committee (IASC) and operationalized through country-level coordination structures and sectoral clusters.

Global-level coordination:

Effectiveness of humanitarian responses is impossible without efficient coordination mechanism. At the global level, the primary actors for coordination include the Emergency Relief Coordinator (ERC)⁷¹, Inter-Agency Standing committee (IASC) and Global Clusters (GC). There are eleven clusters operating at global levels, each addressing specific sectors of humanitarian action. Shelter cluster is one among with its role is coordinating of humanitarian shelter and settlement responses in both natural and mad-made disasters. The global cluster aims to strengthen system-wide preparedness and technical capacity to respond to humanitarian emergencies by design global cluster leads and ensuring that there are predictable leadership

⁶⁹ In situations of internal displacement, governments often attempt to address the problem as a domestic matter. However, in many African and other developing countries, local authorities frequently lack the capacity to ensure adequate protection and the effective provision of essential services to IDPs.

⁷⁰ The Shelter and Settlements humanitarian sector at global level called ES/NFI cluster in Tigray, Ethiopia level operates in close coordination with the National and Regional Disaster Risk Management Commission (DRMC), with designated focal persons from the commission supporting cluster activities.

⁷¹ Emergency Relief Coordinator (ERC) chairs the Inter Agency Standing Committee. The ERC is the head of OCHA, and as such is responsible for the oversight of all emergencies requiring United Nations humanitarian assistance. The ERC acts as the focal point for governmental, intergovernmental, and non-governmental relief activities.

and accountability in all the main sectors or areas of activity. The cluster approach (CA), created the organizational architecture to coordinate and mobilize resources to respond to needs, based on a division of labour defined by ‘clusters’ of activities, including shelter, health, nutrition, logistics, water, sanitation, and hygiene (WASH), protection, and others.

In case of shelter and settlement globally lead and co-lead by United Nations High Commissioner for Refugees (UNHCR) and International Federation of Red Cross and Red Crescent Societies (IFRC) respectively. UNHCR provides coordination leadership in conflict-induced displacement context, and IFRC convenes the cluster in naturally triggered disasters. The cluster approach functions principally at two tiers — global and national levels — and may also operate through sub-national mechanisms or Areas of Responsibility (AoRs) where actual field responses are delivered, supporting coordination between country clusters, partners, and authorities.⁷²

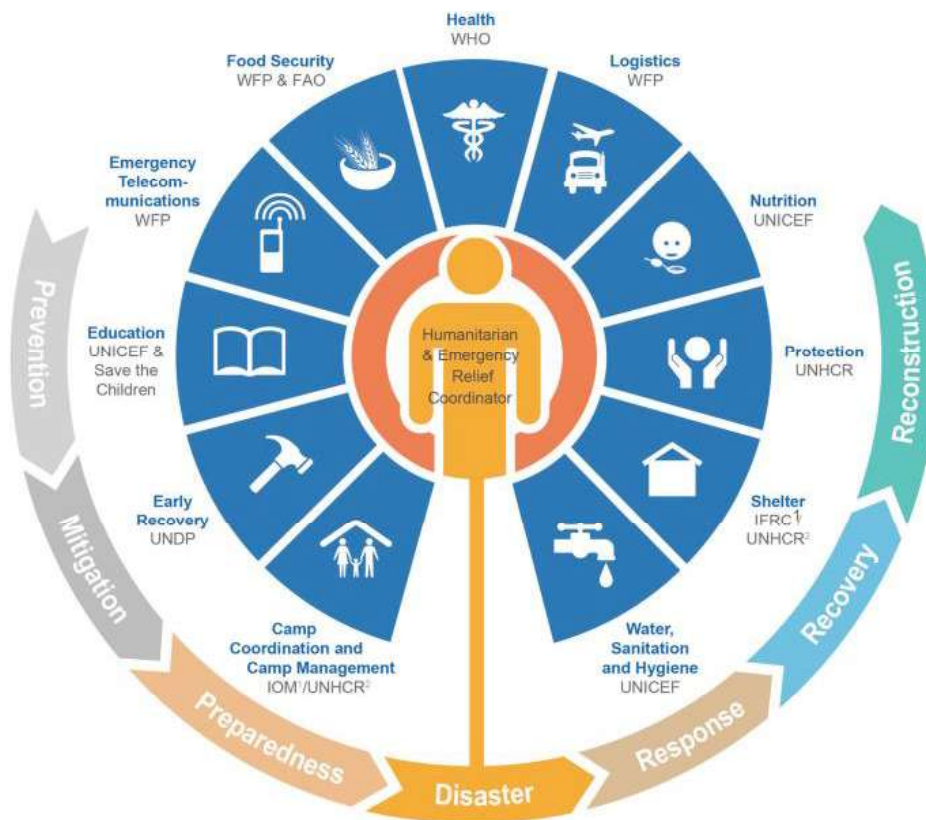


Figure 24: Global cluster lead agencies and phases of disaster management cycle (Source: IASC, 2015)

⁷² In Ethiopia, the national Shelter Cluster leads overall shelter responses, while coordination and technical support at the sub-national level are provided through Area of Responsibility (AoR) clusters.

The figure 26 presents the Global Shelter Cluster's coordination and governance structure, with affected people at its center. National shelter responses are led by the Country Shelter Cluster, supported by working groups and communities of practice. At the global level, a Global Support Team provides technical and coordination support, while strategic oversight and resource engagement are guided by the Strategic Advisory Group (SAG) and the Donor Consultation Group. The outer layer reflects the wider Global Shelter Cluster partnership, led by UNHCR and IFRC with support from humanitarian partners and donors.

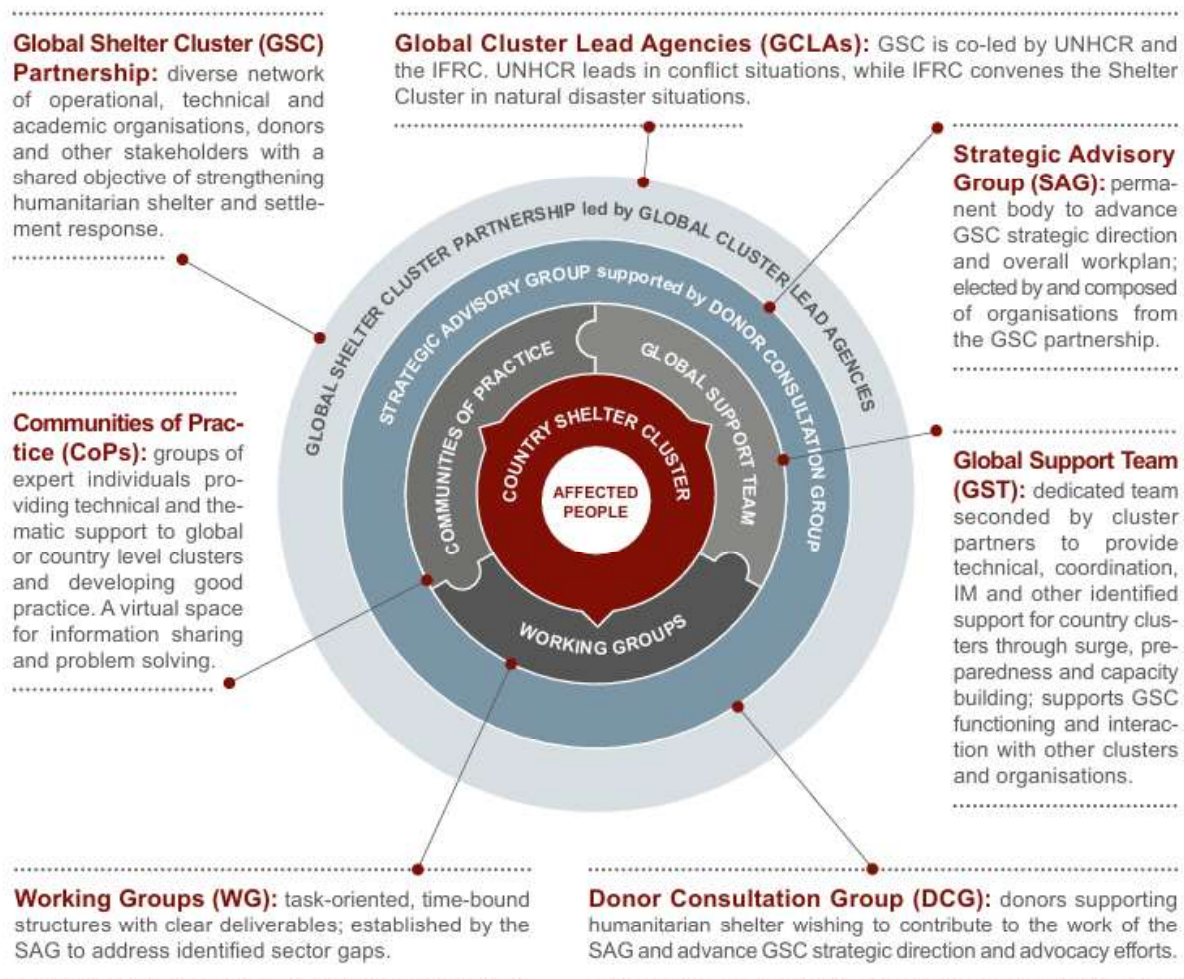


Figure 25: Coordination structure of shelter cluster at Global and country levels (Source: GSC)

National (country)-level coordination:


The clusters activated by Emergency Relief Coordinator (ERC) with the endorsement of IASC principles at national level in support of a humanitarian response during crisis as needed. At the country level, the aim is to ensure a more coherent and effective response by mobilizing groups of agencies, organizations and NGOs to respond in a strategic manner across all key sectors or areas of activity, each sector having a

clearly designated lead, as agreed by the Resident and/or Humanitarian Coordinator (HC) after consultation with the Humanitarian Country Team (HCT) and all relevant actors. While country-level clusters are usually led by the global cluster leads, the recommendation on which clusters need to be activated and which organization is best placed to lead them is made in-country by the humanitarian country team (HCT).

Since 2018, the previous Level 3 (L3) emergency activation⁷³ procedure that used for cluster activation has been replaced by the system-wide scale-up, a mobilization triggered in response to sudden-onset or rapidly deteriorating humanitarian situations at national or sub-national levels where the existing capacity to lead, coordinate, and deliver assistance does not match the scale, complexity, and urgency of the crisis. The decision to implement a system-wide scale-up is guided by five criteria: scale, urgency, complexity, capacity, and risk of failure to effectively deliver aid to affected populations (IASC, 2018).

In the Ethiopia context, the Shelter Cluster is led at national level by IOM Ethiopia and co-lead by Catholic Relief Services (CRS), whereas globally, it is typically led by UNHCR in conflict settings and IFRC in natural settings. This divergence in leadership has at times resulted in overlaps and competing interests at the operational level, both in the field and during coordination meetings.⁷⁴ Consequently, institutional priorities have occasionally influenced the humanitarian space and overall coordination, sometimes undermining the effectiveness of the collective response.⁷⁵

Table 4: Humanitarian System Architecture at Global and National/Country Levels (Source: author’s illustration by author 2024)

Global level		National (Country) level
The Emergency Relief Coordinator		The Humanitarian Coordinator (or Resident Coordinator)
The Inter-Agency Standing Committee (IASC)		The Humanitarian Country Team
The Global Clusters		The Country Clusters
The Global Cluster Coordination Group (GCCG)		The Inter Cluster Coordination Group (ICCG)
OCHA (chairs the GCCG)		OCHA (chairs the ICCG)

Sub-national coordination/Area of responsibility (AoR)-level coordination:

Following the establishment of the national cluster, operational coordination at field locations is managed through sub-national clusters, which function as the lowest formal coordination level. These clusters are

⁷³ In a Level 3 (L3) emergency—the highest level of system-wide humanitarian activation—all clusters are expected to be prepared to deploy; however, activation is not automatic. Within 72 hours of the L3 declaration, the Humanitarian Country Team (where established), supported by IASC Emergency/Operational Directors at headquarters, determines which clusters to activate based on an analysis of existing coordination mechanisms and operational needs.

⁷⁴ UNHCR Ethiopia is primarily involved in the shelter sector through its implementing partners, rather than direct operations, whereas IOM Ethiopia carries out shelter activities directly on the ground using its own staff.

⁷⁵ Based on additional insights from interviews and key informant discussions with sub-national coordination and cluster member partners in the Mekelle and Shire areas of responsibility (AoR) during 2023–2024, highlighting competing interests in cluster leadership and coordination roles, particularly among UN agencies and INGOs.

typically based within areas of responsibilities (AoRs) and report directly to the national cluster coordinator, while maintaining a horizontal relationship with the head of sub-office (HoSo) at the sub-national level.⁷⁶ However, several scholars identified sub-national coordination as a persistent weakness within the humanitarian coordination architecture. It is often inconsistent, under-resourced, and disconnected from strategic coordination processes in most humanitarian responses. Therefore, it needs significant improvement and responsibility clarity, though it is important in the initial stages of an emergency to understand the issues of coordination dynamics and the local context (Clarke & Campbell, 2015) (Konyndyk et al., 2020).

At the sub-national level, the shelter cluster brings together all implementing partners, including UN agencies, international and local NGOs (INGOs and LNGOs), the International Federation of Red Cross and Red Crescent Societies (IFRC), civil society organizations, relevant government bureaus such as the regional DRMC (Disaster Risk Management Commission), donors (occasionally), and other key stakeholders. This inclusive coordination structure ensures a collaborative approach to planning, implementation, and monitoring of shelter responses at the local level. Ad hoc committees, such as Technical Working Groups (TWiGs), are also established from within cluster members to provide specialized technical support. These groups play a crucial role in developing innovative, context-specific, and evidence-based solutions that strengthen the overall effectiveness and relevance of the cluster's response.

Mekelle and Shire sub-national shelter clusters in both AoR are the two responsible offices for humanitarian shelter sector coordination in both respective head of sub-office (HoSo). At national and sub-national level as the responses included also non-food item (NFI) the cluster is named Emergency Shelter and Non-Food Items (ES/NFI). Many members of the shelter sub-national cluster in Tigray accept the activation at grass root level to support and coordinate the humanitarian responses in supporting information provision, efficient use of partners resources by mapping and avoid duplication of resources. however, the cluster system yet needs its own resources as it heavily relays on partner's resource. Example all damage and loss assessment of shelter and need assessments in different areas of Tigray conducted by shared resources from shelter partners, the cluster only provide the tools and formats for standard assessment and the coordination leadership.

“My expectation from the sub-national cluster goes beyond simply coordinating partners and compiling 5W reports.⁷⁷ I believe the cluster should take a more proactive advocacy role —

⁷⁶ At the Tigray level, two clusters were active in the Mekelle and Shire Areas of Responsibility (AoRs), hosted within IOM sub-offices. However, following the 2025 budget cuts, significant portions of humanitarian programming were affected, resulting in the merger of the Shelter Cluster with the CCCM Cluster. By the end of 2025 and into early 2026, the Mekelle AoR cluster had closed.

⁷⁷ 5W is reporting system its key tool used in humanitarian coordination to organize and share information about who is doing what, where, when, and for whom. It helps clusters, partners, and coordination bodies identify gaps, avoid duplication, and plan effective responses.

mobilizing resources and engaging donors to attract additional support for the region, especially for IDPs living in dire conditions. However, I've observed that the cluster often relies heavily on the availability of resources from individual partners, which limits its overall impact. If partners themselves lack resources to respond, the sub-national cluster has little to report or showcase in terms of collective outcomes."⁷⁸

Twenty years after the cluster system was officially introduced in 2005, following the 2004 Indian Ocean tsunami, it is clear that cluster-based coordination alone is not a comprehensive solution to today's complex humanitarian challenges.⁷⁹ The nature of crises and humanitarian response types has evolved — shifting from camp-based solutions to urban settings, from temporary emergencies to protracted displacement, and from single-sector to multisectoral and integrated within an area-based approach (ABA).⁸⁰ Moreover, the growing number of humanitarian actors, shrinking operational space, and increasing political complexities further challenge the effectiveness of the traditional cluster approach. These dynamics call for more adaptive, flexible, and context-driven coordination mechanisms that go beyond the existing cluster structure.⁸¹

The cluster approach coordination system lacks a coherent spatial framework, resulting in sectors functioning as independent, stand-alone silos of response. Consequently, the approach prioritizes programme-based interventions over settlement-level considerations, where intersectoral interactions occur, thereby giving rise to significant practical and operational challenges (IASC, 2012; Knox Clarke P. & Campbell L., 2016)., OCHA 2021.

The UNOCHA attempt to solve this by coordinating the inter-cluster coordination group (ICCG) where the sub-national shelter cluster coordinators met and discuss and update on the sectoral based. This is very small attempt for coordination as it extended the suffering of the coordination gap. For example, the cluster approach, initially implemented as a pilot in 2005 following the Pakistan earthquake, was widely criticized for its limited effectiveness in ensuring coordination and inclusivity. Local NGOs were largely excluded from the implementation process, and even when they were invited to cluster meetings, the proceedings and minutes were often not translated into local languages, further constraining their participation (Stoddard et al., 2007).⁸²

⁷⁸ Interview with a shelter expert from an NGO actively participating in the Shelter Cluster biweekly meetings, Mekelle, 2024.

⁷⁹ The humanitarian cluster system was officially launched in 2005 by the Inter-Agency Standing Committee (IASC). It was created to improve coordination among humanitarian actors and to address the gaps and overlaps that had been identified during major crises, particularly after the 2004 Indian Ocean tsunami.

⁸⁰ The Area-Based Approach (ABA) is a way of delivering humanitarian and development assistance that focuses on the needs and vulnerabilities of people within a specific geographic area, coordinating interventions across sectors to address multiple needs simultaneously.

⁸¹ In February 2026, the Shelter and Settlement Cluster was restructured into the more comprehensive Shelter, Land, and Site Coordination Cluster, with IOM and IFRC assuming global leadership.

⁸² The cluster approach, introduced by the IASC in 2005, has improved coordination, leadership, and preparedness in humanitarian response, helping to fill service gaps and develop common standards. Challenges remain, including weak accountability, limited

These structural limitations highlight the need for more spatially integrated coordination models. In contrast to sector-based approaches, the settlement approach emphasizes coordinated, multisectoral engagement within a clearly defined response area, guided by assessed needs. It is a relatively recent concept within the humanitarian sector, providing a spatial framework that enhances interaction and operational coherence among clusters. Similarly, the Area-Based Approach (ABA) aligns closely with the settlement model (approach), promoting coordinated, multisectoral interventions within specific geographic areas—an increasingly relevant strategy given that the majority of displacement now occurs in urban settings⁸³ (UN-Habitat, 2019) and in the context of UNHCR’s ‘out of camp’ urban policies (UNHCR, 2014b).

The sub-national emergency shelter and NFI cluster in Tigray, particularly within the Mekelle and Shire Areas of Responsibility (AOR), is composed of a network of United Nations agencies, international NGOs, and local organizations, activated in response to the Level 3 complex emergency. The International Organization for Migration (IOM) serves as the lead agency, with Catholic Relief Services (CRS) as co-lead, coordinating shelter activities. Biweekly meetings bring together humanitarian actors, local government representatives, academic institutions, and, when available, OCHA staff and occasional donors. A Shelter Technical Working Group (TWiG) is also convened on an ad hoc basis by cluster members to provide technical guidance on shelter, settlement, and non-food item (NFI) issues. All cluster members coordinate under the sub-national cluster framework, report plans, achievements, and available resources to avoid beneficiary duplication and maximize the efficient use of limited resources.⁸⁴ This collaborative structure integrates international actors with local governance and civil society mechanisms, enhancing coordination, resource alignment, and responsive shelter provision in displacement-affected areas.

support from global clusters, heavy administrative burdens, and poor engagement with local NGOs and host governments. Despite these issues, the approach’s benefits outweigh its drawbacks and it should be continued and strengthened.

⁸³ The application of the Area-Based Approach (ABA) in the context of shelter responses in Tigray discussed in detail in Chapter Two.

⁸⁴ The 5W reporting, often accompanied by weekly updates, provides information on available resources and pipeline status. It is a humanitarian coordination tool used by clusters (e.g., Shelter, Health, WASH) to monitor who is implementing which activities, where, when, and for which populations, helping to identify gaps and avoid duplication.

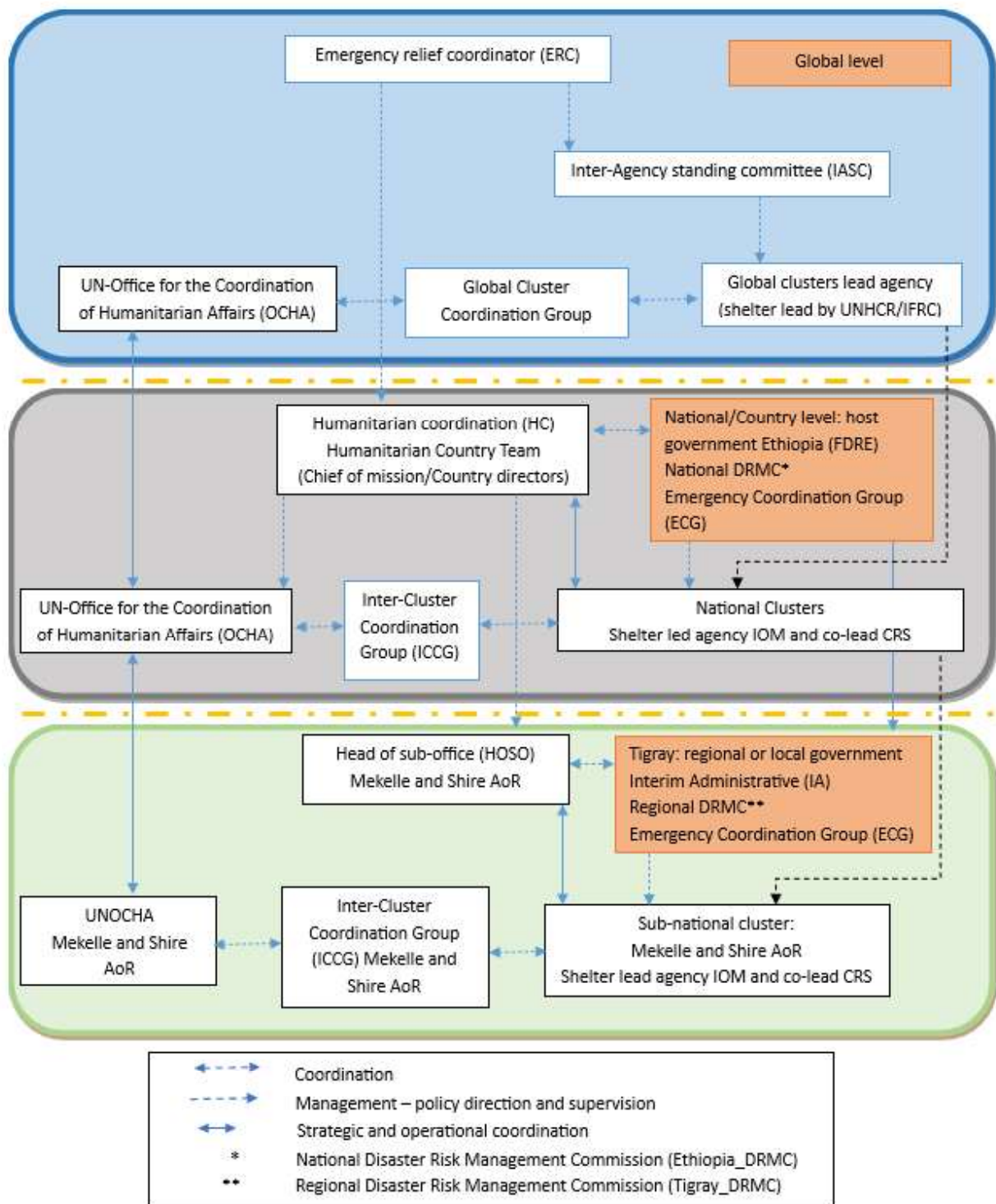


Figure 26: Humanitarian coordination architecture of shelter and settlement: Global, National and Tigray levels (Source: author's illustration, 2024)

Although the current cluster system has improved coordination compared to earlier fragmented humanitarian responses, it still faces challenges, particularly in sector division, complexity, and the separation of cluster leads and co-leads in conflict and disaster contexts. As part of the humanitarian cluster simplification process, the global structures for the Camp Coordination and Camp Management (CCCM) and Shelter Clusters, along with the Housing, Land, and Property (HLP) Area of Responsibility, were merged into the new Shelter, Land, and Site Coordination (SLSC) Cluster in January 2026, co-led globally by IOM and IFRC.⁸⁵ The merger of previously fragmented technical and engineering coordination functions across multiple cluster sectors seeks to overcome longstanding fragmentation within the shelter and settlements sectors, fostering enhanced coherence, operational efficiency, and effectiveness in humanitarian coordination and response.

At the country level, existing coordination arrangements remain unchanged, with leadership and co-leadership determined by the Humanitarian Coordinator in consultation with the Humanitarian Country Team. As a result, UNHCR no longer leads the previously separate sectors of shelter, CCCM, and HLP. The cluster sectors reduce to eight and country-level implementation of the new cluster structure is expected to begin in April 2026.

Cluster Activity	Lead Agency
Shelter, Land and Site Coordination	IOM/IFRC
Education	UNICEF
Food Security	WFP/FAO
Health	WHO
Logistics and Telecommunications	WFP
Nutrition	UNICEF
Protection	UNHCR
Water, Sanitation and Hygiene (WASH)	UNICEF

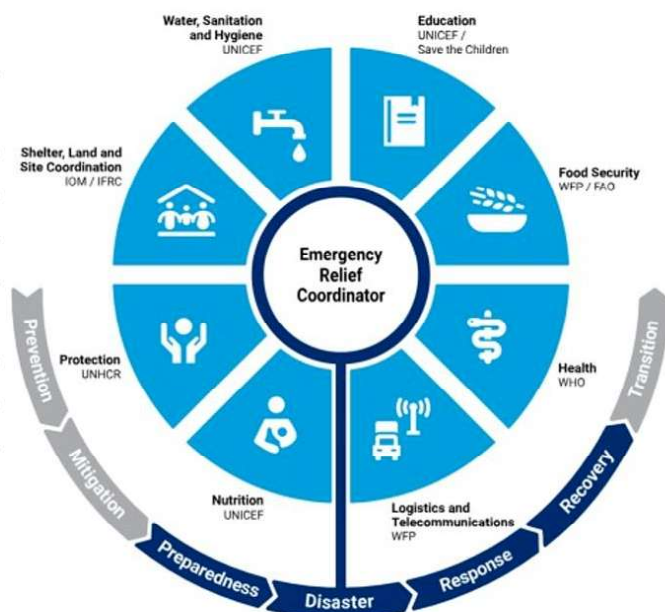


Figure 27: New and merged global cluster and cluster lead agencies (Source: IASC March, 2026)

⁸⁵ Following the formal launch of the merged cluster and leadership arrangement on 1 January 2026, a Transition Strategic Advisory Group (SAG) was established to guide operationalization during the first half of 2026. As the most extensive cluster restructuring under the humanitarian reset, the transition includes finalizing the scope and Terms of Reference of the Shelter, Land and Site Coordination Cluster; constituting a new SAG; defining the global team structure and organigram; integrating digital and communication assets (including websites, branding, and logos); and revising cluster guidance documents to reflect the expanded mandate at global and country levels.

Cluster Partners



Donors



Figure 28: Shelter cluster partners and donors in Tigray, Ethiopia (Source: ESNFI cluster strategy 2025-2027)

Humanitarian politics shaped humanitarian space:

Humanitarianism is often perceived and ought to be a neutral and impartial, and purely dedicated to aiding the vulnerable community. However, many studies shown that, in practice, humanitarian action shaped by a complex web of political dynamics and the interests of various actors (Collinson & Elhawary, 2012).⁸⁶ Similarly, De Lauri (2016) argues that humanitarianism is not only about alleviating suffering but also serves as a vehicle through which political and moral claims are made (De Lauri, 2016) Humanitarian politics, therefore, refers to the interplay of political dynamics, power relations, and interests that shape and influence humanitarian action, including government control over aid delivery, donor priorities, and the broader geopolitical environment in which humanitarian organizations operate (Barnett, 2011; Donini, 2012; Hilhorst, 2018).⁸⁷ Humanitarian politics is also a sensational term in any disaster and emergency situation, especially during an onset, acute, and prolonged conflict and war. In such contexts, humanitarian politics exist and practices by warring parties, humanitarian agencies, and other actors engaged in response efforts, reflecting the intersection between humanitarian assistance and the protection of human rights.

Humanitarian politics play a crucial role in shaping the nature and functioning of humanitarian space, influencing how various actors operate within the humanitarian arena. Humanitarian space, defined by Spearin (2001, p. 22) as “an environment where humanitarians can work without hindrance and follow the principles of neutrality, impartiality, and humanity,” is not a fixed or safeguarded domain (Spearin, 2001). Rather, it is a fluid and contested environment in which humanitarian organizations must continually navigate complex power dynamics, negotiate access, and manage relations with often resistant or politicized authorities. This is also reinforced by Hilhorst & Jansen, 2010 as defined as a humanitarian space is seen as a dynamic, contested space, where the “everyday politics” of aid determine what humanitarian actors can and cannot do (Hilhorst & Jansen, 2010).

Like any type of space, humanitarian space⁸⁸ has physical and metaphorical dimensions. It refers to physical environments: refugee camps, humanitarian corridors during ceasefires or safe havens where peacekeepers and humanitarians provide physical protection and basic services. It also refers to the room for maneuver of humanitarians to work without fear of attack in dangerous situations and alongside other actors. The

⁸⁶ According to Sarah Collinson and Samir (2012), humanitarian politics refers to the political forces that shape and constrain humanitarian action. In their report for the Overseas Development Institute, they argue that humanitarian space is not neutral but constantly negotiated within broader power structures. State sovereignty, security agendas, donor priorities, and conflict dynamics all influence how aid is delivered. As a result, humanitarian principles such as neutrality and independence are often challenged by political interests that determine access, funding, and operational decisions (Collinson & Elhawary, 2012).

⁸⁷ Across these works, Michael Barnett, Antonio Donini, and Dorothea Hilhorst show that humanitarianism is deeply shaped by politics rather than being purely neutral or moral. They highlight how humanitarian action is influenced by state interests, donor agendas, military involvement, and governance frameworks, creating tensions between principles like neutrality and independence and the political realities of power, security, and development.

⁸⁸ A Camp or Site Management Agency requires, above all else, the humanitarian space in which to operate. Humanitarian space includes access to displaced populations and assurance of security and operational space for agency staff. But out the camp level it is beyond the humanitarian space in the camp that is the interaction space between different actors.

Tigray crisis shaped by complex humanitarian politics, categorized as level 3, and highly constrained operational spaces. The region experienced blockades, sieges, and embargoes imposed during the conflict, followed by separate humanitarian truce⁸⁹ and, eventually, a cessation of hostilities agreement. Over the course of the two-year war, the humanitarian situation became increasingly dire, with humanitarian access severely restricted and the operational space for aid actors both limited and contested.

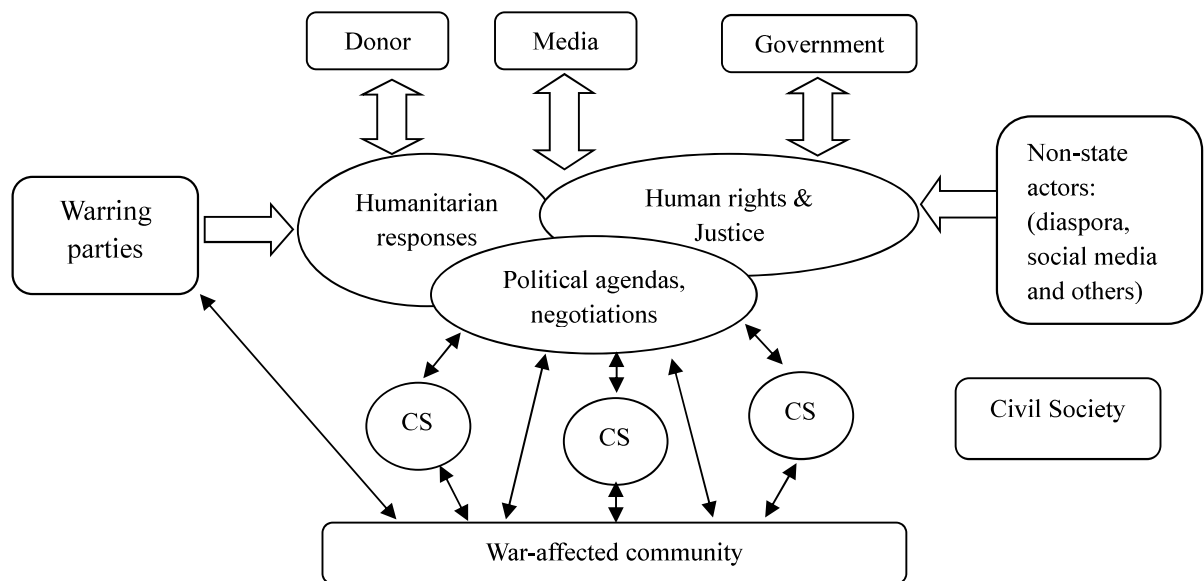


Figure 29: Humanitarian actors adapting their agendas to the political realities of war (adapted from Antonio Donini (2012))

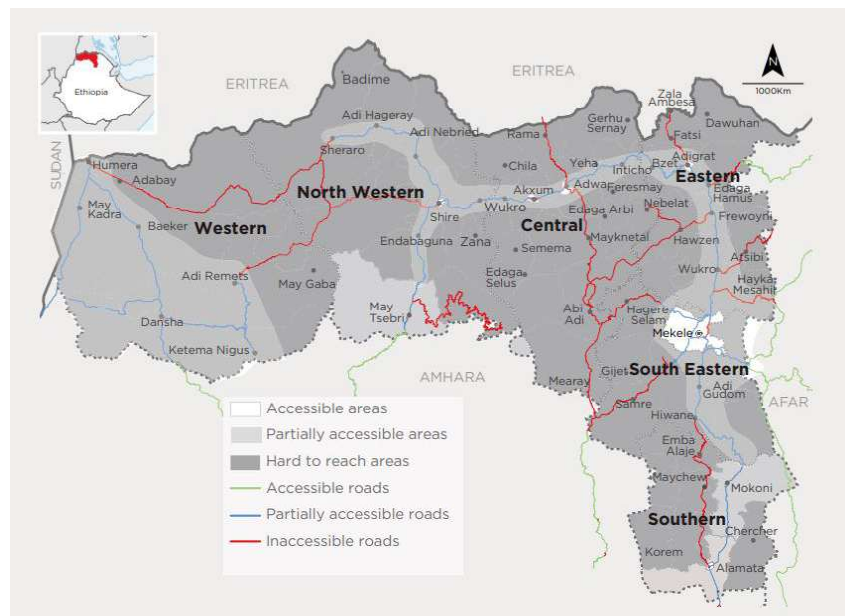


Figure 30: Humanitarian space and access in Tigray (Source: OCHA 2021)⁹⁰

⁸⁹ Mar 24, 2022: Ethiopian government declares a "humanitarian truce" to allow aid into Tigray.

⁹⁰ https://humanitarianoutcomes.org/sites/default/files/score/score_tigray_report_2021_v2.pdf

The humanitarian politics and its space evident among partners engaged in shelter and settlement responses reveal complex power dynamics across multiple levels of coordination. These dynamics extend from the global leadership structures of the cluster system to national and sub-national coordination mechanisms, and ultimately to implementation at the field level.

At the global level, the Global Shelter Cluster (GSC)⁹¹ is co-chaired by the United Nations High Commissioner for Refugees (UNHCR) and the International Federation of Red Cross and Red Crescent Societies (IFRC), with participation from forty-four partner organizations. The IFRC convenes the cluster in situations of natural disaster, while UNHCR assumes leadership in conflict-induced displacement contexts involving internally displaced persons (IDPs).⁹² In refugee situations, however, UNHCR's core protection mandate takes precedence over the cluster coordination mechanism. The IFRC, as a neutral and impartial organization, does not assume a command role within the United Nations system, but rather acts as a convener in contexts consistent with its principles of independence and neutrality.

In Ethiopia, where the number of IDPs significantly exceeds that of refugees, the leadership structure of the shelter and settlement cluster diverges from the global model. The IOM serves as the national lead agency for the Shelter and Settlement Sector, with Catholic Relief Services (CRS) as co-lead. Given that most displacement in the country is internally driven, UNHCR plays a supportive rather than leading role—working primarily through its implementing partners rather than directly engaging in field-level project execution. Instead, UNHCR provides funding to local NGOs and maintains oversight through monitoring and reporting mechanisms.⁹³

These defined roles, however, do not preclude competition and coordination challenges, as tensions between IOM and UNHCR have been evident at both national and sub-national levels, often revolving around leadership visibility, donor engagement, and influence over strategic decision-making. This rivalry is further compounded by efforts from both agencies to strengthen relationships with local authorities and assert control over areas of intervention, resource mapping, and response visibility. Such dynamics have, at times, constrained coordination within the shelter cluster, undermining collective effectiveness.⁹⁴ Meanwhile, the IFRC has not played a significant operational role in the shelter and settlement response in Tigray, with limited engagement or reporting within cluster coordination activities.⁹⁵

⁹¹ Global Shelter Cluster (GSC) is an Inter-Agency Standing Committee (IASC) coordination mechanism that supports people affected by natural disasters and internally displaced people affected by conflict with the means to live in safe, dignified and appropriate shelter. The GSC enables better coordination among all shelter actors, including local and national governments, so that people who need shelter assistance get help faster and receive the right kind of support.

⁹² <https://sheltercluster.org/>

⁹³ In the Tigray crisis, UNHCR carried out most operations through local non-governmental organizations (NGOs) acting as implementing partners, reflecting early steps toward localization of humanitarian aid.

⁹⁴ Interview with shelter cluster coordinators and members, 2024 - Mekelle.

⁹⁵ The IFRC has had limited involvement in the Tigray shelter cluster, rarely attending biweekly meetings or reporting to sub-national cluster coordination.

At the camp level, similar patterns can be observed within the Camp Coordination and Camp Management (CCCM) sector, which is jointly led globally by IOM and UNHCR, in partnership with the government focal agency, the Ethiopia Disaster Risk Management Commission (EDRMC). In the Tigray context, both organizations—through their respective implementing partners—have assumed active roles in CCCM operations, reflecting broader institutional competition within humanitarian coordination structures.

The IOM, UNHCR and SP tarpaulin story:

Over the past three years, shelters in the camp supported by IOM, UNHCR, and Samaritan's Purse (SP) have deteriorated significantly. Each organization has largely maintained only the shelters it originally provided. SP completed its shelter construction and handed over the camp without conducting the expected periodic maintenance after six months and annually. UNHCR remained for several years but phased out maintenance through its implementing partners by the fourth rainy season. IOM continues limited repairs, though constrained by a minimal budget, and focuses primarily on shelters it originally supported. Consequently, internally displaced persons (IDPs) living in shelters provided by UNHCR and SP—without having chosen their allocation—face inadequate upkeep, expired tarpaulins, and precarious living conditions. In response, IOM, in consultation with the shelter cluster, has attempted to extend the usability of these shelters by layering additional tarpaulins over the deteriorated SP and UNHCR structures.⁹⁶

Within camps, humanitarian space is strongly influenced by humanitarian politics, which plays a significant role in shaping how, where, and why aid is delivered. The relationships and interests of the government and humanitarian partners further affect these dynamics. While aid agencies often present themselves as neutral and impartial actors focused solely on saving lives, in reality, they operate within a highly political ecosystem characterized by competition, strategic alignments, and power struggles.⁹⁷

During the Tigray crisis, humanitarian space was deeply affected by political dynamics and conflict, shrinking significantly at the height of hostilities when access to affected populations was restricted by fighting, bureaucratic hurdles, and blockades that severely limited aid delivery. As parties negotiated truces and the 2022 cessation of hostilities agreement was signed, restrictions eased in some areas, allowing for increased deliveries of assistance, although many zones remained difficult to reach and fragile political tensions persisted, illustrating how humanitarian space both contracted and expanded in response to shifts in the war and diplomatic environment.

⁹⁶ Interview and discussion with IDPs from the planned camp and humanitarian shelter experts, Mekelle SC4 Camp, 2024. Shelter maintenance by IOM ceased after USAID funding was cut in early 2025, and site management responsibilities transitioned from IOM CCCM to a local NGO.

⁹⁷ Humanitarian space is not limited to camps but encompasses any context where aid can be delivered safely and independently, with camps being just one example.



IOM and UNHCR tarpaulins side by side on duplex shelters in Mai Dimu IDP camp, Shire, 2025



SP and IOM tarpaulins side by side on a single shelter in Seba Care 4 IDP camp, Mekelle, 2023

Figure 31: Humanitarian agency tarpaulins used side by side for shelter maintenance in Mekelle and Shire camp in Tigray illustrating the interplay of humanitarian politics among partners at the field and management levels. (Source: author, 2023 and 2025)

1.4. Combined and Integrated actions

In the aftermath of humanitarian crises, survivors are widely recognized as the first responders to their immediate shelter and settlement needs, with national governments typically providing subsequent support (Sphere Association, 2018). However, in many developing countries, including Ethiopia (including Tigray), the capacity to effectively manage large-scale emergencies remains limited due to inadequate institutional preparedness, insufficient technical and logistical capacity, weak coordination mechanisms, and constrained financial and material resources (S. Bekele et al., 2025; Mosel & Levine, 2014). As a result, humanitarian response frequency depends on international humanitarian organizations. In the outbreak of the Tigray war, UN agencies, most notably the Office for the Coordination of Humanitarian Affairs (OCHA) have played a leading role in coordinating and delivering humanitarian assistance with support of implementing partners of different sectors including shelter and settlement (OCHA, 2021c).

1.4.1. Physical transformation: ‘from non-place to place ‘

Shelter plays a critical role in the aftermath of war and conflict, serving not only as a means of safety and protection but also as a foundation for restoring dignity and supporting the long-term recovery of vulnerable communities. Beyond its immediate function as a physical refuge, shelter has far-reaching impacts on various aspects of recovery, including livelihoods, health, economic revitalization, education, and the overall reduction of vulnerability. Forcibly displaced populations instinctively seek emergency shelter and relocate to safer areas to meet their immediate survival needs. However, shelter should be understood as a dynamic process rather than merely a physical structure. It encompasses social, economic, cultural, and technical considerations that support long-term well-being and community recovery. Recognizing shelter in this broader sense enables humanitarian responses to adapt to evolving needs and foster sustainable, community-driven solutions.⁹⁸ Beyond being a roof and four walls, shelter embodies safety, privacy, dignity, and a sense of home and belonging, forming the foundation for resilient communities (Davis Ian, 1978; Sphere Association, 2018).

Building on this broader conceptualization of shelter, recent scholarship has sought to further refine and contextualize its meaning within contemporary humanitarian practices. For instance, Georgia et al. (2023), in their article “*Redefining Shelter: Humanitarian Sheltering*,” conducted an extensive review of shelter-related literature and construct a new definition of shelter within the humanitarian context, developed 45 years after Davis’s seminal work *Shelter After Disaster* (1978). According to Georgia et al. (2023), sheltering is an enabled process to facilitate a living environment with crisis-affected communities and

⁹⁸ Ian Davis’s key contribution was the redefinition of shelter as a human-centered, participatory, and evolving process that underpins dignity, resilience, and community recovery, rather than merely a physical structure.

individuals to meet their current and future needs, whilst also having due consideration for the needs of the host communities and environment (George et al., 2023).

The definition does not emerge in isolation; rather, it synthesizes and integrates decades of scholarship on shelter. The formulated by Georgia et al. (2023) incorporates five key dimensions identified by earlier authors, reflecting the evolving conceptual, social, and practical significance of shelter within humanitarian contexts. These dimensions include:

- Viewing shelter as a process rather than an object (Davis Ian, 1978).
- Recognizing that shelter addresses the needs of both individuals and communities (Corsellis & Vitale, 2005).
- Acknowledging the long-term and developmental nature of sheltering and its related needs (Davis et al., 2015).
- Understand that shelter often lies at the center of broader humanitarian systems and needs (George et al., 2023).
- Emphasizing that shelter interventions affect not only displaced populations but also host communities and the wider environment (Shelter Centre, 2010).

Taken together, these dimensions provide a comprehensive and contemporary framework for understanding shelter as an integrated and systemic humanitarian responses. Accordingly, this study, adopts the definition proposed by Georgia et al. (2023), as it unifies and builds upon earlier conceptualizations across multiple strands of literatures (George et al., 2023).

This conceptual foundation is reflected in current humanitarian coordination mechanisms. The Emergency Shelter and Non-Food Items (ES/NFI) Cluster implements integrated shelter and settlement as well as nonfood items (NFI) responses for disaster-affected populations, providing assistance not only to IDPs but also to returnees and host communities impacted by disasters. Such an integrated approach operationalizes the multidimensional understanding of shelter outlined above, ensuring that humanitarian interventions address the diverse and interconnected needs of affected groups in a coordinated and systematic manner.

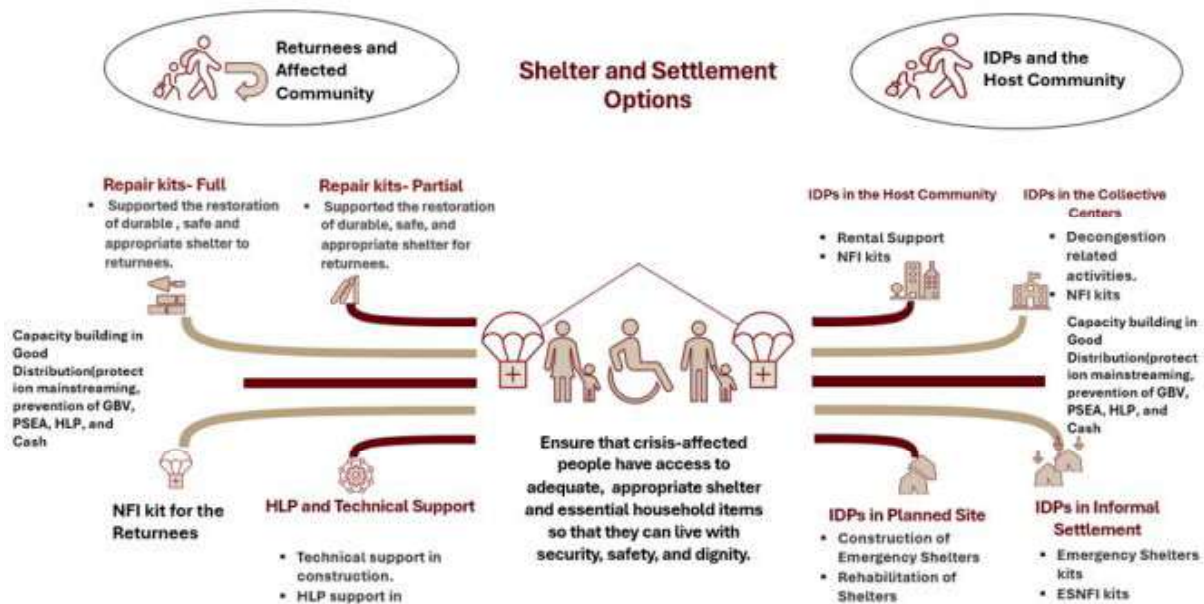


Figure 32: Shelter and settlement options by ESNFI cluster, Ethiopia (Source: Ethiopia ES/NFI cluster 2022)

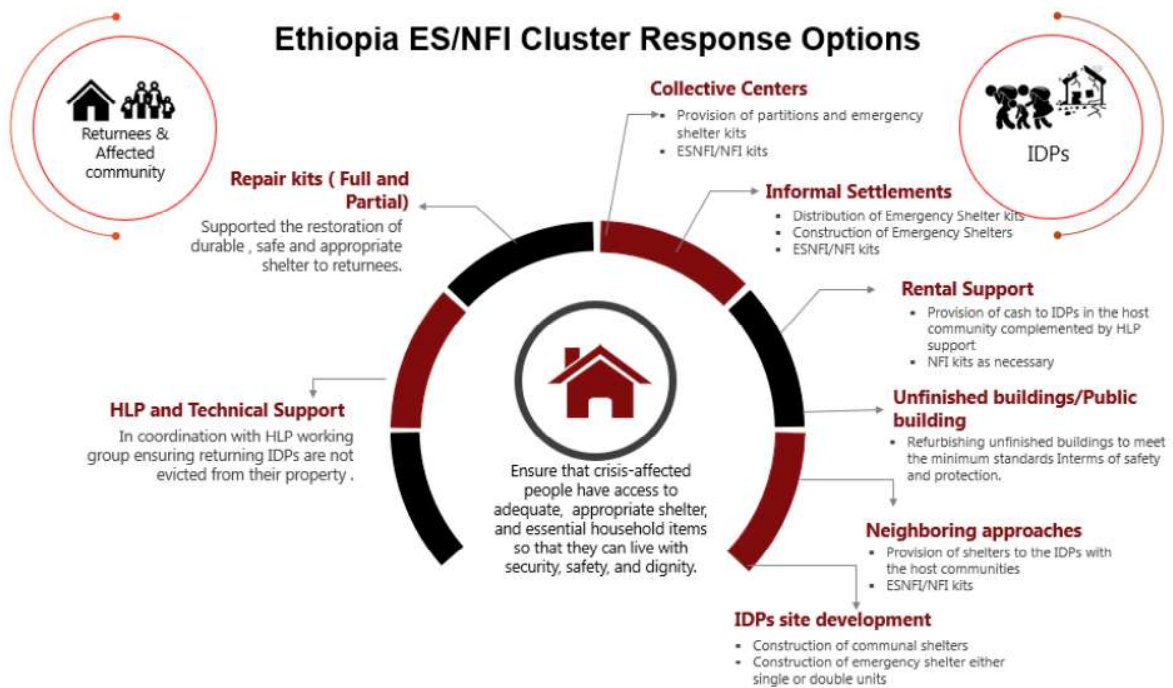


Figure 33: ES/NFI Response Strategy (Source: ES/NFI cluster, august 2023)

Emergency shelter typology:

In the aftermath of natural or man-made disasters, such as war and conflict, it is both common and instinctive for forcibly displaced people to seek emergency shelter and relocate to safer areas. Shelter refers to a place to stay in the immediate aftermath of disaster, adjourning daily activities. The concept of shelter could be adopted based on four different post-disaster reconstruction phases: emergency shelter, temporary shelter, temporary housing, and permanent housing (Félix et al., 2013; Johnson, 2007b; Quarantelli, 1982, Quarantelli, 1995).

Building on this phased understanding, humanitarian organizations have developed more detailed classifications to guide policy and operational responses called here ‘combined and integrated actions. According to the UNHCR (2016) shelters categorized based on lifespan, functional purpose, and building materials into four main types: global, emergency, transitional and durable shelter (UNHCR, 2016). Similarly, the International Federation of Red Cross and Red Crescent Societies (IFRC, 2013) classifies shelter according to the length of stay, permanency of the location, expected lifespan and materials used, identified five categories of shelter: emergency shelters, temporary shelters, temporary housing, transitional shelters, and core shelters. Other classifications include ‘emergency shelter’, ‘temporary shelters’, ‘transitional shelters’, ‘progressive shelters’ and ‘core shelters’ (IFRC, 2013).

While these classifications primarily focus on the duration, function, and material characteristics of shelter, additionally, shelter typology can also be defined according to the approach to provision, construction, and delivery mechanisms. In this regard, two main approaches can be identified: (i) pre-fabricated shelters, which are manufactured off-site and transported to the affected locations; and (ii) locally constructed shelters, which are built on-site by displaced populations or local workers using readily available materials, often under the technical supervision and support of humanitarian organizations (Davis et al., 2015). The following classification therefore elaborates shelter types primarily according to their duration of use, level of permanency, and role within the post-disaster recovery continuum, while recognizing that each type may vary in its method of provision and implementation.

- I. Emergency Shelter (ES): this type of shelter is used for brief periods of time to deliver life-saving support and is the most basic kind of shelter support aside from staying in another permanent building to be used for a temporary period) for a single night to a few days during an emergency (Félix et al., 2013; C. Johnson, 2007b; C. Johnson et al., 2006; Quarantelli, 1991, 1995). This kind of shelter commonly does not allow for the extensive domestic activities such as preparation of food or prolonged medical care. Common examples include such as tarpaulins and family tents, which, although effective for rapid response, tend to be expensive comparing to their short life span and often not climate responsive. Typically, these shelters remain in use for up to six months (IFRC, 2013, 2015).

- II. Temporary Shelter (TS): this type of shelter is meant for short-term use. A simple tent or public mass shelters used for a few weeks following a disaster constitute a temporary shelter (Félix et al., 2013; C. Johnson, 2007b; C. Johnson et al., 2006; Quarantelli, 1991). According to the IFRC (2013), the duration of stay in such shelters may be limited, and therefore, speed of deployment, cost efficiency, and logistical feasibility should be taken into account when design and constructing this kind of shelter. It is a temporary service provided while more permanent housing solutions are being arranged (IFRC, 2013).
- III. Temporary Housing (TH): this type of shelter is often distributed for long-term periods such as six months to three years. TH such as rental houses (cash-for-rent) and prefabricated unit allow people affected by a disaster to return to their normal daily activities while more permanent housing solutions are being arranged (Félix et al., 2013; C. Johnson, 2007b; C. Johnson et al., 2006; Quarantelli, 1991). In many cases, temporary houses are installed on temporary land. For instance, in the Tigray region, approximately 80% of internally displaced persons (IDPs) residing with host families or friends can be categorized as living in temporary housing arrangements.⁹⁹ Furthermore, neighborhood, settlement, or area-based shelter interventions that support IDPs accommodated within host community dwellings may also be considered forms of temporary housing.¹⁰⁰
- IV. Transitional Shelters: this type of shelter is usually developed by displaced individuals or communities themselves in the aftermath of a disaster. Such self-initiated efforts demonstrate a high degree of resourcefulness and self-reliance, which humanitarian actors are encouraged to support and facilitate (IFRC, 2013). Transitional shelters are commonly relocated from a temporary site to a permanent location, upgraded into part of a permanent house, resold to generate income to aid with recovery, recycled for reconstruction, and reused for other purposes.
- According IOM (2012) Transitional shelter is an incremental process which supports the shelter of families affected by conflicts and disasters, as they seek to maintain alternative options for their recovery (IOM, 2012). Such transitional shelters are expected to serve for many months or years. It is a bridge between the emergency relief and permanent accommodation and stays from 6 months up to three years, sustainable and resilient construction (IFRC, 2013).
- In the context of Tigray, where war-induced displacement has been widespread and protracted for more than five years, there is considerable interest in transitional shelters (TS), particularly among IDPs residing in planned camps. These shelters often involve the use or reuse of permanent or semi-

⁹⁹ The data referenced here are drawn from International Organization for Migration (IOM) – Displacement Tracking Matrix (DTM). (2021). *Ethiopia — Tigray region displacement report*. Addis Ababa: IOM. <https://dtm.iom.int/ethiopia>

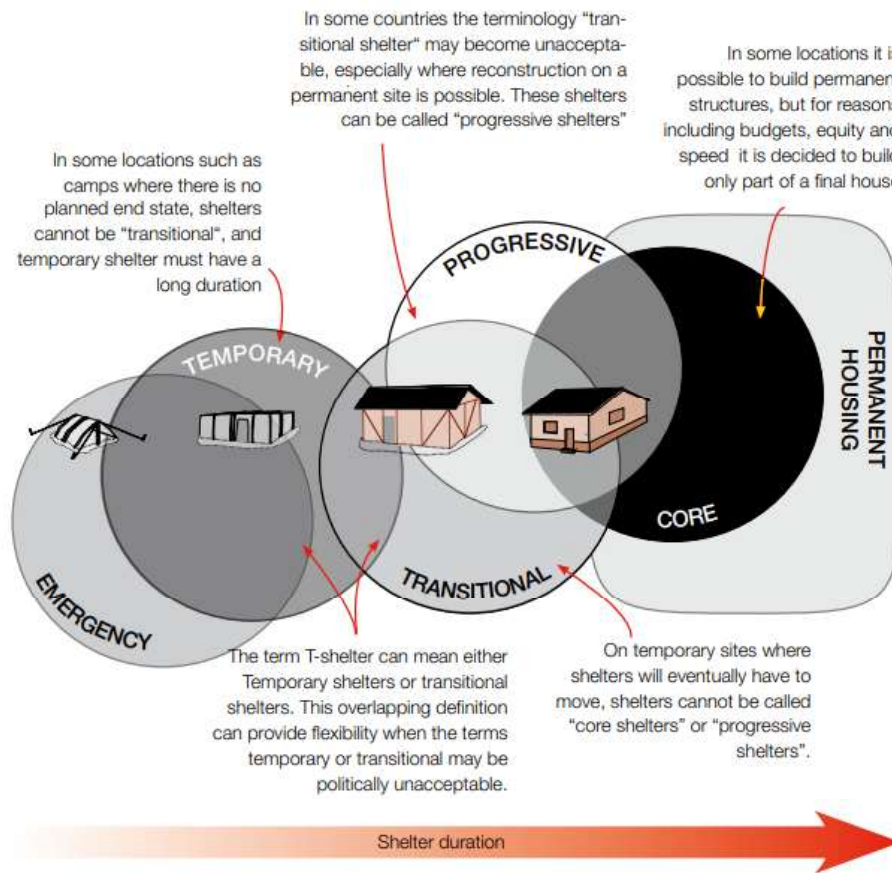
¹⁰⁰ An area-based (neighborhood- or settlement-level) approach is especially suited to contexts where large proportions of IDPs reside within host communities. Such an approach addresses both household-level shelter needs and wider settlement dynamics. This framework is introduced here briefly and is elaborated further in Chapter Two through case studies in Mekelle and Adigrat.

permanent materials, such as stone and corrugated galvanized iron (CGI) sheets for wall construction.¹⁰¹ Although many displaced persons have expressed a strong intention to return to their areas of origin, persistent security challenges have constrained large-scale return efforts. Consequently, the self-construction of transitional shelters by IDPs remains limited and is unlikely to expand under the prevailing conditions.

- V. **Progressive Shelters:** this type of shelter is designed and built to be more permanent and upgradeable in the future through alterable structural components. Progressive shelters are constructed with adaptable structural components that allow for gradual upgrading-enabling households to transition from temporary accommodation toward more durable, permanent housing as resources become available (IFRC, 2013). This approach supports sustainability and self-recovery by empowering affected communities to enhance their living conditions progressively, rather than relying solely on external reconstruction efforts.
- VI. **Core Shelter/One Room Shelters:** this type of shelter is designed and constructed with the intent of being permanent housing in the future, including a foundation and all or some of the key services, such as plumbing and various basic utilities. The main objective of this shelter type is to provide one or two structurally sound rooms that meet minimum standards for permanent housing while allowing for future expansion or improvement as resources permit. However, core shelters are not intended to serve as complete permanent houses at the time of construction (IFRC, 2013). World Vision Ethiopia (WVE) implemented a core shelter program aimed at supporting internally displaced and conflict-affected households in South part of Tigray. Through this initiative, several households benefited from the construction of durable, upgradeable shelter units that contributed to improved safety, stability, and recovery within affected communities.¹⁰²
- VII. **Permanent Housing:** this is considered structurally complete and an upgraded from a transitional shelter, a progressive shelter, a core shelter, or even a new house. These housing units are intended to provide durable, long-term accommodation that meets established standards for safety, comfort, and sustainability (Félix et al., 2013; C. Johnson, 2007a; C. Johnson et al., 2006; Quarantelli, 1995). A key characteristic of permanent housing is its resilience—structures are designed to be resistant to future hazards and capable of withstanding environmental and social stresses, thereby contributing to the long-term recovery and stability of affected communities.

¹⁰¹ The Seba Care 4 IDP camp in Mekelle serves as a representative case and is examined in detail in Chapter Two.

¹⁰² The observations presented here are drawn from World Vision Ethiopia (WVE) and Shelter Cluster reports, complemented by insights gathered through informal interviews with shelter experts from partner agencies.



Caption: Illustration of overlaps between some of the different shelter terminologies in use. Remember that individual designs might fall into many of the categories, it is the context that is important in agreeing the terminology.

Figure 34: Overlapping definitions and process of post-disaster shelter (IFRC, 2013)

In the aftermath of the Tigray conflict, the humanitarian landscape was marked by large-scale and repeated displacement, widespread destruction of housing, and prolonged instability. Consequently, shelter needs and responses emerged at multiple stages — from the onset of the crisis and initial displacement through to rehabilitation and recovery phases — addressing the needs of IDPs, returnees, and non-displaced affected communities alike.¹⁰³

Based on factors such as duration of stay, permanence of settlement, expected lifespan, construction materials, construction methods, delivery modality, and context (formal versus informal, planned versus unplanned camps, in situ versus prefabricated structures), sixteen shelter typologies were identified.¹⁰⁴ These typologies can be broadly categorized into emergency, temporary, progressive, and core shelter

¹⁰³ This chapter presents an analysis of all identified shelter typologies, which are further examined in greater detail within the subsequent chapters focusing on planned camps and post-war recovery.

¹⁰⁴ Ethiopia ESNFI cluster references were utilized to substantiate field-level findings and to support the thematic categorization of the data.

designs and constructions.¹⁰⁵ However, during the field study, not all of these established shelter types were observed. Instead, two additional categories were noted: “no shelter,” referring to IDPs living in open spaces, and “temporary accommodation,” where most displaced individuals were hosted by friends, families and relatives.

Shelter provision was severely constrained in the post-war context due to a combination of humanitarian, logistical, and political factors. Limitations in humanitarian space, budget cut, and logistical challenges, alongside political transitions within the Interim Regional Administration (IRA), compounded the difficulties. These challenges were further intensified by a substantial influx of IDPs, particularly from areas of western Tigray that were contested in humanitarian discourse. The resulting surge in shelter demand far exceeded the capacity of available response mechanisms. Humanitarian efforts were further impeded by embargoes, blockades, and siege conditions, which significantly restricted access and operational scope. Consequently, the shelter response relied heavily on locally available materials for temporary construction, employing standardized models such as family tents, single-unit, duplex, and communal shelters. These interventions largely followed a uniform, one-size-fits-all design, with limited participation from end-users. Additionally, humanitarian programs/projects targeted returnees—former IDPs—through initiatives such as shelter repair kits and core shelter projects.



Figure 35: Classification of Shelter Types in Tigray (Source: author’s compilation based on field visit and ESNFI cluster, 2022)

¹⁰⁵ In addition to the seven shelter typologies identified in the literature, two additional types were observed: “no shelter,” referring to displaced individuals living in open spaces, and “IDPs hosted within communities,” where displaced persons reside in various forms of housing provided by host families.

Type 1: open space living condition/ open space or No shelter

Open space living condition is a shelter type commonly called also in short as an open space or no shelter. In the early stages of displacement, IDPs often find themselves in open areas such as forests, beneath large trees, caves, streets, or vacant lots. They seek refuge wherever they perceive safety from ongoing conflicts or risks. During these initial crisis periods, IDPs frequently move from one location to another until they find a relatively secure place to settle. Their living conditions in these open spaces are typically temporary and improvised, lacking basic amenities, protection from environmental elements, and often experiencing inadequate humanitarian response. Open space living conditions are observed in Tigray when IDPs reach a new place from origin place or during their movement to change a location. Mainly, it will continue for a few days until they get any type of shelter, or when the collective centres are full. IDPs will stay outside until someone responds, usually with emergency shelter kits or other ways.¹⁰⁶



Figure 36: Newly arrived IDPs in no shelter conditions, North-western Tigray (Source: ESNFI Ethiopia 2022)

Type 2: make-shift shelter

IDPs often construct makeshift shelters (structures) using locally available materials such as cloths, blankets, mosquito nets, plastic sheet, sheets, sticks, and scrap items.¹⁰⁷ These shelters are typically built during times of initial crisis when IDPs moved to a new location as first arrival or during their movement

¹⁰⁶ The “open space or no shelter” category refers to internally displaced persons (IDPs) who lack any form of structural or physical protection, leaving them exposed to the elements and compelled to sleep outdoors. This category also encompasses individuals in the initial stages of displacement who temporarily stay in churches, mosques, public spaces, or on the streets, where no covered or shaded structures are available.

¹⁰⁷ It refers to the self-initiated responses of internally displaced persons (IDPs) in the early stages of displacement—before formal humanitarian shelter interventions are established, or in situations where humanitarian agencies are unable to provide timely assistance.

for a short period of time. Makeshift structures lack essential features like doors and windows and sometime wall also. While the foundations may be relatively solid, the overall structures are temporary and vulnerable, that doesn't protect especially during the extreme weather. In areas near Shire town in North-western part of Tigray, some IDPs build shelters using grass or other readily available materials in a vernacular style. However, these makeshift shelters, often constructed from old plastics and other salvaged materials, are less to sustain, durable and may not withstand harsh weather conditions.

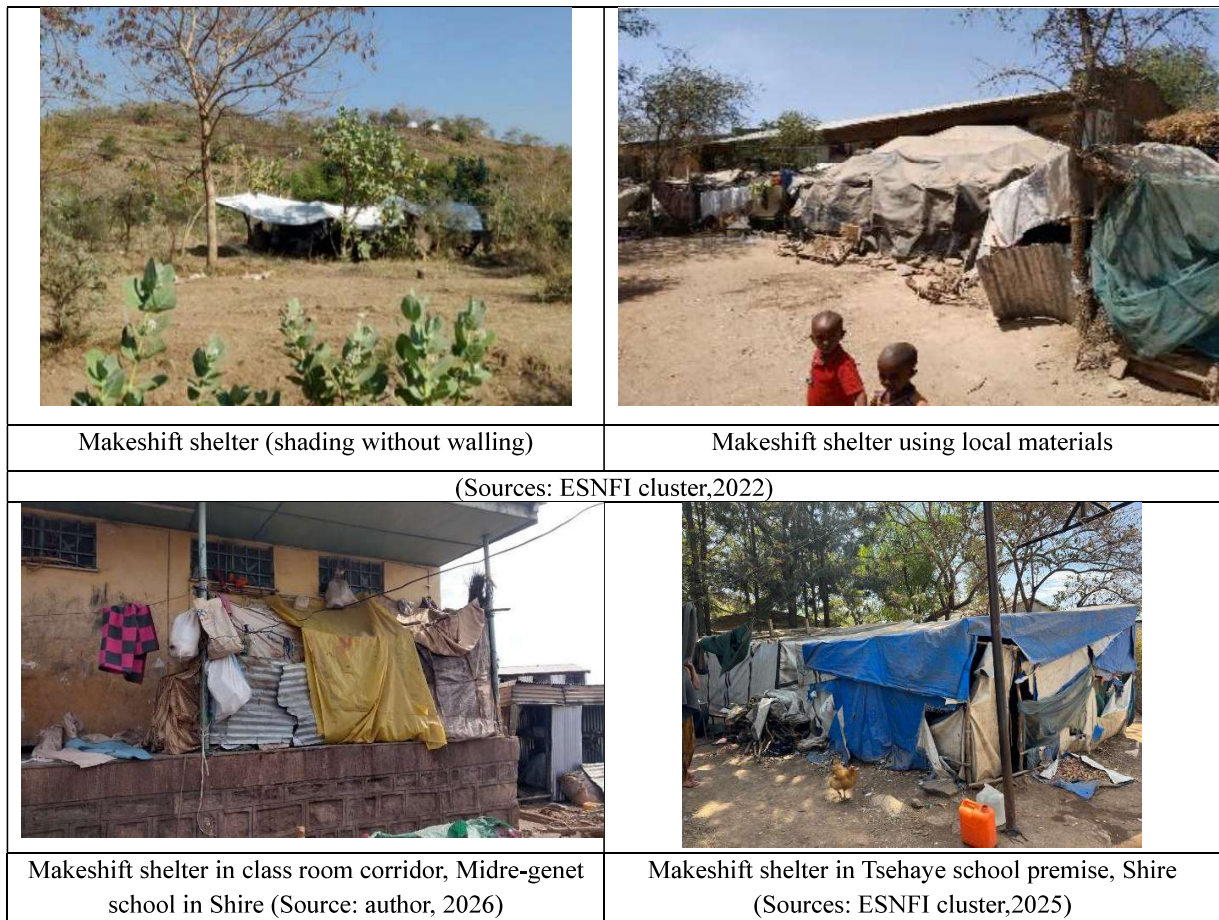


Figure 37: Makeshift shelters in Tigray (Source: author and ESNFI cluster)

Type 3: collective centres without partition (public buildings without partition)

Collective centres without partitions are commonly repurposed and used as emergency shelter during humanitarian crises, particularly when rapid accommodation is necessary for large numbers of displaced individuals. This type of shelter typically makes use of existing public or communal buildings such school, religious centres, and warehouse that have intact walls and roofs, but without partition. This absence of partition significantly compromises the privacy, safety, and dignity of IDPs residing with them.

In many emergency situations, these public facilities serve as collective centres, lodging an alternative shelter option for IDPs. Families are allocated floor space within the collective centres for sleeping, cooking

and keep their belongings. The irony in these cases is that the classrooms, originally designed for educational purposes, are now being used as emergency shelters, resulting in a higher crowding ratio than intended. A major concern, however, is the extreme overcrowding in all collective centres. For example, in school settings, it is common to find up to 40 IDPs living in a single 56-square-meter (7m x 8m) classroom which is far exceeding acceptable standards for safe and worthy living conditions.

The administration, management, and maintenance of such an emergency shelter facility are commonly the responsibility of local government authorities, in this case, the Interim Regional Administration (IRA) at different level, and humanitarian organizations. When a collective centre is registered under the Camp Coordination and Camp Management (CCCM) Cluster, humanitarian partners are mobilized to deliver essential services and manage the as a camp site. These services include WASH (Water, Sanitation, and Hygiene), emergency healthcare, and Mental Health and Psychosocial Support (MHPSS), in alignment with the Sphere Standards. However, during the initial period of the conflict, many collective centres did not have designated camp management agencies.



Figure 38: Educational facilities repurposed as collective centers for IDPs, with classrooms functioning as shelter units in Midregenet and Fresuwuat Secondary School, Shire (Source: author, 2026)

Schools in Tigray have played a central role as collective shelters for IDPs during the crisis.¹⁰⁸ While the Tigray Interim Regional Administration (IRA) is still actively working to restore the education system, many schools remain occupied by displaced populations, particularly those who fled from insecure areas, including western, north western, central, eastern, and southern Tigray. However, the continued use of educational facilities as IDP shelters causes a range of challenges that hinder both humanitarian response and resumption of formal education. The main challenges may be summarized as follows:

- i) Privacy, safety, and dignity are significantly compromised, despite families' efforts to create makeshift personal spaces using curtains, mosquito nets, desks, and benches.

¹⁰⁸ Since 2020, public schools have predominantly served as collective centers for internally displaced persons (IDPs), with their number fluctuating between 92 and 123 over time. In addition to hosting emergency shelters constructed within school compounds, existing facilities—including classrooms, storage rooms, halls, and administrative offices—were repurposed to accommodate displaced populations. This widespread use of educational infrastructure for humanitarian shelter purposes significantly disrupted the functioning of the education sector. In several cases, such as Midregenet High School in Shire, schools simultaneously operated as IDP centers while partially resuming educational activities in selected buildings.

- ii) The absence of designated communal spaces for traditional cooking and meal preparation has constrained customary practices and affected the daily living conditions of displaced populations.
- iii) The prolonged use of educational facilities as collective shelters has significantly hindered the timely resumption of schooling, despite the formal signing of the Cessation of Hostilities Agreement (CoHA).
- iv) The decommissioning¹⁰⁹ process entails substantial costs, including expenditures related to rehabilitation, disinfection, physical restoration of facilities, and the formal handover of the premises to local government and school authorities.
- v) In contrast to IDPs residing within host communities, those accommodated in collective centers are largely dependent on government authorities and humanitarian agencies for food assistance and other essential services.
- vi) In locations where the number of IDPs is relatively small and no camp management agency is present—such as at Wefri Bikalsi Full Elementary School in Maichew town, South Tigray—displaced populations often face challenges in making their needs visible and securing adequate assistance from government authorities and humanitarian organizations. This situation reflects a significant gap in representation and advocacy.

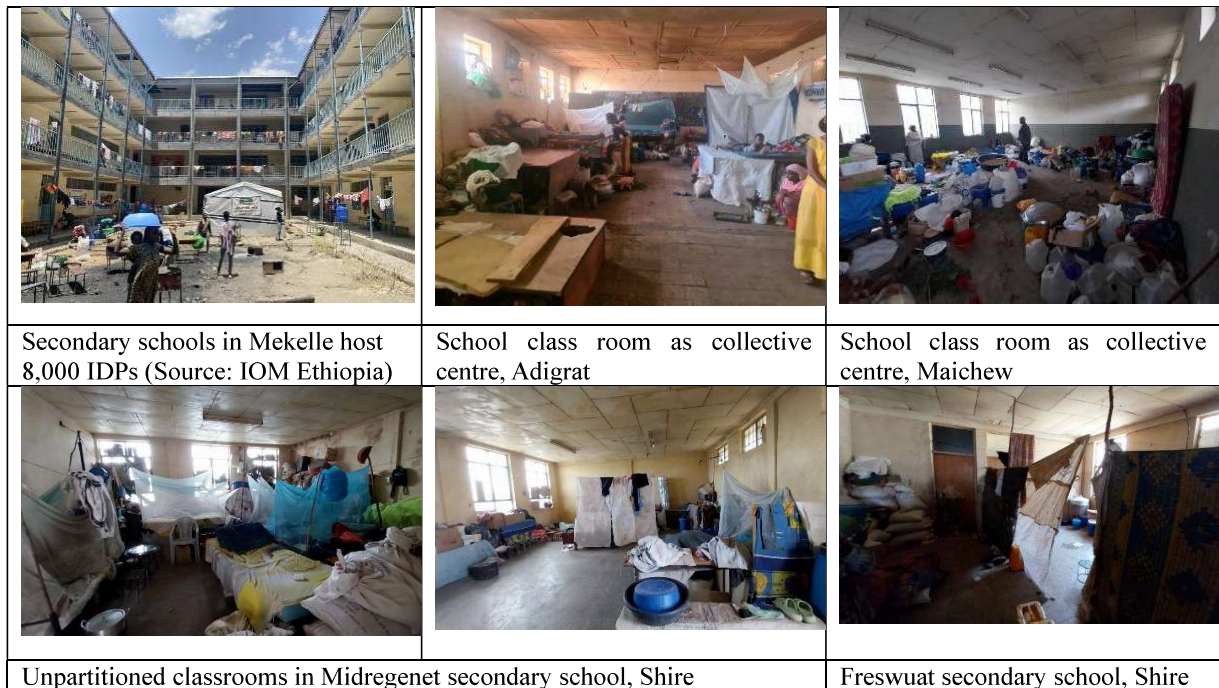


Figure 39: School room used as a collective centre without partition (Source: author, 2023-2026 and IOM)

¹⁰⁹ Comprehensive decommissioning and rehabilitation of schools previously utilized as IDP centers is essential before the full resumption of educational services.

Type-4: damaged building

Many members of the host communities¹¹⁰ in Tigray, although affected by the war, have opted to remain in their damaged homes rather than relocated. The extent of structural damage varies from minor to partial, often necessitating future repairs or upgrades. Common forms of damage include missing roofs or roof sections, as well as broken windows and doors. In response, households have employed two primary coping strategies. First, they utilize traditional and locally available materials to implement makeshift repairs. Second, when later on humanitarian assistance is provided, families often use plastic sheeting to cover roofs and other openings. Despite these interventions, the affected dwellings remain structurally unsafe and inadequate, compromising both privacy and dignity—particularly during the rainy season or periods of intense sunlight.



Figure 40: War affected family in their partially damaged building which serves as shelter (Sources: ESNFI cluster, 2022)

Type-5: unfinished building

With some repairs, maintenance, or renovation such as doors, windows, and floors, public or private unfinished buildings are serving as accommodation facilities for IDPs. In the case of unfinished building being considered for use as emergency shelter, a feasibility assessment is typically conducted by shelter partners, government bodies, or the local DRMC (Disaster Risk Management Commission), in coordination with the building owner, whether public, private, or an association. This assessment includes evaluation of the building's structural condition, its proximity to essential services, and the availability of basic infrastructure, such as water and electricity lines. It also considers the presence or potential installation of WASH facilities, including toilets, showers, and septic tank systems.

¹¹⁰ Host communities across Tigray includes non-displaced but affected residents are also present, as the full-scale conflict has impacted the entire regional ecosystem.

Most unfinished public, private, or institutional buildings with large capacities—typically classified as ‘Category C’ structures— are utilized as emergency shelters.¹¹¹ However, this practice presents legal and regulatory challenges, particularly in relation to Ethiopia’s Building Proclamation No. 624/2009. According to this proclamation, no building may be occupied or put to use without first undergoing an inspection to ensure compliance and receiving an official occupancy permit (FDRE, 2009). During periods of crisis and emergency, however, these regulatory requirements are often bypassed out of necessity. As a result, buildings are used without formal certification, raising concerns about safety, legality, and accountability in emergency shelter responses.



Figure 41: Unfinished Building Used as an Emergency Shelter (source: author 2026 and ESNFI cluster 2022)

Type-6: family tent

A standard modular emergency shelter type known as "family tent" is widely implemented by shelter partners, primarily supported by agencies such as UNHCR, ICRC, IFRC, and their respective partners. These tents are deployed and installed in various settings—including collective centres, spontaneous

¹¹¹ According to Ethiopia’s Building Proclamation No. 624/2009, buildings are classified into three categories. Category A includes one-storey structures with a span of up to 7 meters, or residential buildings with no more than two storeys. Category B covers buildings with spans greater than 7 meters, multi-storey structures not included in Category C, and real estate developments consisting of Category A buildings. Category C refers to public or institutional buildings, factories, workshops, and any structure exceeding 12 meters in height.

settlements, IDP sites, and planned camps—during both the emergency and post-crisis phases. Each family tent provides a main floor area of 16 square meters, along with two vestibules totaling an additional 7 square meters (3.5 m² each), resulting in a total covered area of 23 square meters, double fold with a ground sheet. The outside dimension of the tent is 4 m wide; 6.6 m long including vestibules and has a center height of 2.2m. The tent, including assembled guy ropes, has a foot print of around 61 square meters. The outer-tent roof and inner tent canvas is polyester cotton blend and the groundsheet follows the plastic sheeting standard and is intended to accommodate a family of up to five people. Designed as an emergency shelter solution, the family tent has an estimated lifespan of one year in use and a shelf life of up to five years. To assure stability, the outer tent is supported by 3 upright poles, 1 ridge pole, 6 side poles, 4 door poles, 3 guy ropes on each side and 2 guy ropes at each end.

In the Tigray region, these prefabricated emergency tents have been installed across multiple IDP sites, including the Mai Dimu planned IDP camp (one of the largest planned near Shire), school-based collective centres in Mekelle, and IDP site in Quiha sub-city, Abi-Adi and the Selekleka area. Each family tent is provided for a single family or household and is not suitable for long-term use, as it cannot withstand strong wind pressure a limitation that was particularly evident in the Mai Dimu camp near Shire in northwestern Tigray.¹¹²

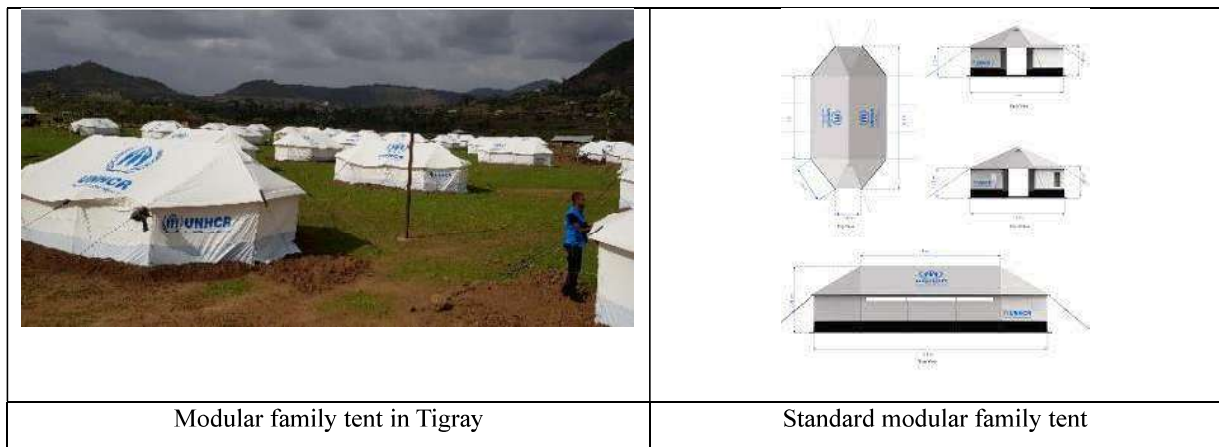


Figure 42: Family tent (UNHCR)

Another type of family shelter is the UNHCR self-standing family tent and framed tent. Since 2017, UNHCR has introduced an updated version of self-standing family tent, designed for improved mobility and rapid deployment. Its self-supporting structure allows it to be relocated with minimal dismantling, thereby saving valuable time in emergency situations where tents frequently need to be moved. It is an

¹¹² The deployment of single-family tents in shelter interventions across Tigray has been minimal, largely confined to initiatives and projects implemented by UNHCR. For instance, a family tent installed in Mai Dimu planned IDP camp as a pilot intervention was subsequently destroyed by strong winds, and no similar tents have been introduced thereafter.

improved dome shaped design enhance the living space, comfort and with new technical specification. The tent can be expected to have a minimum 1-year lifespan.¹¹³ The framed tent also used by UNHCR, ICRC and IFRC and suitable for a family of 5 people, it is heavier and more expensive as compared to the standards family tent, and meant for situations where the standard family tent is not the appropriate solution, being ideal to be used in urban areas.



Figure 43: UNHCR Shelter design and typology (UNHCR, 2016)

¹¹³ UNHCR. (2016). *Shelter design catalogue*. <https://studylib.net/doc/25925160/shelter-design-catalogue-january-2016>

Table 5: Characteristics comparison of family tent and self-standing (UNHCR)

Requirements	Standard family tent	Framed tent	Self-standing family tent
Design	Typically ridge, A-frame, or basic tent structures	Large modular structure; rectangular; steel/aluminum frame with PVC/polyester fabric	Dome-shaped self-supporting structure
Weight	56 kg (without shade net)	150-250 kg (depending on size, e.g., 24-72 m ²)	45 kg (including shade net)
Synthetic materials	Poly-cotton	PVC-coated polyester fabric (roof/walls)	Polyethylene and Polyester canvas
Winterization	Available and in use	Compatible with insulation liners, stoves, flooring kits	Current winterization kits adaptable to new tent
Self-supporting	No, it requires pegs and guy ropes to stand	Yes, with a rigid frame No – requires pegging and guy ropes	Yes, fully self-standing without pegs and guy ropes (these are required to secure the shade net), with minimal external anchoring.
Fire retardant	Poly-cotton is flammable	Meets UNHCR/ISO fire resistance standards	Development of the fire-retardant tarpaulin is on-going
Mobility	Moderate - often requires full dismantling to relocate	Low - heavy, difficult to move	High - can be relocated with minimal dismantling saving time
Lifespan	Often short-term (months to ~1 year)	2-3 years (with maintenance)	Minimum 1-year (extendable with maintenance)
Deployment speed	Moderate; depends on size and design	Rapid deployment with trained team	Rapid deployment; designed for emergency situations
Cost (average) in USD ¹¹⁴	400	700	400

Type-7: self-made emergency shelter kit

In collective centres, particularly within school compounds, IDPs have constructed self-made or user-built emergency shelters with the support of emergency shelter (ES) kits provided by shelter partners. These kits typically include materials such as tarpaulins (plastic sheets), ropes, various types of nails, and eucalyptus poles. This in-kind shelter assistance approach empowers IDPs to build their own shelters, but often results in informal, squatter-like settlements lacking proper communal infrastructure and services. Self-made emergency shelter with standard kit is quick and easy to build and has an intended lifespan of 3–6 months before a more permanent solution is available. When self-made without technical guidance, these shelters can be weak in structure and susceptible to risk from external weather elements.

¹¹⁴ The cost and exchange rate are variable and fluctuate over time.

Self-built shelters are relatively low-cost, as shelter partners typically provide only the kits, with minimal or no funding allocated for labour, construction supervision, or overhead costs. In some instances, partners may construct a demo shelter and offer basic on-the-job training. The shelters produced are typically single-room structures serving multiple purposes, including sleeping, cooking, and other household activities. However, certain cultural practices, such as the baking of *injera*, a traditional Ethiopian flatbread that requires an outdoor space for mud stove - cannot be adequately accommodated within these limited and enclosed spaces.¹¹⁵

These design limitations are further compounded by material shortages, spontaneous settlement patterns, and limited space in the collective centres, as a result, shelters are often constructed in close proximity to one another, sometimes sharing walls made of plastic sheeting in an effort to save materials. This squatting and congested arrangement exacerbates protection risks and undermines safety and dignity, particularly for vulnerable groups such as female-headed households (FHHs), child-headed households, and persons with disabilities (PWDs). The lack of adequate private and safe space also heightens exposure to fire hazards, gender-based violence (GBV) risks, and health concerns.

According to the various studies, the average household size in the Tigray region is approximately five individuals.¹¹⁶ Based on Sphere Association standard (2018), the minimum required covered living space or shelter size per household is 17.5 square meters, equivalent to 3.5 square meters per person. However, due to limited resources, many shelters fall short of this minimum standard. (Sphere, 2018) From a legal perspective, Housing, Land, and Property (HLP) concerns are relatively minimal in these collective centres, as the land and facilities are publicly owned and fall under government jurisdiction. Moreover, the organized nature of collective centres facilitates the delivery of essential services such as WASH (Water, Sanitation, and Hygiene), food assistance, mental health and psychosocial support (MHPSS), and Camp Coordination and Camp Management (CCCM), making service provision comparatively more accessible despite the prevailing shelter constraints.

¹¹⁵ During the field visit, IDPs constructed a traditional clay stove known as *mogogo* outside the shelter to reduce the risk of fire; the stove uses firewood as its primary energy source. Humanitarian partners, mainly Camp Coordination and Camp Management (CCCM) agencies, also established communal kitchens and provided this traditional stove, which is made from selected soil.

¹¹⁶ CSA. *Ethiopia and ICF. 2016 Ethiopia Demographic and Health Survey Key Findings. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. CSA and ICF; 2017*



Self-made emergency shelter at Tsehaye school IDP site, Shire

Self-constructed emergency shelter established within the premises of Fresweat High School, Shire

Figure 44: Self-made emergency shelter in collective centres (Source: author, 2025)

Type-8: emergency shelter kits constructed (agency supported)

Emergency shelters kits constructed directly by humanitarian agencies or their partners are generally better managed, more structurally sound, and offer greater resistance to weather conditions compared to the self-built ones. These shelters typically use plastic sheeting for roofing and walling, supported by eucalyptus poles for structural framing. Key organizations involved in emergency shelter construction under the Emergency Shelter and Non-Food Items (ESNFI) sub-national cluster in Tigray include IOM, UNHCR (through partners such as Action for the Needy in Ethiopia (ANE), Development Expertise Center (DEC), and Development for Peace Organization (DPO), Samaritan’s Purse (SP), Save the Children International (SCI), World Vision (WV), Norwegian Refugee Council (NRC) and the Danish Refugee Council (DRC). However, this type of shelter construction often relies heavily on eucalyptus poles, raising concerns about environmental sustainability, particularly the risk of exacerbating deforestation in the region due to the high demand for ES wall and roof structure.¹¹⁷

¹¹⁷ Eucalyptus poles are procured from a neighboring region, and consequently their prices fluctuate periodically due to logistical constraints, security, and associated transportation costs.



Figure 45: Standard emergency shelter constructed by humanitarian agency (Source: ESNFI Cluster, 2022)

Type-9: single shelter unit

Individual family shelters are widely regarded as preferred to communal accommodation because they provided greater privacy, psychological comfort, and emotional safety. In contrast, collective settings—such as transit centers and reception facilities—tend to heighten exposure to protection and health risks. As such, priority interventions in these contexts should include expansion, decongestion, partitioning, and overall reductions in occupancy density wherever feasible. The UNHCR Emergency Shelter Standards (2020) emphasize that individual family accommodation is consistently more appropriate than collective arrangements.¹¹⁸ Furthermore, the Sphere Handbook (Sphere Association, 2018) establishes a minimum living space standard of 3.5 square meters per person (Sphere Association, 2018).

In the context of Tigray, where the average family size is five individuals, the standard single shelter unit is typically 17.5 square meters. However, to better accommodate larger households and enhance overall living conditions, some implementing agencies construct slightly larger units of 20 square meters (4 m × 5 m). To ensure meet these standards, single-unit shelters are constructed to accommodate individual families, often incorporating internal partitions for added privacy. The structural frame is typically made from eucalyptus poles with 10 up to 12-centimeter diameter, while tarpaulin sheets are used for both roofing and wall coverings. Doors and window openings are similarly fashioned from the same tarpaulin material, offering a basic yet functional emergency shelter solution aligned with humanitarian standards.

¹¹⁸ UNHCR Shelter and Settlement, Interim Guidance On Shelter And Settlements Response To Covid 19 https://resources.peoplenneed.net/documents/816unhcr_interim_guidance_shelter_settlement_covid19_20200331.pdf



Figure 46: Single shelter in SC4 planned IDP camp, Mekelle (Source: author, 2023)

Type-10: modular shelter

Modular shelters serve as an intermediate option between duplex and communal shelters, where a duplex shelter typically consists of two units, and a communal shelter includes five units arranged in a row. These shelters are constructed using eucalyptus pole frames, with plastic sheeting used for both internal partitions and external coverings. They are well-partitioned to promote privacy and safety, and are fitted with doors to enhance security. Modular shelters are generally constructed in situ with the support of humanitarian agencies or partner organizations, and may include partially pre-assembled components. Once construction is completed, the shelters are handed over by the implementing partner and then allocated to IDPs by the site management agency.



Figure 47: Modular shelter units in Shire area (Source: ESNFI Cluster, 2022)

Unlike tent-based modular emergency shelters, the *'Better Shelter'*, often informally referred to as the "IKEA shelter," is a flat-pack emergency housing unit designed for displaced populations initially for refugees. Developed by "Better Shelter" in partnership with UNHCR and supported by IKEA Foundation, it provides a more durable and secure alternative to traditional tents and tarpaulins. The unit can be rapidly assembled without specialized tools and incorporates features such as a lockable door and solar lighting, thereby improving safety and living conditions. As a *transitional shelter* solution, it bridges the gap between emergency response and more permanent housing; however, it has also faced criticism regarding its cost, cultural appropriateness, and adaptability across different humanitarian contexts. The shelters have been piloted in refugee settings, including Dollo Ado in Ethiopia and Domiz camp on the Iraq–Syria border, but their application in IDP contexts remains limited.



Figure 48: Modular IKEA shelter (Source: via Better Shelter)

Type-11: duplex shelter

A duplex emergency shelter consists of two adjoining shelter units built within a shared structure. Each unit is designed to accommodate a single displaced family, offering a practical balance between material efficiency and enhanced privacy. These shelters are typically constructed using a frame of eucalyptus poles, with plastic sheeting or tarpaulin used for roofing, walling, door and, when possible, for window coverings. In the Mai Dimu IDP camp near Shire town, a total of 647 duplex shelters were constructed, although the initial plan was to build 900 units. The Norwegian Refugee Council (NRC) has also implemented duplex shelter construction in Abi Adi town in Central Tigray and Adi Abay, near Sheraro town in North western Tigray.



Figure 49: Duplex shelter in Mai Dimu IDP camp Shire (Source: author,2024)

Type-12: communal shelter

Unlike single-unit shelter, block of shelter units are constructed to provide a larger accommodation in camp settings. A typical example for communal emergency shelter is found in Sebacare four (SC4) planned camp from zone A to E which is found in the outskirts of Mekelle city with one communal shelter block size of 8 meters by 25 meters which have ten shelter units each with individual size 4 m by 5 m (20-meter square). This is greater than the Sphere minimum standard of 3.5 m square per person, excluding cooking kitchen for an average of 5 individuals per household (Sphere Association, 2018). While this shelter typology improves space efficiency and scalability, it also presents some of the drawbacks related to privacy and safety, particularly due to the close proximity of multiple families within a shared structure. In SC4, the communal shelter blocks are arranged in a radial spatial layout, with four blocks organized around a central communal open space which serve as backyard area. However, this design does not reflect the traditional rural settlement patterns, which are typically characterized by single, dispersed, and private housing units. On the other hand, elements of Tigray's vernacular architecture, commonly known as *hidmo* (ህድሞ), is characterized by dry stone wall often incorporated into communal shelter designs. This technique reinforces the plastic walls, helping to prolong the lifespan of the tarpaulin while also improving privacy and indoor comfort. The approach was first adopted spontaneously by the IDPs themselves and later scaled up by the IOM shelter unit after its significant advantages became evident. The construction of low-height (dwarf) dry stone walls was technically supported by architects and engineers, and practically implemented by masons from IDPs temporarily hired by humanitarian partners as incentive workers.



Communal shelter with dry wall construction in SC4 camp Mekelle

Figure 50: Communal shelter in SC4 camp Mekelle (Source: author, 2023)

Type-13: existing structure partitioned (space within a space)

This type of emergency shelter is constructed within large pre-existing structures such as government warehouses, school classrooms, factories, and halls which are repurposed and subdivided using internal partitions to accommodate IDPs. It exemplifies the "space within a space" spatial design principle, where the original building defines the outer structure, and interior partitions made of plastic sheeting and timber frames create individual shelter units that serves for a single family. A notable example of this approach can be found in Adigrat town, Eastern Tigray, at the Commission IDP site,¹¹⁹ where a large existing warehouse was partitioned by IOM using plastic sheeting and timber framing to create multiple emergency shelters. This type of shelter benefits from the protection provided by the existing structure, offering improved shielding from harsh sunlight and wind, as well as enhanced physical safety. However, it raises concerns regarding privacy and personal protection, particularly due to the shared nature of the space and limited partitioning.

¹¹⁹ The commission IDP site is located in kebele 05, Adigrat town in Eastern zone of Tigray. It hosts IDPs from different parts of Ethiopia. The site was commonly used as a store/warehouse before the war. The collective center accommodates around 100 individual IDPs. Source: IOM CCCM areas of Intervention Map July 2024.



Figure 51: Shelter constructed with partition inside another main space (Source: author, 2025; ESNFI, 2022)

Type-15: cash-for-rent temporary housing

IDPs often opt to live within host communities rather than in camps, collective centres, or informal squatter settlements. A common option is to rent accommodation in urban areas either independently or through programs facilitated by humanitarian organizations as part of their shelter and settlement responses. Cash for rent sometime called rental support or cash-for-shelter. In recent years, the use of cash-based interventions (CBI) for emergency shelter in humanitarian contexts has increased due to flexibility nature of the programme. This approach allows displaced families to access private and dignified living spaces while awaiting more permanent shelter solutions. Shelter agencies give affected households cash or voucher earmarked for paying rent. This allows people to quickly secure safe accommodation in the local housing market-often with host families or in vacant properties-while avoiding the delays of constructing new shelter.

Cash-for-rent programs may be provided as either conditional or unconditional cash transfers, depending on the operational context. However, IDPs living as tenants in host communities often face overcrowded conditions, as many families have large household sizes in Tigray and struggle to afford adequately sized rental homes, particularly when cash assistance is limited and does not cover the cost of larger housing units. In cash-for-rent shelter programs, humanitarian agencies assess the availability of housing stock in urban areas and the average rental cost of basic accommodation before deciding on the appropriate intervention. Most humanitarian shelter programs provided rental assistance averaging 1,500 Ethiopian Birr (approximately US \$ 25) per month, typically for a duration of six to nine months, and in some cases extending up to one year.¹²⁰ This program helps also landlords by inject cash to the market during the cash shortage time. For example, the IOM supported 450 HH IDPs living in Adigrat town through the cash-for-

¹²⁰ The average rental cost is determined through feasibility assessments, market analyses, and evaluations of available housing stock conducted prior to implementation. Consequently, rental rates may vary depending on the year of implementation and the size of the urban area. In this process, the Shelter Cluster plays a significant role in assessment and in harmonizing approaches across the region.

rent project. Similarly, DPO implemented cash-for-rent intervention in various parts of Tigray, including the Northwestern Zone. In addition, the UNHCR piloted a Cash-Based Initiative (CBI) to support rental payments for IDPs over a six-months period, targeting 440 households in Shire and Mekelle during the peak of the crises.

Rental arrangements for IDPs are frequently informal and largely based on verbal agreements, which increases the risk of premature eviction and tenure insecurity. To address these challenges, humanitarian partners, with the support of the Sub-national Shelter Cluster, have developed standardized written tenancy agreements in local languages to formalize rental terms and protect occupancy rights for an agreed period. In the absence of such formal mechanisms, power imbalances between property owners and tenants often create exploitative dynamics, further heightening the risk of eviction.

These vulnerabilities are compounded in situations of prolonged displacement. Rental accommodation, whether arranged independently by IDPs or supported by non-governmental (humanitarian) organizations, becomes increasingly difficult to sustain over time. While some IDPs initially access rental housing as a temporary solution, many later face financial constraints that prevent them from meeting rental obligations, forcing a return to camps or collective sites. A similar trend is evident in cash-for-rent programs implemented by NGOs, which typically provide support for only six to nine months. Once this assistance ends, beneficiaries often struggle to maintain their housing. This challenge is particularly pronounced in protracted displacement contexts, such as in Tigray, where many IDPs have remained displaced for over five years, making continued access to rental accommodation without sustained support highly uncertain.



Figure 52: IDPs who initially lived in rental housing were unable to sustain rent payments, prompting their return to Tsehaye IDP site in Shire, where they built makeshift shelters (Source: author, January 2026)

ናይ መንበረ ገዛ ክራይ ስምምዕነት

ተስማሕሳሕ ወገናት : መከረይ ለይተ/ወ/ሮ _____ ዜግነት ሊ/ያዊ

እድራሽ _____ ወረዳ _____ ቀበሌ _____ ቁፅረ ገዛ _____

ተከራይ ለይተ/ወ/ሮ _____ ዜግነት ሊ/ያዊ

እድራሽ _____ ወረዳ _____ ቀበሌ _____ ቁፅረ ገዛ _____

እነ አካራይ ብሽመይ ዝተመዘገበ ንመንበረ ግልጋሎት ዝውዕል ኣብ ወረዳ _____ ቀበሌ _____ ዝርከብ ስፍሓት _____ ካሬ ሜትር ዝኮነ ንተከራይ ንምክራይ ተስማሕሳሕ ኣለኩ። እቲ ውዕሊ ዝግዕሱ ጊዜ ብንጉሱ ሽድሽተ ወርሒ ዝግዕሱ ኮይኑ ካብ _____ ጀመሩ ክሰብ _____ ኮይኑ ናይቲ ኪራይ መጠኑ ብር _____ እንትከውን ! ኩነታት ክፍሊት ኣፈፃፀማ ድማ ኣብቲ ናይቲ ውዕሊ ጊዜ ዘለዉ ወርሓት ቅድሚያ ኣብ ናይቲ ወርሒ መፈለጎም ክከውን ተስማሕሳሕ ኣለና ። ተከራይ ኣብ ታሓቲ ዘንብሮ ክታም በዚ ናይዚ ውዕሊ ስምምዕነትን ኩነታትን መስምሕሳሕ ይረድእ ።

አካራይ ቅድሚያ እዚ ውዕሊ እዚ ናይ ዝነበረ ክፍሊታትን ዕዳን ንዘካርዮ ገዛ ነፃ ክገብሮን ዝክፈሉ ክፍሊታትን ክክፍል ግብእ እዩ ። መከረይ ኣብዚ ናይዚ ውዕሊ ግዜ ዝህልው ክፍሊታት ኤሌክትሪክን ማይን ንክክፍል። ተከራይ ብውዕሊ ናይ ዝተረከበ ንበረታት ናይ ምርካብን ግብእ ኣለዎ።

እነ ተከራይ ድማ ናይ አካራይ ዝኮነ ንመንበረ ግልጋሎት ዝውዕል ኣብ ወረዳ _____ ቀበሌ _____ ዝርከብ ስፍሓት _____ ካሬ ሜትር ዝኮነ ንምክራይ ተስማሕሳሕ ኣለኩ። እቲ ውዕሊ ዝግዕሱ ጊዜ ብንጉሱ ሽድሽተ ወርሒ ዝግዕሱ ኮይኑ ካብ _____ ጀመሩ ክሰብ _____ ኮይኑ ናይቲ ኪራይ መጠኑ ብር _____ እንትከውን ! ኩነታት ክፍሊት ኣፈፃፀማ ድማ ኣብቲ ናይቲ ውዕሊ ጊዜ ዘለዉ ወርሓት ቅድሚያ ኣብ ናይቲ ወርሒ መፈለጎም ክከውን ተስማሕሳሕ ኣለና ። እነ ተከራይ ነዚ ውዕሊ ኣንቢቦ ብውን ተረዳኡን ተቀቢሎ ካብዚ ንታሕቲ ዝህልው ክታም ድማ ካብዚ ንላዕሊ ንዘሎ ስምምዕነትን ኩነታትን ምስምሕሳሕ ይረድእ።

አካራይ ወይ ተከራይ እዚ ውዕሊ _____ መዓልታት ብፅሑፍ ቅድሚያ መጠንቀቅታ ብምህብ ሓዲኦም እቲ ውዕሊ ምቁራፅ ይከኣል እዩ። አካራይ ቅድሚያ ናይ ዝተከፈለ ክፍሊት ክራይ ዘይተጠቀመሉ እንትህልው ኣብ ውሽጢ ቲዲ ሰማን ናይቲ መጠንቀቅታ ክምልስ ኣለዎ።

እዚ ስምምዕነት ብመሰረት ፍ/ሕ/ቁ 1731! 2005 ዝፍጸም እዩ።

መከረይ ሸምን ፊርማን _____ **ዕለት** _____

ተከራይ ሸምን ፊርማን _____ **ዕለት** _____

ሸምን ፊርማን ምስክራት

- 1. _____ ዕለት _____
- 2. _____ ዕለት _____
- 3. _____ ዕለት _____

Figure 53: Tenant agreement form used in cash-for-rent programs in humanitarian sector in Tigray (Source: IOM 2023)

Summary of tenant agreement for Cash-for-Rent program in humanitarian context (English translation):
This agreement establishes the rental terms between the tenant and landlord as part of a cash-for-rent assistance program/project, typically used in emergency settings. It specifies the identities and contact information of both parties, the rental property location, and the agreed monthly rent amount.
The agreement outlines the rental period, usually fixed for a specific duration, and stipulates that the tenant will use the property solely as a residential shelter while maintaining it responsibly.
The landlord grants the tenant the right to occupy the property under these conditions.
Signatures from the tenant, landlord, and witnesses formalize the agreement, ensuring mutual understanding and legal compliance with relevant regulations.



Figure 54: IDP living in rent house in Adigrat (Source: author 2023)

Type-16: neighbourhood approach (area-based approach)

IDPs often choose to reside in a temporary accommodation provided by friends, families or relatives. In such cases, humanitarian interventions focus on supporting both the IDPs and the host communities. This approach—commonly referred to as a neighbourhood approach which referred to as a host family shelter arrangement suited to urban and semi-urban contexts, where it offers an alternative to encampment policy with an innovative solution that promotes the social and spatial integrations of IDPs with existing neighborhoods.¹²¹

IDPs often stay with friends, extended families, or relatives as a temporary and low-cost lodging strategy that requires minimal initial input from the government, NGOs, or aid agencies. However, the effectiveness of this approach relies heavily on the willingness and capacity of host families to share limited resources. In many cases, both IDPs and hosts occupy the same plot or even a single room for prolonged periods—sometimes extending to months or years—without any significant improvement in services or infrastructure. This approach has shown particular potential in Tigray, where strong estimated around 80% of IDPs reside within host communities where social ties among extended families and kinship networks facilitates such host arrangements. Nonetheless, this model may be less applicable in urban areas of regions or countries with weaker family-based ties, social cohesion or less communal living traditions. An example of this innovative adaptation of approach is the neighborhood approach (NA)¹²² piloted in Mekelle for urban IDPs in 2022 and a year later the project expanded to Adigrat town. At the end of 2025 a similar project also

¹²¹ The neighborhood approach (area-based approach) referred a shelter provision is currently advocated alternative humanitarian responses strategy for supporting displaced population living within host communities. This approach supports the integration of displaced and host families within shared space, fostering social cohesion while addressing shelter needs.

¹²² The pilot project supports 300 internally displaced persons (IDP) households through three types of shelter interventions: expansion or extension of livable spaces (25%), renovation of existing structures (45%), and rehabilitation of host family homes (30%). These interventions aim to enhance accommodation capacity and promote the social and spatial integration of IDPs within host communities. A details discussion conducted on NA project in chapter two.

implemented in Endabaguna town and named as Area based Settlement Approach (ABSA). This approach not only enhance social integration but also create shared resilience as both help one another.¹²³ In the context of Tigray, six principal shelter categories can be identified based on four key criteria: duration of stay, degree of locational permanence, anticipated lifespan, and construction materials. These categories include emergency shelters, temporary shelters, temporary housing, transitional shelters, core shelters, and progressive shelters. This primary classification can be further disaggregated into sixteen sub-categories, reflecting variations in design and construction approaches, particularly within emergency, temporary, and core shelter typologies. These shelter forms evolve in response to distinct phases of displacement, including the onset of crisis, patterns of displacement, relocation processes, rehabilitation and recovery stages, and eventual opportunities for return or local integration. Furthermore, comparison with non-displaced communities offers additional insights into the behaviors, adaptive strategies, and housing expectations of IDPs, thereby enriching the analysis of shelter trajectories and recovery pathways.

Table 6: Shelter type and camp features based on criteria (Source: author, 2024)

<i>Shelter type</i>	<i>Length of stay</i>	<i>Permanency of the location</i>	<i>Expected lifespan</i>	<i>Materials used</i>
Open space living condition	Short days	Not permanent	Very short	None
Make-shift shelter	Short days	Semi-permanent	Very short	Any available materials
Collective centres without partition	Medium to Long	Permanent	Very short	None
Damaged building	Long	Permanent	Unknown	Available local resources
Unfinished building	Medium to Long	Permanent	NA	None, but for door and wind
Family tent	Short days/months	Semi-permanent	1 years	UNHCR prefab tent
Self-made emergency shelter	Short months	Semi-permanent	3-6 months	Standards ES kits (rope and plastic sheet)
Emergency shelter kits constructed	Short months	Semi-permanent	6 months	Standard ES kits
Single shelter unit	Short months	Semi-permanent	6 months	Standard ES kits
Modular shelter	Short months	Semi-permanent	6 months	Standard ES kits
Duplex shelter	Short months	Semi-permanent	6 months	Standard ES kits
Communal shelter	Short months	Semi-permanent	6 months	Standard ES kits
Shelter repair kits (core shelter)	Long	Permanent	Long	Standard SRK kits (CGI, poles, nails)
Existing structure partition	Long	Permanent	Variable	Timber frame, and plastic sheets or plywood
Cash for rent	Long	Permanent	Conditional	None, cash only
Neighbourhood approach	Long	Permanent	Long	Customized shelter kits

¹²³ This discussion should be considered in conjunction with the material presented in Chapter Two.

Type of settlements (IDP sites and host communities):

Shelter and settlement are interrelated concepts that must be addressed through an integrated and holistic approach in humanitarian response. According to the Sphere Handbook (2018), shelter is the household living space, including the items necessary to support daily activities, while settlement denotes the broader spatial context in which individuals and community reside (Sphere Association, 2018). Similarly, the UNHCR (2026) Emergency Handbook defines settlement as the physical spaces and environments in which households are accommodated, emphasizing the spatial relationships between individual shelters and the overall layout of the community. In displacement contexts Settlement is used as broad term to identify the geographical area in which forcibly displaced people settle, for short or longer periods. It also encompasses those settlements were forcibly displaced and host community populations live, either separately or together (UNHCR, 2026).

Humanitarian shelter is not be viewed as a standalone intervention; rather, it encompasses a range of shelter types and household items, as well as linkages to livelihoods and various spatial and social interactions. On the other hand, in humanitarian context, a settlement refers to a community of covered living spaces that provide a safe, healthy, secure living environment, ensuring privacy and dignity to those groups, families, and individuals residing within them. To distinguish from other types of development-oriented settlements, humanitarian actors commonly use the term transitional settlement. Transitional settlement can be defined also as a settlement and shelter resulting from conflict and natural disasters, encompassing the continuum from emergency responses to durable solutions (Corsellis & Vitale, 2005; ShelterProject, 2003).

Considering local contexts and environmental features, six main transitional settlement options have been identified: dispersed in host families, rural self-settlement, urban self-settlement, collective centres, self-settled camps, and planned camps. The options can be viewed as three dispersed options and three grouped, or as four self-settled options and two planned options (Corsellis & Vitale, 2005).Based on these distinctions, settlement profiles can be sketched as follows:

- a. Dispersed settlement (with host families, rural self-settlement, and urban self-settlement)
- b. Grouped settlements (collective centres (mass shelter), self-settled camps, and planned camps)
- c. Self-settlement option (rural self-settlement, urban self-settlement, collective centres (mass shelter) and self-settled camps)
- d. Planned options (host families and planned camps)

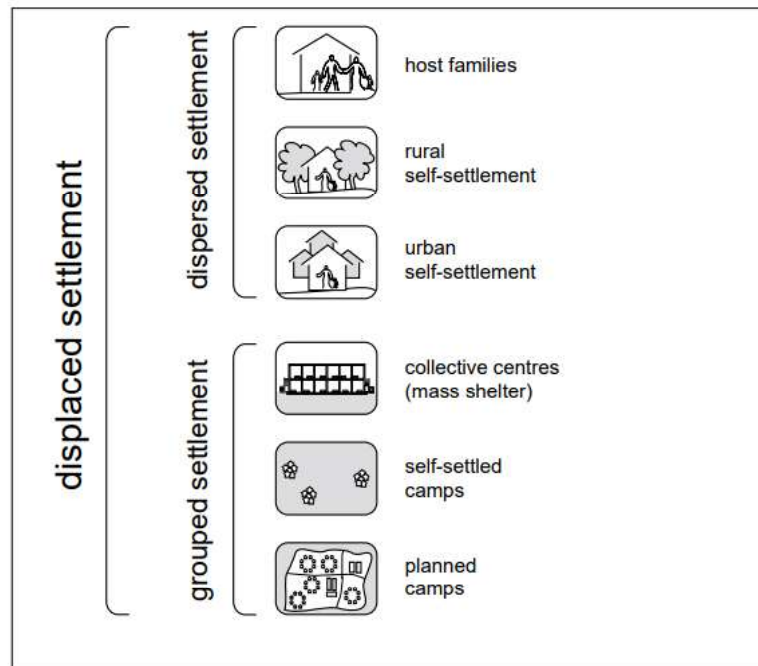


Figure 55: Displaced persons settlement programme options (Corsellis & Vitale, 2005)

According to the Minimum Standards for Camp Management by CCCM Cluster, (2021), settlement types are broadly classified into outside-camp arrangements and camp or camp-like settings. Each of these categories includes a range of more specific settlement forms, differentiated by the degree of planning, infrastructure provision, and management required to support displaced populations (CCCM cluster, 2021).

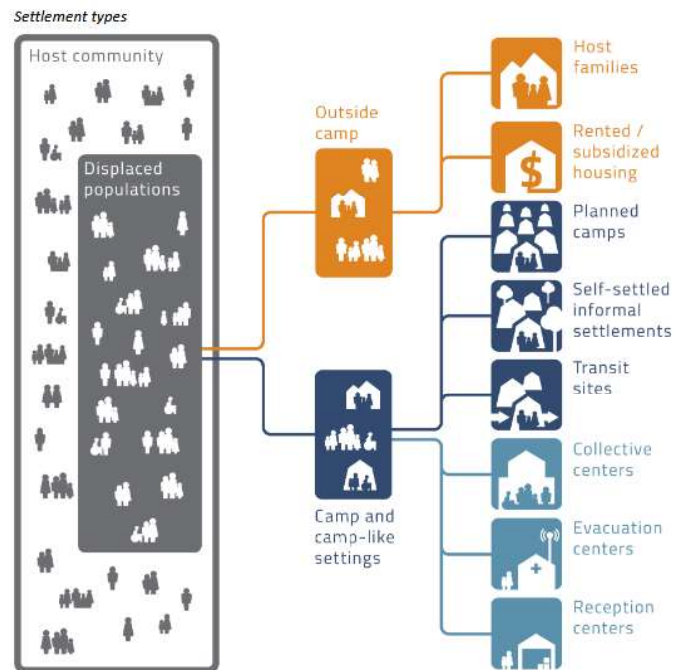


Figure 56: Settlement typology (CCCM cluster, 2021)

According to the UNHCR,2025, settlement typologies in emergency contexts are categorized according to their geographical location urban, peri-urban, or rural settings. The UNHCR Emergency Handbook outline, five key settlement typologies, each characterized by specific spatial, social, and infrastructure features that shape the living conditions of displaced populations. Considering the three perspectives on settlement typology, the frameworks proposed by Corsellis and Vitale and UNHCR are more relevant to the situation in Tigray. Displacement in Tigray is highly dynamic, involving both dispersed and grouped settlements across urban, peri-urban, and rural areas. Many IDPs live with host communities, in collective centres, or in self-settled camps, reflecting the transitional settlement categories identified by Corsellis and Vitale (2005). These frameworks better capture the fluid and mixed nature of displacement realities in the region. These typologies are discussed and analyzed through case studies and/or examples, highlighting how, geographic and contextual factors influence the design, management, and sustainability of emergency settlements.¹²⁴

Table 7: Settlement typology: Theory, principles, and practice in Tigray (Source: author,2024)

S.N	Settlement typology	Definition	Tigray IDPs settlement case
1.	Individual accommodation in communities	People living in individual housing or with host families in cities, towns, villages	It accounts the largest proportion - approximately 80% IDPs-reside within host communities, most often in urban areas, where they stay with friends, families/relatives or in rent house.
2.	Formal settlement	Planned settlements involve the allocation of officially designated land for groups of asylum seekers, refugees, or IDPs. These populations are housed in purpose-built sites designed to provide access to essential services and facilities. Such settlements operate under the oversight of an appointed management authority. Camps constitute a specific form of these formalized settlement arrangements.	Planned IDP camps such as: <ol style="list-style-type: none"> 1. Seba care 4, Mekelle 2. Mai Dimu, Shire 3. Ex-UNMEE, Adigrat 4. Adwa Industry Zone, Adwa 5. Adi-Abay, Sheraro 6. Maichew 7. Five Angels, Shire 8. Cambo, Adi Daero
3.	Informal settlement	In an informal settlement, a group of asylum-seekers, refugees or IDPs choose to settle in self-identified spontaneous sites. These Self-	For example, Mayhanse is an informal IDP settlement located within an elementary school

¹²⁴ United Nations High Commissioner for Refugees. (2025). *UNHCR Emergency Handbook: Settlement typologies in emergencies*. Geneva, Switzerland: UNHCR. Retrieved from <https://emergency.unhcr.org>

		settled settlements can be located on state-owned, private or communal land, with or without negotiations with the local population or private landowners.	compound, which also functions as a collective center. It was established in the aftermath of the conflict in November 2020. Situated in Mayhane Kebele, Asgede Woreda, the site is managed by OSSHD in partnership with UNHCR and currently hosts 699 households, totaling 3,841 individuals.
4.	Collective center	A collective centre is an accommodation arrangement in which groups of asylum seekers, refugees, or IDPs are housed in pre-existing structures—such as community centres, town halls, schools, or unfinished buildings—or in newly established facilities. These centres typically arise in situations of sudden population influx, particularly when local rental markets become overstretched. Collective centres are conceived as temporary forms of shelter.	Since the onset of the conflict, more than 120 collective centres have been established across Tigray, with the majority located in school buildings. In Mekelle, the decommissioning of these schools has been undertaken once internally displaced persons were relocated to planned camps, informal settlements, or host communities, allowing the facilities to return to their original educational function. ¹²⁵
5.	Transit Centre	A transit center is used at the beginning of a new emergency with often high influx and is hosting asylum-seekers, refugees or IDPs pending transfer to a suitable formal settlement, individual private accommodation, or to areas of return.	Quiha, a sub-city and satellite town of Mekelle, served as a transit centre for IDPs arriving from the neighbouring Afar region, with relocation efforts moving them to other settlements. ¹²⁶

For the estimated more than 2 million IDPs at the pick of the crises in 2021¹²⁷, well-planned settlement can help maximums their protection, security and support them to minimize of disease, manage natural

¹²⁵ The number of collective centres has fluctuated as the crisis shifted from the emergency phase to the recovery phase, particularly due to the reopening of schools and the resumption of regular educational activities in accessible areas.

¹²⁶ Quiha is one of the seven sub cities in Mekelle but spatial connected with road as disconnection with agricultural area.

¹²⁷ International Organization for Migration/Displacement Tracking Matrix (DTM), *Ethiopia National Displacement Report 16: Site Assessment Round 7, 1–26 June 2021* (2021).

resources sustainably, and maintain good relations with their hosts communities until durable solutions to their displacement are achieved (Corsellis & Vitale, 2005) (IOM, 2023). Following the Cessation of Hostilities Agreement (CoHA) in Tigray in November 2022, approximately 1 million individuals have returned to their places of origin with limited shelter support. However, due to ongoing protracted displacement, around 1 million IDPs continue to live in precarious conditions in various shelter and settlement types.¹²⁸

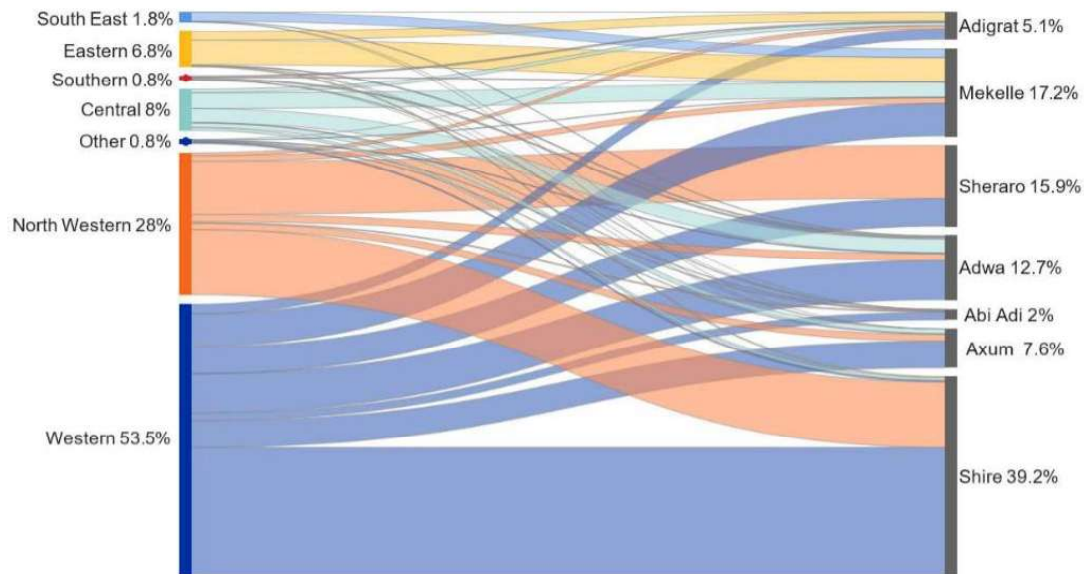


Figure 57: Sankey diagram of IDP migration flows from origin to destination in Tigray (CCCM Cluster et al., 2021)

As illustrated in the Sankey diagram above, 53.5% of surveyed IDPs originated from the Western Zone and were primarily displaced to Shire, followed by other urban centers such as Abi Adi, Adigrat, Adwa, Axum, Mekelle, and Sheraro. In addition, 28% of surveyed IDPs came from the Northwestern Zone, with Shire and Sheraro serving as the main destinations. These patterns indicate that the Western Zone was the largest zone of origin, while Shire remained the principal destination for IDPs up to July 2021.

More than five years since the onset of displacement, IDPs in the Tigray region continue to reside in a variety of settlement types, ranging from grouped arrangements to dispersed settings across different administrative zones. According to the Displacement Tracking Matrix (DTM) of the IOM (2023), approximately 80% of IDPs now live within host communities in dispersed urban settings, with the majority concentrated in major urban centers such as Mekelle, Shire, Axum, Adigrat, Adwa, Abi Adi, Sheraro, Mekoni, and Maichew. These dispersed settlements include individuals living in rental accommodations or staying with friends, family members, or extended relatives. The remaining 20% of the displaced population

¹²⁸ Despite discrepancies in reported figures, both governmental and humanitarian sources acknowledge that the IDP population neared one million following the COHA.

are accommodated in planned camps (e.g., Mekelle, Shire, Adwa, Adigrat, Sheraro, and Maichew), collective centers (mass shelters), and a smaller proportion in rural self-settlements, particularly near Shire and Sheraro (IOM, 2023).

Table 8: Top six major urban areas hosting IDPs (Source: IOM DTM, 2021)

Major urban areas	Number of IDPs	Remark
Shire	673,241	Settlements located in urban areas are generally the preferred option for most IDPs, primarily due to considerations of safety and security, as much of the conflict occurred in rural areas through guerrilla fighting. Additionally, urban centers tend to offer better access to basic services and infrastructure.
Mekelle	295,979	
Sheraro	273,275	
Adwa	220,675	
Axum	133,674	
Adigrat	86,436	

The provision of shelter for IDPs closely intertwined with the settlement types in which they reside, as widely emphasized in the most literature. Settlement type – whether host-family accommodation, planned camp, collective centres and rural self-settlement – significantly influence the design, implementation, and management of emergency shelter interventions. For instance, shelters in planned camps such as Sebacare 4 in Mekelle and Mai Dimu in Shire, tend to be standardized and systematically arranged to facilitate efficient service delivery and site management. Conversely, shelter support in dispersed or host-community settlements, such as the Neighbourhood (Area-Based) Approach, is more variable and often integrated into the existing housing structures of host families, resulting in highly context-specific and improvised solutions.

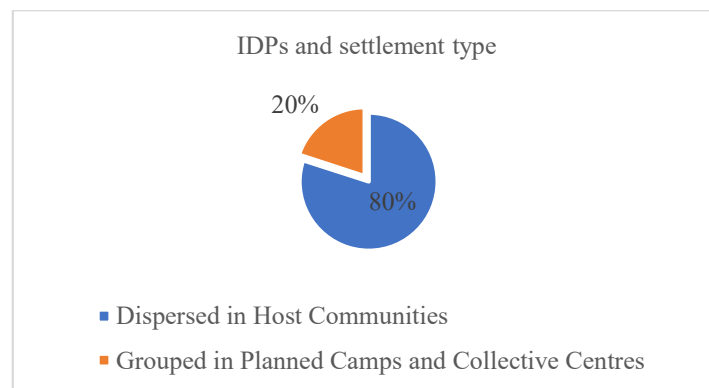


Figure 58: Settlement type in Tigray (Source: IOM/DTM Ethiopia 2023)

A comprehensive understanding of these diverse settlement contexts is essential for tailoring shelter responses that uphold protection, dignity, and functionality, while also addressing the specific logistical and social challenges associated with each settlement type. Consequently, emergency shelter strategies must remain adaptable to the varying spatial and social characteristics of settlements in order to effectively meet the needs of displaced populations. The spatial distribution of IDP sites or settlements across major urban areas in Tigray is outlined and briefly discussed below.

IDP sites in Mekelle:

According to the CCCM Cluster Ethiopia, Mekelle city hosted one of the largest concentrations of IDPs, both within host community and in collective sites.¹²⁹ Many of these IDPs experienced multiple displacements from various parts of Tigray region before arriving in the city. At the onset of the conflict, a significant influx of displaced individuals was forced to seek shelter and settlement in open spaces, including church compounds, unfinished building, and collective sites such as schools. By 2021, a total of 25 IDP sites identified across Mekelle, some of which are managed by humanitarian partners involved in camp coordination and management. Following the 2022 peace agreement, efforts made to resume the education system by decommissioning schools that used as collective centres. However, significant challenge encountered in relocating IDPs from school-based shelters into tarpaulin type shelter in planned camp such as Seba care 4 planned IDP camp.

In 2022, the decommissioning of six former school-based IDP sites in Mekelle enabled roughly 6,363 school-aged children to regain access to education. Restoring these public facilities to their original functions allowed children who had been out of school since the conflict began in November 2020 to return to a structured learning environment. The decommissioning of schools previously used as IDP collective centers was conducted in strict accordance with the WASH cluster decommissioning protocol. The process included thorough cleaning of all classrooms and WASH facilities, using both dry and wet methods with detergents, followed by disinfection with a minimum 0.5% chlorine solution. Insecticides were applied to control vectors, and the school compounds were cleaned with proper waste management measures implemented. Once the disinfection and cleaning procedures were completed, a formal handover of the facilities was conducted, with confirmation received from each school administration.¹³⁰

¹²⁹ Collective sites are locations where services, infrastructures and resources are shared and managed collectively. To achieve this, effective site-level coordination between all stakeholders is a central task of every Site Management Agency (SMA). however, the settlement is used broadly to describe a community in which people live.

<file:///C:/Users/pc/Downloads/CCCM%20Yemen%20IDP%20Hosting%20Sites%20Typology%20-%202022%20version.pdf>

¹³⁰ According the record of WASH activities and project completion documented by IOM on September 17, 2022.

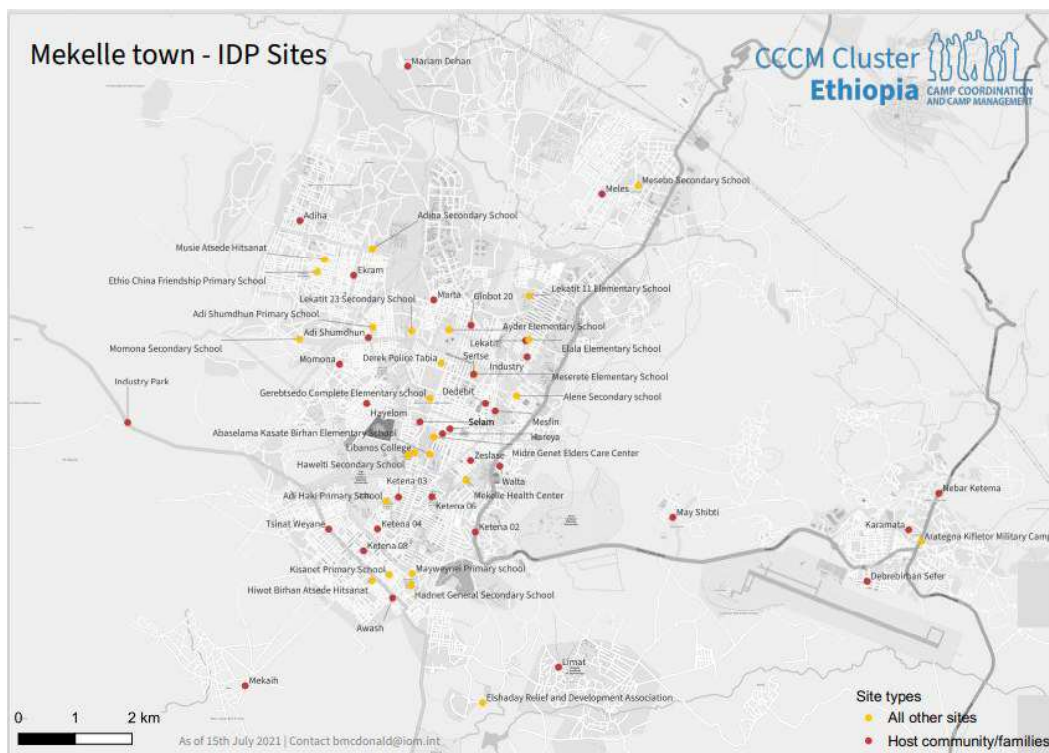


Figure 59: IDP sites in Mekelle (Source: CCCM cluster, 2021)¹³¹

IDP sites in Shire-Indasilassie:

Shire also called Indasilassie hosts a substantial number of IDPs residing in planned camps, host communities, and across 18 collective centres. Five angel's is the only planned camp located within Shire and constructed by UNHCR in 2021. The collective centers located in schools, kindergarten, colleges and even a poultry farm. Among these, Hibret Elementary School is one of the largest collective sites, accommodating approximately 8,314 HHs - equivalent to 21,488 individuals. The site is overcrowded and highly susceptible to seasonal flooding. Site management is overseen by the Site Management Agency (SMA) called OSSHD/UNHCR while FHI360 serves as the health cluster partner responsible for health services within the site.

Another major site is Tsehaye Elementary School, which currently accommodates approximately 1,893 households (around 8,723 individuals). IDPs are housed within 32 classrooms as well as in tarpaulin shelters constructed across the school compound. The classrooms are significantly overcrowded, with occupancy levels exceeding minimum humanitarian standards, often providing less than two square meters per person.

¹³¹ Maps of IDP locations for all locations covered by the CCCM joint intentions survey. <https://www.cccmcluster.org/resources/idp-sites-mekelle-adigrat-freweyni-abi-adi-shire-axum-adwa-sheara> (similar sources used for other MAPS references also for other urban areas in Tigray)

In addition, thousands of IDPs reside within the school perimeter in emergency shelters, many of which are poorly constructed, self-built, and lack adequate safety.

Despite these conditions, the site functions as an unplanned camp, managed by humanitarian partners, particularly the CCCM unit of IOM. In total, more than 900 household shelters are present, with a high concentration of makeshift structures and an unplanned settlement pattern. Nevertheless, a range of essential services—including healthcare, shelter, WASH, nutrition, and food assistance—are coordinated and delivered in a relatively organized manner (CCCM Ethiopia, 2025).

Although various humanitarian partners have attempted to provide basic services to IDPs across their different type of settlements, the situation in Shire remains largely unmanageable. People in IDP sites continue to suffer from hunger and lack of medical care, with the precarious conditions exacerbated by the protracted nature of the conflict and recent budget reductions from USAID.

According to the IDPs in Tsehaye Elementary School, the food aid they receive is inconsistent and provided in insufficient quantities. As a result, many IDPs are forced to rely on host community, and some resort to begging for food and money. Other attempt to earn a living through daily labor in the town, engaging in physically demanding jobs, producing local beverages, or participating in other labor-intensive activities. Additionally, a number of IDPs try to sustain themselves through informal street vending and small-scale businesses locally called gullit.

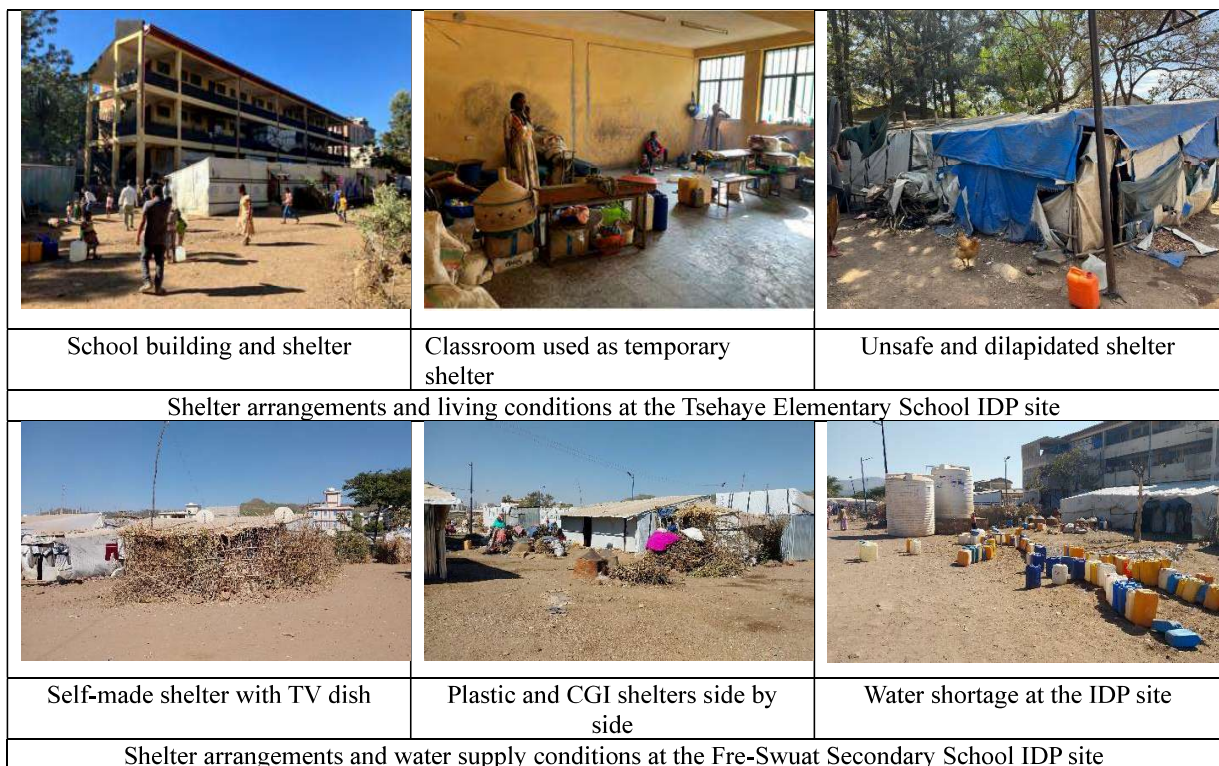


Figure 60: Shelter and settlement conditions at Tsehaye and Fre-swuat Schools IDP sites in Shire (Source: author 2022-2026 and ESNFI 2024)

IDP settlements in Shire differ markedly from other areas in Tigray, not only because they host the largest numbers of urban IDPs but also due to the widespread presence of informal settlements across multiple locations. IDPs establish shelter in any available space, including vacant plots, market buildings, warehouses, offices, classrooms, corridors, staircases, kindergartens, and poultry farm areas. These settlements are largely unmanaged by humanitarian organizations or local authorities, and living conditions often fall below humanitarian standards, with inadequate shelter, safety, and dignity. The high concentration of IDPs also places significant pressure on basic services in host communities, including increased housing rents, competition for labor opportunities, and depletion of natural resources such as firewood and charcoal. Taba Weyane, Tsinat, Tsehaye, Hibret, and Fresiwuat schools serve as collective centers accommodating large numbers of IDPs. Most of these sites are overcrowded, unplanned, and function as informal settlements, where IDPs construct makeshift shelters within classrooms and across the school premises. These shelters are often congested, with multiple households sharing a single room, creating significant protection concerns, particularly for vulnerable groups such as women and children. All school-based IDP sites are also prone to flooding, with Hibret being particularly susceptible. During the rainy season, residents face severe waterlogging, and the risk of waterborne diseases increases substantially.

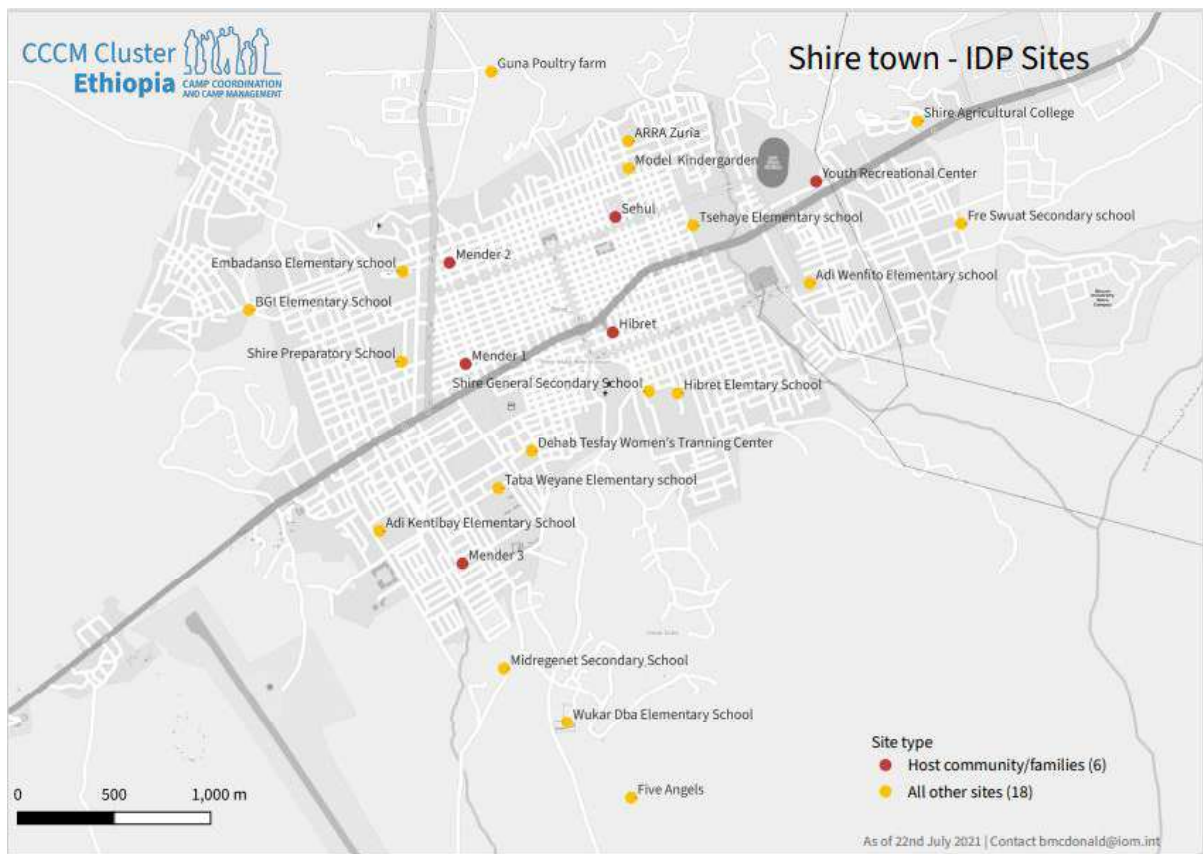


Figure 61: IDP Sites in Shire

IDP sites in Axum:

In Axum, there are 15 IDPs sites which most of them are school collective centers. The remaining IDPs reside within host communities, either in rented housing or in free accommodation with host families. According Joint IDP Intentions Survey – Axum conducted by CCCM cluster Ethiopia, approximately 60% of the IDPs origin is from humera, tsegede, maykadra, dansha and welkait woreda of western Tigray.

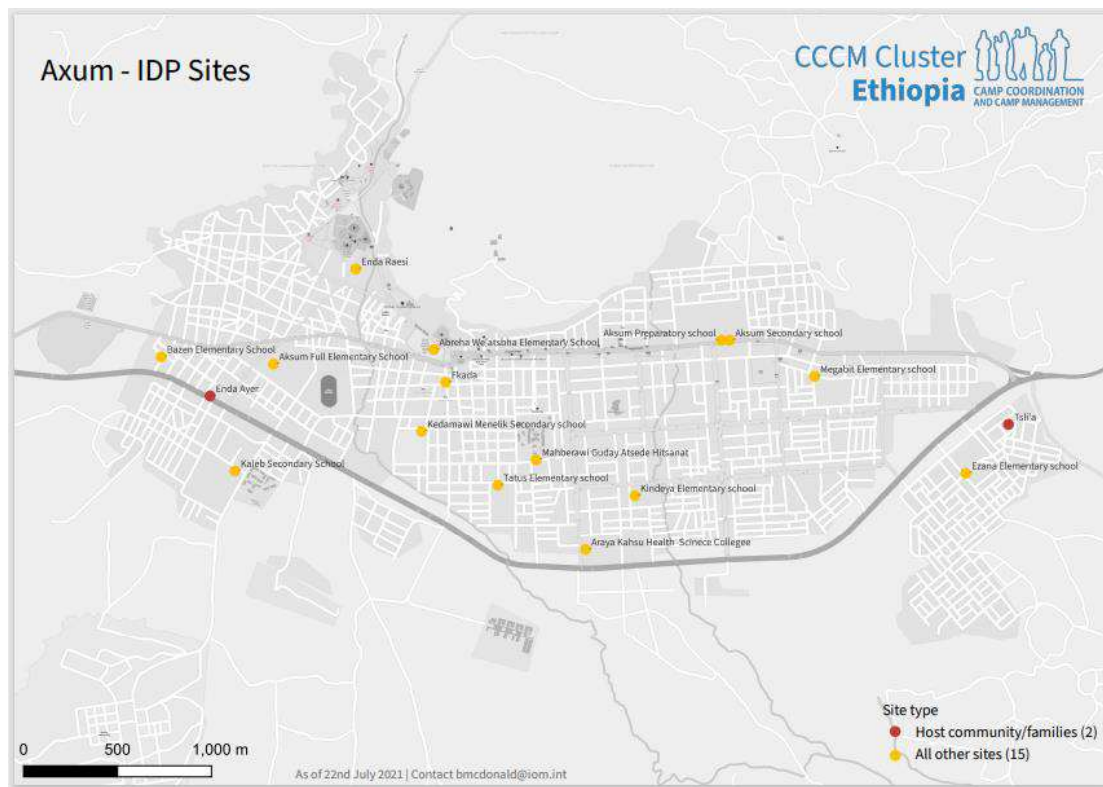


Figure 62: IDP Sites in Axum

IDP sites in Adigrat:

In Adigrat, there are six IDP sites and one planned camp. The planned camp, established on the former UNMEE military site and now known as the former or Ex-UNMEE IDP Camp, received 998 IDPs in December 2024, who were previously living in precarious conditions within host communities and collective centers. The remaining IDPs in Adigrat continue to reside with host families, either in rented housing or in free accommodation. According to the Joint IDP Intentions Survey – Adigrat, conducted by the CCCM Cluster Ethiopia, approximately 31% of the IDPs originate from Humera and Welkait woredas in western Tigray, while 22% come from Gulomekeda and Erob woredas in the Eastern Zone.

Adigrat also hosts IDPs from outside Tigray and other regions of Ethiopia. These individuals reside together in a large former warehouse, known as the Commission IDP Site, located in Kebelle 05. This relatively small group receives limited attention from the local government and humanitarian partners, resulting in reduced access to assistance.

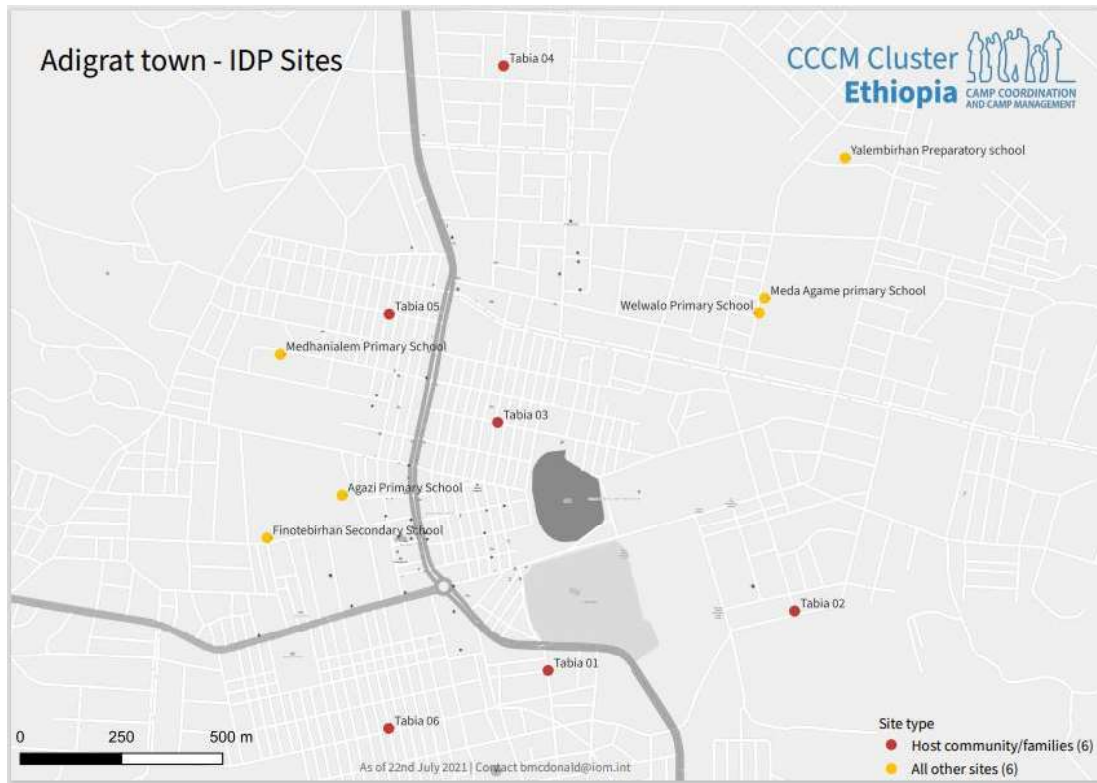


Figure 63: IDP Sites in Adigrat

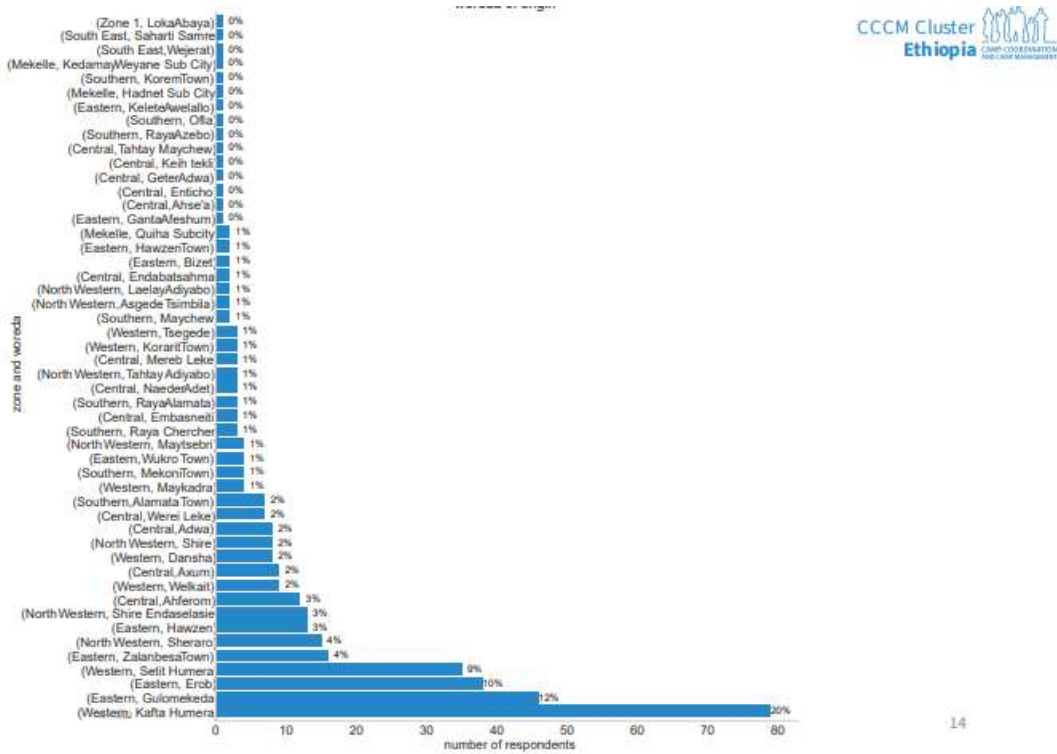


Figure 64: Origin of IDPs hosted in Adigrat

IDP sites in Adwa:

In Adwa, there are 12 IDPs sites which most of them are school collective centers with one planned type camp called Adwa Industrial Park. The remaining IDPs reside within host communities, either in rented housing or in free accommodation with host families. According Joint IDP Intentions Survey – Adwa in 2021 conducted by CCCM cluster Ethiopia, approximately 60% of the IDPs origin is from humera, tsegede, maykadra, dansha and welkait woreda of western Tigray.

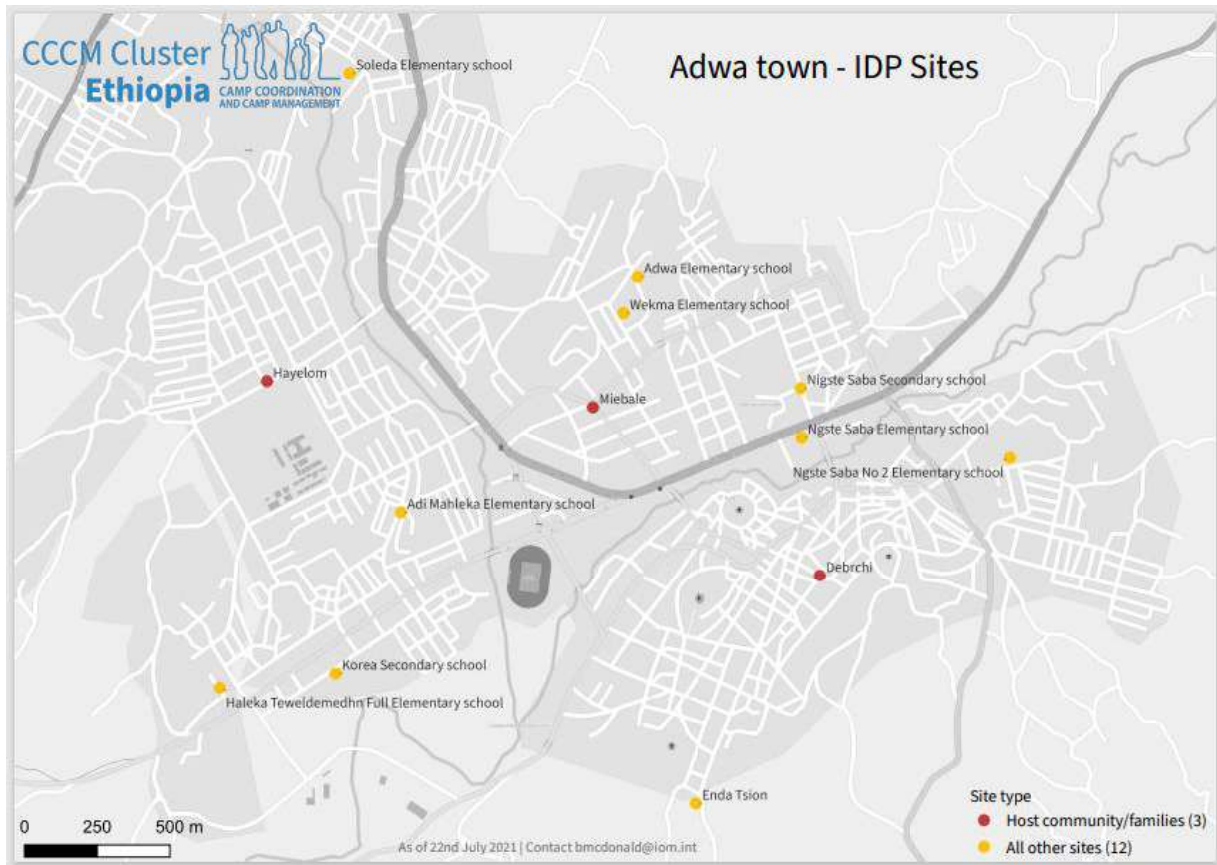


Figure 65: IDP Sites in Adwa

IDP sites in Abi Adi:

A small town located approximal 95 kilometers far from Mekelle host a significant number of IDPs from various parts of Tigray, accommodated both within host communities and in designated IDP sites. In Abi Adi, there are 7 IDPs sites which most of them are school collective centers. The remaining IDPs reside within host communities, either in rented housing or in free accommodation with host families. According Joint IDP Intentions Survey – Abi Adi in 2021 conducted by CCCM cluster Ethiopia, approximately 70% of the IDPs origin is from humera, tsegede, maykadra, dansha and welkait woreda of western Tigray.

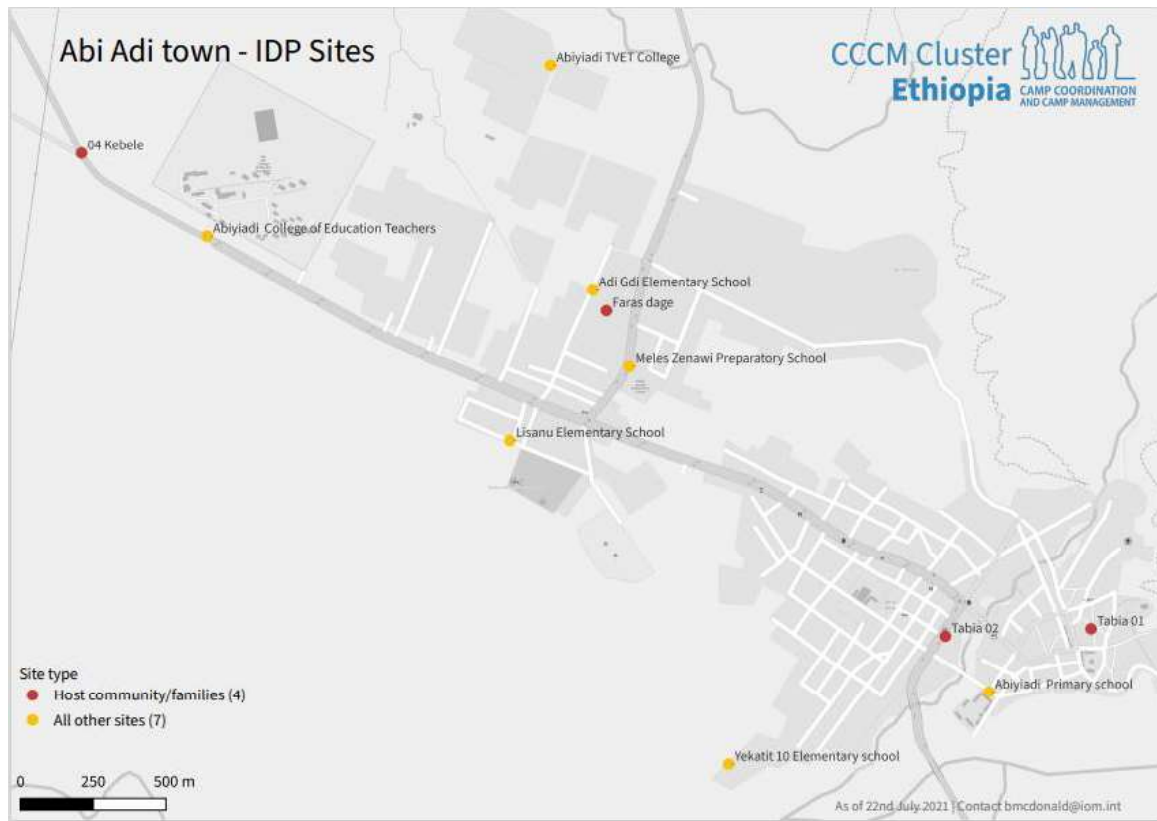


Figure 66: IDP Sites in Abi Adi

IDP sites in Sheraro:

Sheraro, is a town located near the Eritrean border, hosts a significant number of IDPs originated from the western and northwestern zones of Tigray. The town, contains 14 IDP sites, most of which function as school-based collective centers in addition to one planned camp located on the outskirts in area called Adi Abay. The remaining IDPs reside within the host community, either in rented housing or through free accommodation with host families. According to the 2021 Joint IDP Intentions Survey – Sheraro, conducted by CCCM cluster Ethiopia, approximately 66% of the displaced population comes from northwestern, while 34 % originate from Humera, Tsegede, Maykadra, Dansha and Welkait woreda of western Tigray. Notably, 65% of IDPs in Sheraro are originally from a single Woreda – Tahtay Adiyabo.

In the Adi Abay planned camp, duplex shelters measuring 10 m by 3.5 m were constructed by the Norwegian Refugee Council (NRC) and the Development Expertise Center (DEC) to facilitate the relocation of IDPs previously sheltered at Sheraro’s Mulu College. Camp management is overseen by OSSHD¹³²/UNHCR and ANE, while essential services—including health, WASH, and nutrition—are

¹³² Organization for Social Service Health and Development (OSSHD) is a distinguished Non-Governmental Organization (NGO) established in 1994 in Tigray, which committed to catalyzing sustainable social development, promoting health initiatives, and fostering community growth. With a steadfast dedication to improving lives and fostering positive change.

provided by the International Medical Corps (IMC). Additional contributions to shelter construction have been made by International Rescue Committee (IRC) and Nexus Ethiopia.

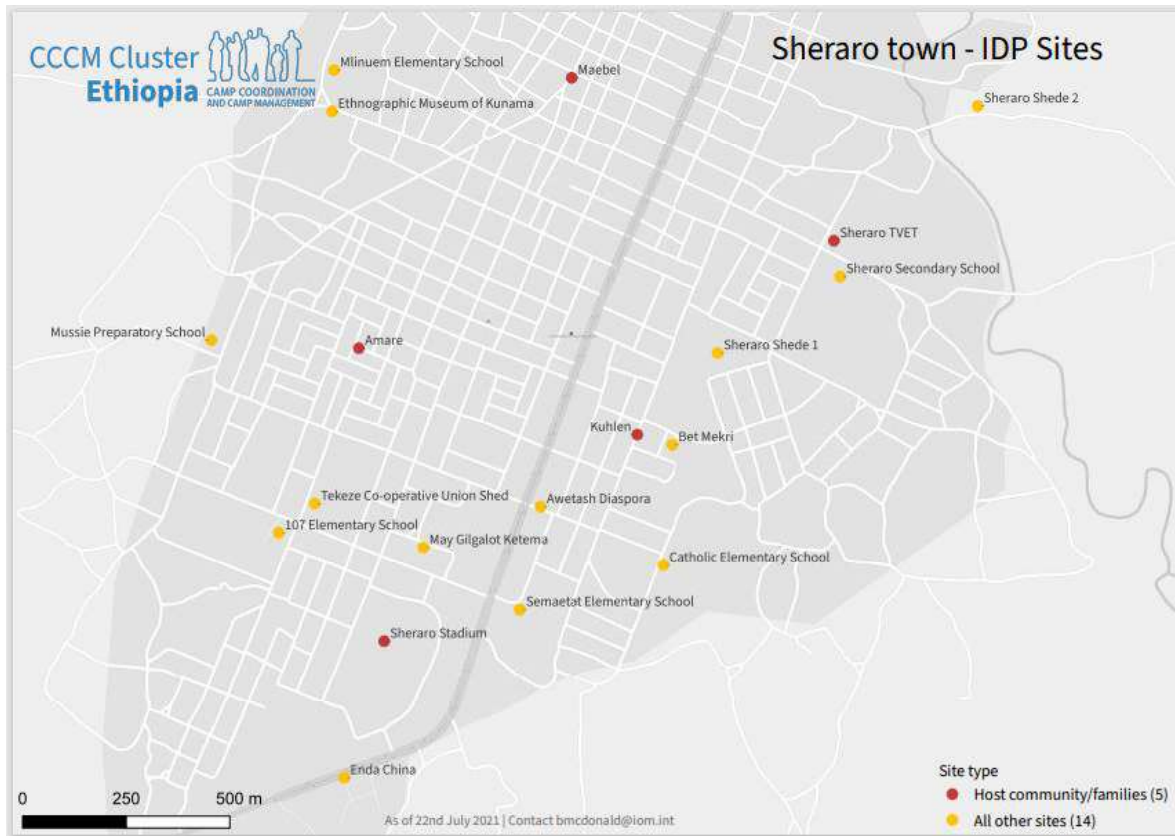


Figure 67: IDP Sites in Sheraro

The typology of shelters identified thus far includes sixteen types, which have been grouped into six main categories alongside six settlement typologies. Among these, shelter arrangements within host families or host communities represent the most prevalent option.

Table 9: Matrix of identified shelter types and settlement options (S. Bekele et al., 2025)

Shelter vs. Settlement	Host families	Rural self-settlement	Urban self-settlement	Collective centres (mass shelter)	Self-settled camps	Planned camps
Emergency shelter	*	*	*	*	*	*
Temporary shelter		*	*	*	*	*
Temporary housing	*					
Transitional shelter	*					*
Core shelter	*					
Progressive shelter	*					

According to data from the CCCM cluster, Tigray subnational level, schools have served as the primary collective sites for accommodating IDPs. During the initial phase of mass displacement and intensified conflict, over 120 schools were used as collective shelters, with classrooms and surrounding premises repurposed for housing. By January 2023, the number of school-based collective sites had decreased to 108 as schooling resumed in some areas; however, their use continued to significantly disrupt the education system. In certain locations, such as Maichew town in southern Tigray, the presence of IDPs in schools created tensions with host communities, as families of students advocated for the reopening of schools.

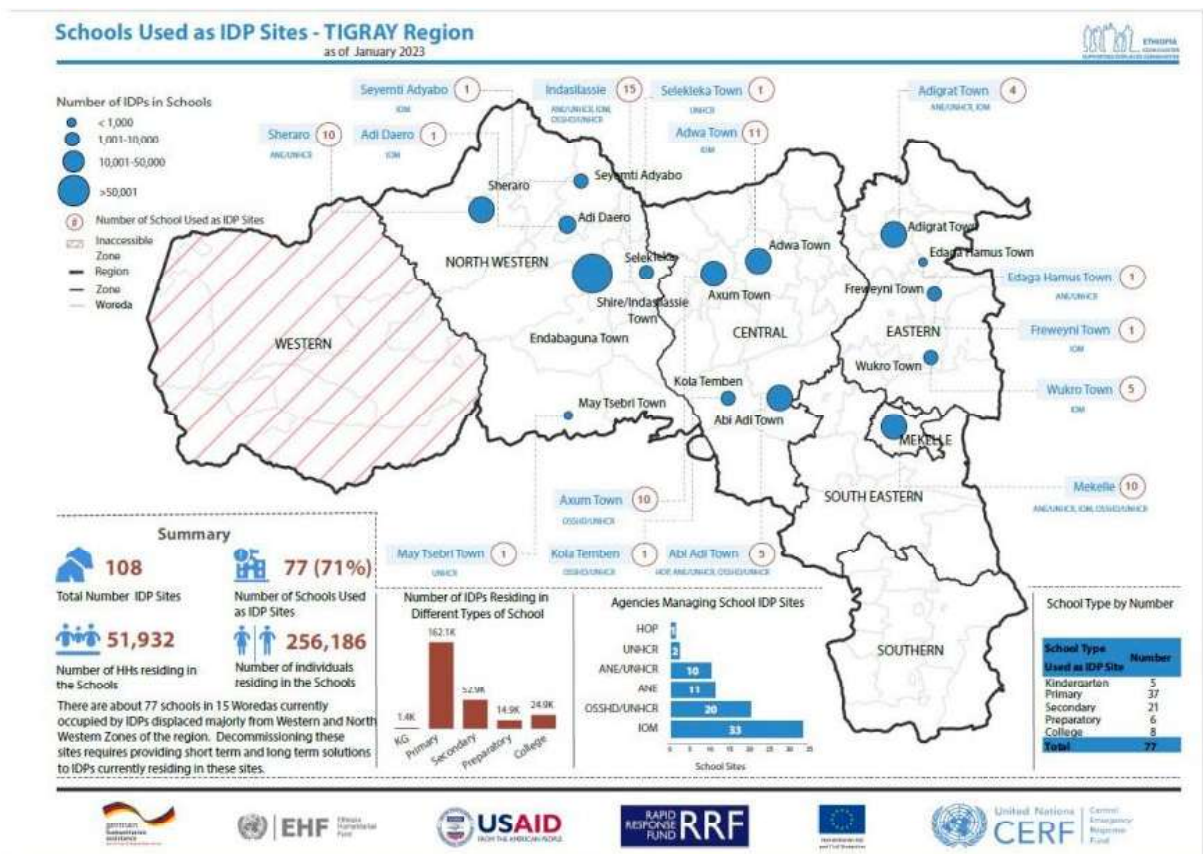


Figure 68: Schools as shelter in Tigray (CCCM cluster January,2023)

Physical approaches to shelter provision in Tigray have been identified in accordance with prevailing settlement patterns and can be grouped into four main categories. First, the majority of IDPs are accommodated in private settings, primarily through hosting arrangements, whereby displaced persons share housing with host families, rent rooms or apartments, or reside in other private accommodations; this category also includes shelter support interventions such as the repair and reconstruction of damaged houses and villages, including the provision of shelter repair kits (SRKs) and core housing solutions. Second, temporary accommodation is provided through organized camp settings, typically consisting of tents or

tarpaulin-based shelters intended to meet immediate emergency needs. Third, there is the temporary occupation of existing buildings, ranging from unfinished or abandoned houses to the use of public facilities such as schools, warehouses, and storage structures as collective shelters. Fourth, self-settled camps or informal settlements have emerged, where displaced populations establish makeshift shelters and temporary structures independently, often without formal planning or institutional support.

Table 10: Settlement typologies and shelter options in Tigray (Source: based on ESNFI, 2022)

Settlement Typology	Shelter Solutions	Remarks
Host communities	<ul style="list-style-type: none"> - Host families providing housing without formal adherence to humanitarian principles. - Neighborhood/area-based settlement approach - Cash-for-rent / rental arrangements - Existing structure partitioned - Unfinished buildings/structures - Public building without partition - Damaged building - Open space living conditions - Shelter repair kits (core shelter) 	<p>‘A family within family’ – Many shelter and settlement responses stem from spontaneous initiatives by host communities and IDPs. It offers support through self-initiated, community-driven efforts.</p>
Planned camps	<ul style="list-style-type: none"> - Emergency Shelter Kits (ESK, agency supported) - Duplex shelter - Communal shelter - Modular shelter - Single-unit shelter - Family tent (UNHCR type) 	<p>Structured and planned camp layout with agency support.</p>
Collective centers (mass shelters)	<ul style="list-style-type: none"> - Self-made emergency shelter kits - Makeshift shelters - Existing structure partitioned - Public building without partition 	<p>Schools, warehouses, and other public buildings used as temporary mass shelters.</p>
Self-settled camps (informal settlements)	<ul style="list-style-type: none"> - Makeshift shelters 	<p>Spontaneous settlements without formal planning or management.</p>

1.4.2. Functional-self production of space

Shelter should be understood as a process rather than a finished product. Among displaced communities, the production of space begins with the use of locally available materials and embedded traditional construction knowledge. This process extends beyond the mere creation of physical structures; it involves the continuous negotiation and organization of spaces in relation to everyday practices. The interaction between shelters and daily activities—such as cooking, backyard farming, income generation, socialization,

and service access—gradually produces a broader settlement structure. In this sense, shelter formation is inseparable from livelihood strategies and community life. As Twigg (2002) argue, post-disaster shelter recovery should be understood as a dynamic and participatory process rather than a single, static product. Effective shelter interventions should therefore integrate social, economic, and environmental dimensions, acknowledging that rebuilding homes simultaneously entails restoring livelihoods, community structures (social networks), and local capacities (Twigg, 2002).

This process-oriented understanding of shelter becomes even more significant in contexts of protracted displacement. As displacement extends over time, the living conditions, spatial configurations, and socioeconomic dynamics of IDPs evolve considerably. What initially begins as emergency accommodation gradually transforms into temporary, and in some cases semi-permanent or permanent, settlement structures. In Tigray, where many IDPs have experienced displacement for approximately five years, patterns of informal integration with host communities have increasingly emerged. Prolonged displacement has intensified interaction and mutual dependence between displaced and host populations, reflected in both competitions over and sharing of resources, services, and livelihood opportunities (UNHCR, 2015b). Thus, the shelter production process not only shapes the physical environment but also reconfigures social relations, economic practices, and settlement dynamics over time.

Livelihood:

Following their arrival and settlement in designated locations, and after securing basic shelter, displaced populations gradually begin to reorganize their daily lives within the context of both emergency and protracted displacement. Over time, they actively engage in the co-production of space, shaping and reshaping both their dwelling units and surrounding environments to support everyday functional activities. These spatial adaptations are closely linked to survival strategies, including informal livelihood practices and supplementary income-generating activities.

Reliance solely on humanitarian assistance proves insufficient, particularly given that many displaced households have larger-than-average family sizes and increased dependency ratios. Consequently, displaced communities utilize available residential and adjacent spaces to sustain household reproduction, enhance food security, and diversify income sources. Through this process, the dwelling and its immediate surroundings evolve beyond mere sites of shelter, becoming dynamic spaces of social, economic, and functional production.

However, these livelihood strategies cannot be understood in isolation from the broader host–displaced relationship. Examining the livelihood interdependencies between host communities and hosted families (IDPs) is essential for assessing the extent to which displaced households can move toward greater self-sufficiency. Humanitarian assistance, while critical for survival, does not typically elevate the living standards of IDPs above those of the local population, which in many contexts already lives well below

internationally recognized standards for displaced populations. As a result, support frameworks must be carefully adapted to local socio-economic conditions while remaining anchored in established international norms. As authors Corsellis and Vitale emphasize, minimizing social tensions and fostering constructive coexistence requires that humanitarian assistance be directed toward both host and displaced communities, thereby reinforcing shared resilience and mitigating inequalities that could otherwise undermine social cohesion (Corsellis & Vitale, 2005, p.79).

IDPs residing with host families and in collective centers often have the opportunities to work in livelihood activities, especially in urban areas where they may establish small business in street or local markets as street vendor. Such income-generating activities can contribute additional resources to their households, supplementing to the monthly 15 kilogram of wheat provided per household per month by World Food Programme (WFP), and may also enable host families to charge modest rent. These arrangements can create opportunities for both host and hosted families to share domestic work and support one another. However, they may also generate challenges, including increased competition for limited local resources, casual labor opportunities, and already overstretched public services.

In Tigray, humanitarian food assistance is primarily provided by the WFP in collaboration with implementing partners, including local non-governmental organizations such as the Relief Society of Tigray (REST) and international NGOs such as Samaritan's Purse (SP), CARE, World Vision (WV), and Food for the Hungry (FH). However, the delivery of food aid has frequently been disrupted due to access restrictions, security concerns, and logistical challenges. Prolonged conflict, coupled with blockades and sieges, has exacerbated food shortages, affecting both host and displaced populations.^{133,134} In response, WFP has called for free and unfettered access, with secure passage guaranteed by the warring parties, to ensure safe delivery of food assistance. Without such access, both IDPs and host communities continue to experience severe food insecurity.¹³⁵

International media outlets, including Al Jazeera and Deutsche Welle (DW), reported during the height of the crisis, on 1 June 2021, on the worsening food insecurity situation in Tigray.

A total of 5.2 million people in Ethiopia's war-hit Tigray region, or 91 percent of its population, need emergency food aid, the United Nations has warned. The warning by the UN's World Food Programme (WFP) came as it appealed for more than \$200m to scale up its response in the northern region where nearly seven months of fighting has caused an increase in already high hunger levels.^{136,137}

¹³³ World Food Programme. (2022, June 23). Conflict, climate and soaring food prices push Ethiopia further into hunger while WFP funding runs out.

¹³⁴ United Nations. (2022). *Report of the Secretary-General on Ethiopia*. United Nations.

¹³⁵ This is according to the World Food Programme. (2022). *Ethiopia Annual Country Report 2022*. WFP.

¹³⁶ <https://www.dw.com/en/ethiopia-un-warns-90-of-people-in-tigray-need-food-aid/a-57750470>

¹³⁷ <https://www.aljazeera.com/news/2021/6/1/more-than-90-percent-in-tigray-need-emergency-food-aid-un-says>

When providing humanitarian food assistance to both host and displaced households within a unified support framework, aid agencies should simultaneously promote income-generating opportunities for both groups as a strategy to reduce potential tensions over scarce resources. Integrating livelihood support into humanitarian programming can foster social cohesion and enhance self-reliance. Such initiatives may include engaging both host and displaced populations in shared income-generating activities, thereby mitigating perceptions of unequal assistance and competition. Evidence from urban displacement contexts and planned camp settings in Mekelle and Shire illustrates how IDPs actively pursue livelihood strategies to sustain their households. These efforts include small-scale street vending, home-based tailoring, petty trade, and short-term employment as incentive workers with humanitarian organizations. Such practices demonstrate the agency of displaced populations in adapting to new socio-economic environments despite structural constraints.

In broader refugee and displacement contexts across sub-Saharan Africa, livelihood interventions have been supported through civil society organizations (CSOs), international agencies, and government institutions. Programs promoting small-scale agriculture, livestock rearing, and petty commerce have been implemented in countries such as Kenya, Rwanda, Uganda, the United Republic of Tanzania, and Zambia (ILO & UNHCR, 2019; UNHCR, 2020). However, comparable livelihood assistance for IDPs in Tigray has been limited. This gap can be attributed to several factors, including the initial framing of internal displacement as temporary and emergency-based, political considerations at the local level, and assumptions regarding the likelihood of return to places of origin. As a result, structured livelihood programming has largely been confined to durable solutions initiatives targeting returnees rather than IDPs in protracted displacement in host communities, camps, collective centers and informal settlements. For example, in 2025 the IOM has implemented durable solutions and livelihood support programs in Eastern Tigray, primarily benefiting returnee and war affected populations. This disparity highlights the need to expand livelihood-oriented interventions beyond return frameworks to include IDPs who remain in displacement settings.¹³⁸

¹³⁸ In late 2024, the Government of Ethiopia, in collaboration with IOM, UNDP, and UNHCR, launched a national strategy on solutions pathways for IDPs. The strategy aims to transition from short-term humanitarian assistance to sustainable recovery interventions, encompassing livelihood support, enhanced economic opportunities, and social integration measures for both displaced and host communities. In Tigray, the Durable Solutions Working Group—led by UNHCR and co-led by IOM—developed detailed technical guidelines to coordinate these activities and promote the reintegration of displaced populations within their areas of origin.

Box-1: Livelihood strategies employed by IDP living in urban areas

Mr. Atsibha, an IDP from western Tigray, currently resides with his family of five at his brother's home in Keddamay Weyane sub-city, Mekelle. Prior to displacement, he worked as a local contractor in Humera, western Tigray, but lost all his assets during the outbreak of conflict in November 2020, forcing him to flee with no means of supporting his family. At present, he is attempting to reconstruct his livelihood by engaging in street vending at the Sunday market in Mekelle and producing handmade shoes using a tailor's sewing machine at home. Similar accounts are common among IDPs navigating urban settings, illustrating how various coping strategies influence their living conditions and contribute to the development of resilience.

In this context, functional self-production of space can be understood as the process by which individuals or communities autonomously create, reorganize, and adapt physical environments to address immediate survival and practical needs, particularly in situations where formal planning mechanisms are limited or absent. Within displacement contexts, IDPs establish diverse settlement patterns and spatial configurations that respond to critical livelihood demands, including employment opportunities, shelter provision, income generation, security, service access, and social interaction.

Beyond fulfilling basic housing needs, IDPs continuously modify and reinterpret available spaces to sustain adaptive livelihood strategies. For instance, residential plots are frequently utilized for backyard horticulture and small-scale poultry production to strengthen food security and supplement household income. Spatial transformation also occurs within and around shelters, where distinct areas are organized or constructed to accommodate activities such as cooking, storage, and communal engagement. Through these ongoing adjustments, space becomes a dynamic and functional resource, shaped by evolving economic, social, and survival imperatives.

Box-2: Employment opportunities offered to IDPs within camp environments.

Mr. Gebru Alemayehu is a 75-year-old IOM shelter incentive worker living in Seba Care 4 Internally Displaced Persons (IDP) site in Mekelle, Tigray Region in the northern part of Ethiopia. Due to the conflict that erupted in the region in November 2020, Gebru and his family of seven left their hometown and arrived at Ayder Elementary School. They were eventually relocated to Seba Care 4 IDP site where more than 12,000 people are currently residing.

"Life was not easy. I had to leave behind my home, belongings, and community. I had to start my life from scratch in a new and unfamiliar environment together with my family," Gebru shares.

In 2022, IOM Ethiopia's Shelter team established a team to construct dry masonry walls to strengthen the shelter structures in the camp. Gebru was one of the incentive workers hired by IOM.

Despite the challenges he faced, Gebru saw this opportunity as a chance to not only rebuild his own life but also contribute to the rebuilding of his community. He saw the construction of the masonry walls as a symbol of resilience and hope, a tangible step towards creating a safer and more stable environment for everyone affected by the displacement. Gebru was determined to give his best efforts, knowing that by doing so, he could inspire others to persevere and find strength in the face of adversity. Through IOM Ethiopia's Shelter programme, Gebru was able to earn an income and provide for his family, which was a huge relief for him. With his determination and hard work, Gebru was able to not only support his family financially but also regain a sense of purpose and stability in his life.

"Being an incentive worker has provided me with employment, but more importantly, it gave me hope for a brighter future," Gebru said.¹³⁹



Figure 69: Gebru was one of the incentive workers hired by IOM to support in strengthening shelters in the IDP site. (Source: IOM Ethiopia September, 2023)

¹³⁹ Sources: <https://ethiopia.iom.int/stories/rebuilding-homes-and-hopes-gebrus-story>

Chapter Two: Relief and recovery through Planned IDP camps

This chapter examines the genesis of planned IDP camps and the corresponding humanitarian responses, with particular attention to their interaction with host communities in peri-urban and urban contexts. It explores the increasing concentration of IDPs within urban host communities and discusses innovative response approaches developed to address these dynamics. Furthermore, the chapter analyzes the practical and conceptual challenges associated with contemporary humanitarian urbanism, highlighting the evolving relationship between camps and surrounding urban areas.

2.1. Humanitarian camp design and planning protocols

According to the *Guiding Principles on Internal Displacement*, issued by the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) in 1998, IDPs are entitled to adequate shelter and the right to live in conditions that ensure their safety and dignity wherever they settle (UNOCHA, 1998). One of the recognized settlement options for accommodating IDPs within humanitarian response frameworks is the planned camp setting.

Planned camps are purpose-built sites established on government-allocated land to accommodate displaced populations in an organized manner. These camps are designed to meet international standards by providing a comprehensive range of services and infrastructure, including food and non-food item distribution, shelter, healthcare, water, sanitation and hygiene (WASH), nutrition, protection, and education services. Planned camps may be situated in either urban or rural areas and are characterized by purposefully constructed shelters and the presence of a dedicated management team called site management agency (SMA).¹⁴⁰ The services provided—whether delivered by humanitarian agencies or integrated through existing municipal systems—are generally intended exclusively for the displaced populations residing within the camp.

Camps are typically established for IDPs only as last resort in humanitarian response, where many UN agencies and humanitarian actors generally prioritize integrated, community-based, or host-family solutions first. However, when humanitarian crises extend beyond the initial emergency phase or when displacement becomes prolonged, and earlier shelter options—such as tents, temporary structures, or accommodation

¹⁴⁰ Site Management Agencies (SMA) in refugee and IDP camps, operating under the Camp Coordination and Camp Management Cluster (CCCM), ensure safe, dignified, and well-organized living conditions by coordinating essential services, supporting community participation, managing site planning and infrastructure, and facilitating collaboration among humanitarian partners to avoid gaps and duplication in assistance.

within host communities— may become inadequate or unsustainable. These camps are designed to ensure coordinated delivery of essential services, protection, and infrastructure when alternative responses are unable to meet the needs of large displaced populations (Sphere Association, 2018; UNHCR, 2007). Although a substantial body of literature on camp design and planning exists, it predominantly focuses on refugee settings, often overlooking the needs of IDPs who remain within their countries of origin. However, IDPs require tailored planning approaches due to their distinct legal, social, cultural, and socio-political circumstances. By the end of 2024, IDPs accounted for approximately 60% (75.6 million) of all forcibly displaced persons worldwide, compared to refugees who represented about 35% (42.7 million) of the total 123.2 million forcibly displaced individuals (IDMC, 2024). Despite this significant disparity, most existing humanitarian camp design frameworks continue to draw primarily from refugee-focused models, revealing a notable gap in the field and underscoring the need for approaches that address the specific realities and requirements of IDPs.¹⁴¹ In practice, humanitarian organizations often apply standardized response frameworks—such as the UNHCR (2015) guidelines, the Sphere Standards (2018), and the Camp Management Toolkit (2015)—while attempting to adapt these tools to the local context (IOM et al., 2015; Sphere Association, 2018; UNHCR, 2015a).

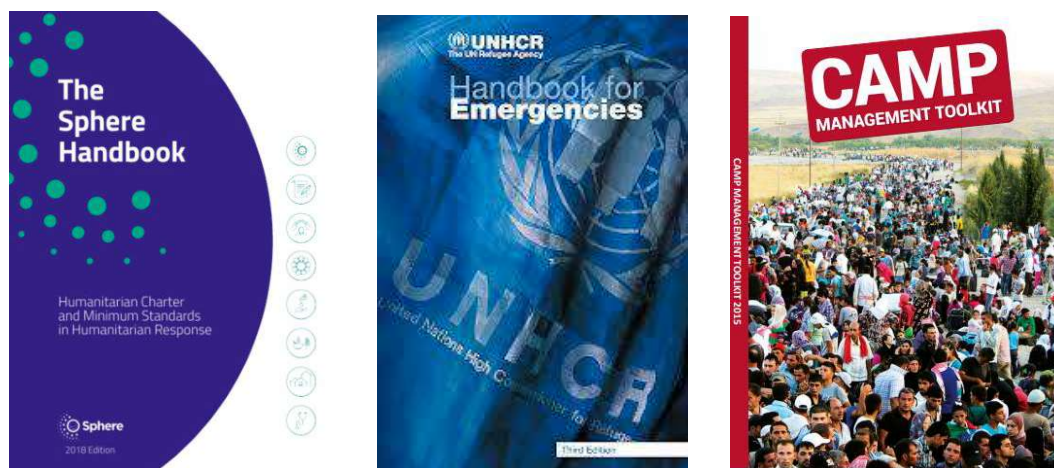


Figure 70: Standards and Principles for Humanitarian Camp Management

Camp operations for refugees and IDPs typically involve a few numbers of key actors responsible for management, coordination, and administrative functions. These actors operate within established procedures and protocols that guide how humanitarian spaces are planned, established, maintained, and eventually closed. From the initial setup phase to ongoing service delivery and the formal decommissioning

¹⁴¹ Refugee camps are generally established at a distance from international borders and active conflict zones to enhance civilian protection. Upon arrival in a host country, refugees typically pass through checkpoints and designated reception or transit centers, where they undergo screening, registration, and documentation procedures. Such formalized entry and processing mechanisms are not commonly applied in IDP camps, as internally displaced persons remain within their own country and jurisdiction.

process, camp management follows standardized frameworks designed to ensure accountability, protection, and the efficient delivery of assistance to displaced populations.¹⁴² These structured approaches play a critical role in safeguarding the rights and well-being of refugees while promoting coherent coordination among governmental authorities, UN agencies, and non-governmental organizations.

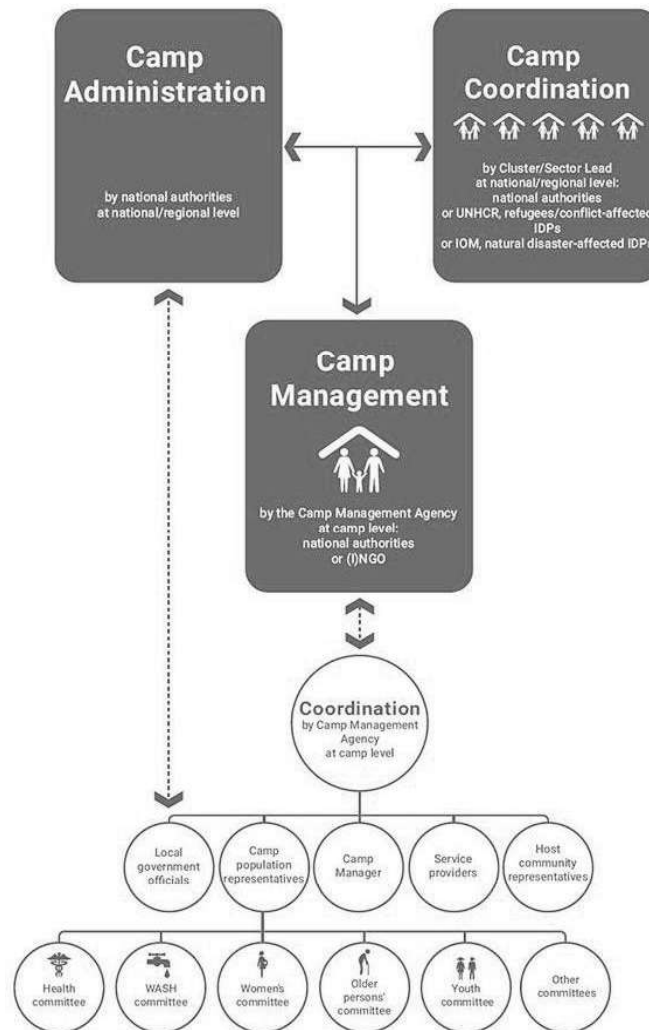


Figure 71: Camp coordination overview at national and site level (Source: Camp Management Toolkit)

Camp Coordination and Camp Management (CCCM) is a humanitarian framework that encompasses the functions of coordination, site-level management, and administration—often led by government authorities—to ensure effective service delivery, protection, and governance in displacement settings. It aims to create safe, dignified, and well-managed camp environments while promoting community participation and accountability among displaced populations.

¹⁴² *ibid*

Table 11: Camp responsible parties (Source: adopted by author from the UNHCR Handbook for Emergencies)

Actors	Responsibilities	Remark on the Ethiopian Operational Context
Government authorities	Camp administration (CA)	National and local authorities mainly provide supervision through the Disaster Risk Management Commission (DRMC).
UN agencies	Camp coordination (CC)	International organizations designated as IASC “cluster” leads include UNHCR for conflict-induced displacement and IOM for natural disaster-induced displacement. In Ethiopia, however, IOM leads the CCCM Cluster and co-coordinated by UNHCR.
Camp or site management agency (SMA)	Camp management (CM)	National or international NGOs are usually assigned to run day-to-day camp management activities. In some contexts, UN agencies may also serve as Site Management Agencies (SMAs), as in the Tigray context—for example, IOM operational units and UNHCR through implementing partners engaged in camp management.

The genesis and development of planned camps initiated by humanitarian agencies follow a life-cycle that typically comprises three overlapping phases: planning and set-up, care and maintenance, and closure. These phases are not strictly sequential; rather, they often coexist. In practice, it is common for a camp to experience elements of two stages simultaneously. For instance, a Camp Management Agency may, on one hand, respond to new arrivals by coordinating the establishment of services and protection activities—such as shelter provision, food and NFI distribution, and access to water—which are characteristic of the set-up phase. On the other hand, the same agency may concurrently monitor service gaps, address protection concerns, and oversee ongoing assistance for populations already residing in the camp, which falls within the care and maintenance phase. Consequently, the role and responsibilities of the Camp Management Agency evolve according to the specific phase of the camp’s life-cycle (IOM et al., 2015).

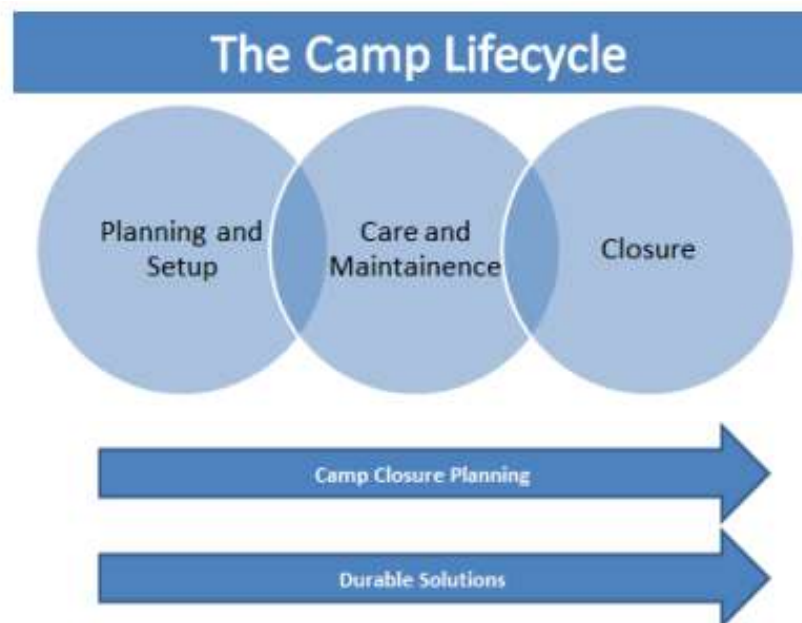


Figure 72: Camp lifecycle (Global CCCM Cluster, 2014a)

Camp design has changed from the traditional model of establishing long-term settlement (Cuny, 1977) to more temporary, and functional spaces that prioritize emergency shelter, sometimes characterized as ‘warehouse-like’ camps (Cuny, 1977; Ilcan & Rygiel, 2015). Jahre et al. (2018), in their study *Approaches to the Design of Refugee Camps: An Empirical Study in Kenya, Ethiopia, Greece, and Turkey*, highlight the evolution of camp design from traditional long-term settlements to more temporary, functional spaces (Jahre et al., 2018).¹⁴³ They propose an alternative, context-sensitive framework for camp planning that emphasizes adaptability, community integration, and the gradual evolution of camps over time. Their framework is structured around three key dimensions: physical layout and infrastructure, social organization, and functional services. It encourages planners to balance short-term emergency needs with long-term development goals, recognizing the trade-offs between temporary and semi-permanent solutions. A central tenet of their approach is *embeddedness*, advocating that camps should be designed in consideration of the local social, economic, and cultural context, and that displaced populations should actively participate in planning processes. This evolutionary and context-driven perspective challenges traditional one-size-fits-all models, aiming to create more sustainable, functional, and socially integrated camps that enhance the quality of life for displaced populations while promoting cohesion with host communities (Jahre et al., 2018).

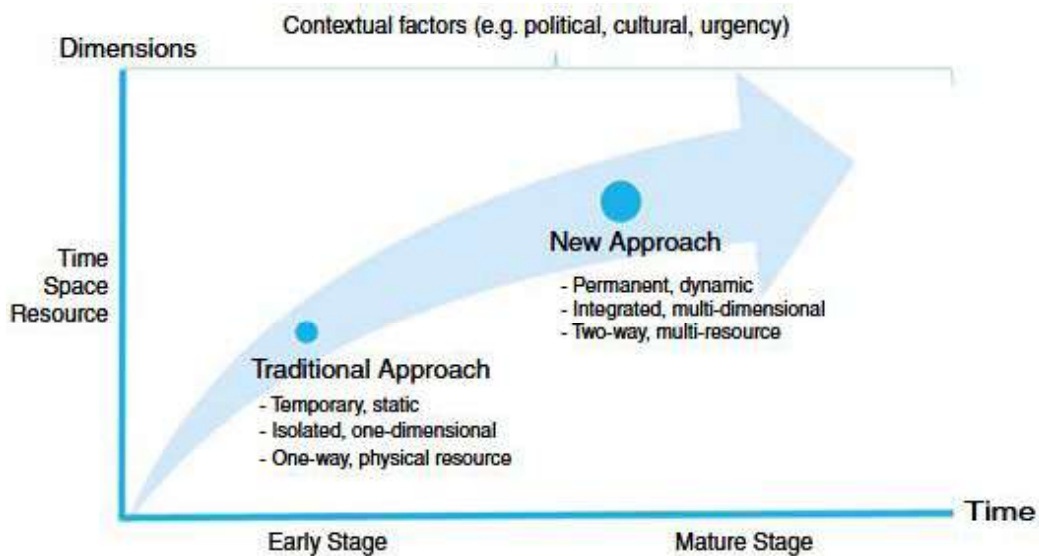


Figure 73: Evolutionary model of camp design (Jahre et al., 2018)

¹⁴³ It analyzes both traditional and contemporary approaches to camp design through the lenses of time, space, and resource dimensions, compares these models, and advances an alternative framework aimed at improving the effectiveness and contextual responsiveness of refugee camp planning.

In the aftermath of the 2020 Tigray war, planned settlements organized by humanitarian agencies have become a central component of the coordinated shelter and settlement response to displacements. Several significant planned camps have been established in various locations within or near major cities and towns. These camps are designed and managed in accordance with humanitarian standards and protocols, with site management agencies (SMA) and other humanitarian actors ensuring compliance. Based on field visits for empirical data collection and secondary data review, the planned camps identified include several sites, among which the largest are Sebacare 4 in Mekelle and Maidimu in Shire.

Table 12: Planned IDP camps in Tigray (Sources: 250217_ccencluster_masterlist)

SN	Name of the camp	Location	Zone	Woreda	Kebele	Camp opened date	Population (HH and individual)	Camp management agency	Remark
1.	Cambo Adi Daero	Adi Daero	North Western	Adi Daero	Zone 4	May 2024	217HH and 1159	IOM	
2.	UNMEE/Ex-UNMEE (Old Airport)	Adigrat	Eastern	Adigrat Town	Kebele 04	April 2022	314 HH with 1800 population capacity	IOM	Constructed in 2022 by CRS-ADCS
3	Adwa Industrial Zone (AIZ)	Adwa	Central	Adwa Town	Bet Yohannes	April 2022	487 HHs and 2,748 population	IOM	
4	Seba care 4 (SC4)	Mekelle	Mekelle special zone	Adi Haki Sub City	Debregenet	September 2021	20,000 population (planned)	IOM	
5.	Old Education Bureau	Maichew	Southern	Maichew Town	01	January 2024	128 HH and around 640	OSSH/UNHCR	Constructed in by support of IOM and IDP themselves it is use to relocated IDPs from schools.
6.	Adi Abay (Adebay)	Sheraro	North Western	Tahtay Adiyabo	Abi Adi	December 2022	2180HH and 7979	OSSH/UNHCR	
7.	Mai Dimu (Mai Dumu)	Shire	North Western	Tahtay Koraro	Mai Dimu	April 2024	20,000-25,000 population (planned)	IOM	
8.	Five Angels	Shire	North Western	Shire Endaslasi Town	04	June 2021	3,072 individuals	OSSH/UNHCR	

Distribution of planned IDP camps

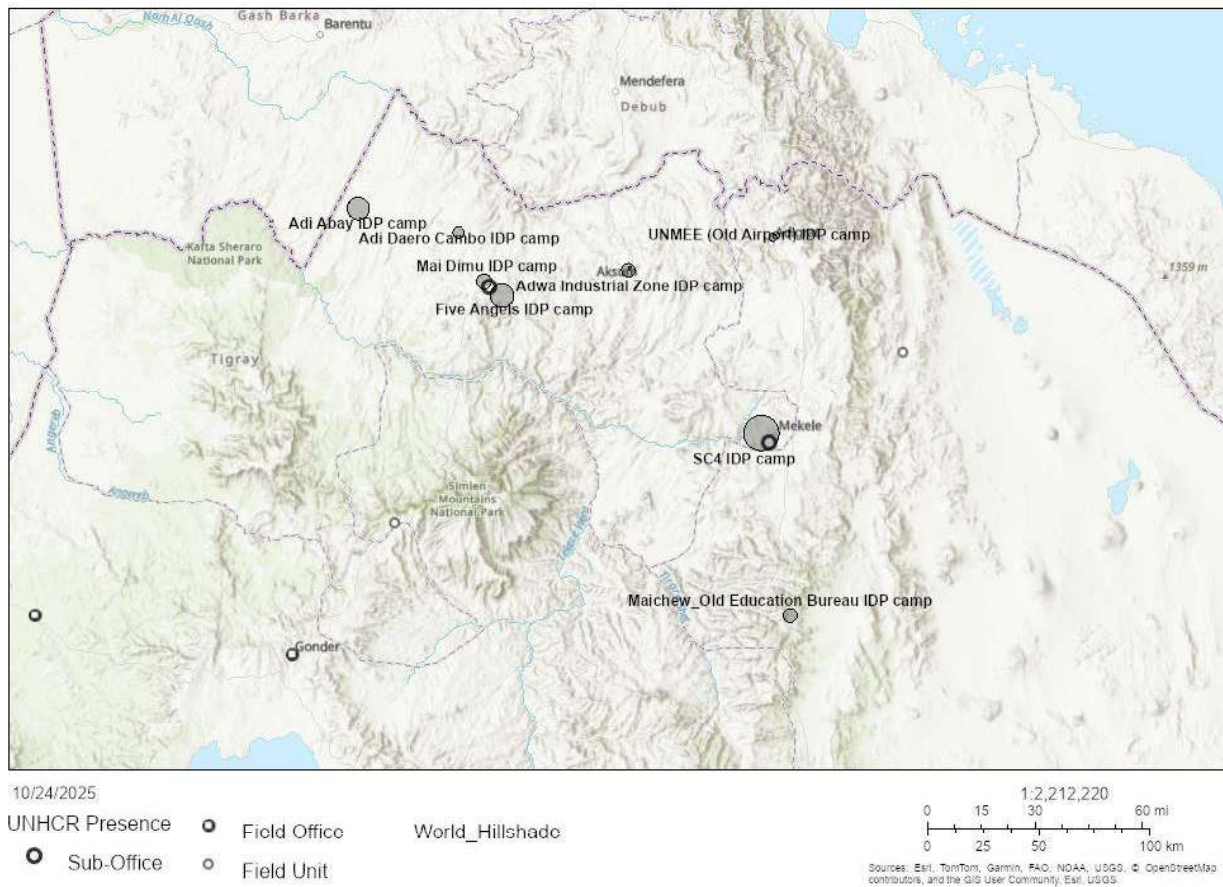


Figure 74: Distribution of planned IDP camps in Tigray (Source: author illustrated based on UNHCR open ArcGIS, 2025)

From refugee to IDP camp: Witnessing a shared space of displacement

Before the outbreak of the Tigray war in November 2020, there were four refugee camps in Tigray hosting approximately 95,929 Eritrean refugees: Hitsats, Shimelba, Adi-Harush and Mai-Aini. These camps established after increase numbers of Eritreans crossing the border following the end of the Ethiopia-Eritrea war 1998-2000.

Following the escalating of the recent Tigray war, the northern camps of Hitsats and Shimelba, located near the Eritrean border, were looted and completely destroyed between November 24 to January 27. During the field visit on May 2024, Shimelba camp appeared completely abandoned and ruins-like a ghost town. A significant number of refugees went missing, while others were relocated to southern camps, including Mai-Aini and Adi-Harush, near the Amhara regional border. Although these camps initially remained intact, the intensification of hostilities triggered further displacement. According to field observations conducted by the author during a site visit in May 2024 and corroborated through discussions with host community members and humanitarian partners, the degradation of refugee camp infrastructure was attributable not

only to conflict-related damage but also to the reported looting of construction materials, including CGI roofing sheets, timber structural components, and hollow concrete blocks. By June 2021, many refugees were moved to Alem-Wach refugee camp in Dabat town, located in the neighboring Amhara region (UNHCR, 2021b).



Figure 75: Location of the four Eritrean refugee camps in Tigray before November 2020¹⁴⁴

Establishing IDP camps poses significant challenges, particularly due to the unavailability of land in urban and semi-urban areas and the lengthy process required to equip the sites with essential services and infrastructure.¹⁴⁵ In some exceptional cases, however, existing facilities have been repurposed to accommodate displaced population after proposer decommissioning. In case of Hitsats refugee camp, following the abandonment and damage, the site rehabilitated through re-roofing and minor repairs to damaged shelters made of Hollow Concrete Block (HCB), enabling it to host 450 households (around 2,250 individuals).¹⁴⁶ Besides the Hitsats refugee camp, the TWiG¹⁴⁷ of the ESNFI sub-national cluster reviewed also the security and

¹⁴⁴ <https://www.hrw.org/news/2021/09/16/ethiopia-eritrean-refugees-targeted-tigray>

¹⁴⁵ Most IDP camps in Tigray are located in urban or peri-urban areas, while the region's four refugee camps are generally situated in more remote locations with lower surrounding population density, with the exception of Adi Harush refugee camp, which is located near the town of May Tsebri.

¹⁴⁶ A portion of internally displaced households received emergency shelter assistance through the rehabilitation of damaged and abandoned refugee shelters by humanitarian partners; however, the overall number of IDPs remains substantial, leaving many without adequate and sustained support.

¹⁴⁷ TWiG members are drawn from shelter cluster partners and may include individuals with specialized technical expertise who are engaged on an ad hoc basis to address specific issues.

accessibility of the potential of Shimelba refugee camp to be consider as IDP camp option. This is a revealed a typical example of a forced transition from refugee to IDP camp.

Table 13: Refugee camps in Tigray prior to the outbreak of the war (Source: Human Rights Watch ,2021)¹⁴⁸

Refugee camp	Estimated refugees' population before war	Current physical condition and existing IDP
Hitsats	25,248	Fully destroyed and looted currently host 2,416 households (8,151 IDPs), including Hitsats town and the site managed by OSSHD/UNHCR.
Shimelba	8,702	Fully destroyed and looted insignificant number of IDPs
Mai-Aini	21,682	Fully destroyed and looted which currently 973 individual IDPs, and the site managed by IOM
Adi-Harush	32,167	Fully destroyed and looted currently host 4,210 households IDPs, and the site managed by IOM

Both the Mai-Aini and Adi-Harush refugee camps constructed by mud block and HCB, severely damaged and extensively looted during the conflict, leaving only isolated standing walls visible to anyone passing through. Despite this destruction, IDPs continue to occupy the area, using makeshift shelters for accommodation. Consequently, although the facilities have deteriorated and their original function has shifted, the sites remain operational as camps—albeit with their status effectively transformed from refugee camps to IDP settlements. The Adi-Harush IDP site currently hosts approximately 3,030 households (around 15,150 individuals) and is managed by IOM. Humanitarian services remain limited, with WASH support provided by MCMDO, food assistance delivered by FH, and protection services jointly implemented by NMWEO and FH.^{149,150}

Although the former Hitsats refugee camp, largely destroyed during the conflict, is currently being used to shelter IDPs, primarily from Western Tigray, living conditions remain extremely precarious. The displaced population faces acute food insecurity, widespread hunger, and severely limited access to essential healthcare services, with reported fatalities attributed to inadequate food provision and insufficient medical support. The situation has further deteriorated following reductions in humanitarian assistance funding, disproportionately affecting vulnerable groups—including older persons, women, large households, unaccompanied children, and female-headed households—and, since July 2025, more than 50 IDPs have reportedly died, underscoring the severity of the crisis and the urgent need for sustained humanitarian intervention.

¹⁴⁸ Human Rights Watch [HRW]. (2021). Ethiopia: Eritrean refugees targeted in Tigray.

<https://www.hrw.org/news/2021/09/16/ethiopia-eritrean-refugees-targeted-tigray>

¹⁴⁹ Data sourced from the CCCM Cluster Service Monitoring Dashboard, updated on April 30, 2025.

https://www.cccmcluster.org/sites/default/files/2025-05/OverallAnalysis_SM_April_2025_Tigray.pdf

¹⁵⁰ MCMDO (Mothers and Children Multisectoral Development Organization) and NMWEO (New Millennium Women Empowerment Organization) are local Ethiopian NGOs, while FH (Food for the Hungry) is an international NGO.



Destruction of Residential Structures Across Settlement Zones in Hitsats Refugee Camp, Ethiopia



Figure 76: Hitsats Refugee Camp after destruction of humanitarian facilities and infrastructures and shelters¹⁵¹

¹⁵¹ <https://www.hrw.org/news/2021/09/16/ethiopia-critrean-refugees-targeted-tigray>



Figure 77: Shimelba refugee camp (Source: various media outlets)

During the field visit to the four refugee camps, extensive destruction was observed, with many areas resembling ghost towns. The scale and nature of the damage can be characterized as urbicide, reflecting the near-total destruction of the built environment and the disruption of urban functionality. In some cases, host community members repurposed the camps as sources of construction materials, salvaging industrial building components for use in their own housing. Despite this, the physical footprint of the camps remains, and they continue to host IDPs in varying numbers. Nevertheless, many residents recall the once vibrant conditions of these sites when they functioned as active refugee camps for Eritrean populations.



Figure 78: A general view shows Mai Aini Eritrean Refugee camp near Mai Tseberi town, June 26 2021¹⁵²



Figure 79: Children playing in the streets of Adi Harush refugee camp before the outbreak of the war¹⁵³

This section focuses on the two largest planned IDP camps in Tigray—Seba Care 4 in Mekelle and Mai Dimu in Shire—analyzing their development and transformation across the camp lifecycle through a future scenario-based approach. It examines the spatial, social, and economic interactions between these camps and their surrounding host communities, particularly in peri-urban areas, using a comparative case-study approach. Situated within the framework of humanitarian urbanism, the analysis explores how spatial

¹⁵² <https://www.voanews.com/a/report-eritrean-refugees-relocated-from-addis-ababa-to-dangerous-area/6663427.html>

¹⁵³ <https://www.unhcr.org/news/briefing-notes/unhcr-finds-dire-need-eritrean-refugee-camps-cut-tigray-conflict>

practices and governance structures evolve—from the initial establishment of the camps and the provision of services, including assistance and protection, to the development of administrative and management systems, and the emergence of diverse forms of engagement and interdependence between camp populations and neighboring host communities.

2.2. Seba Care 4 IDP camp (Mekelle)

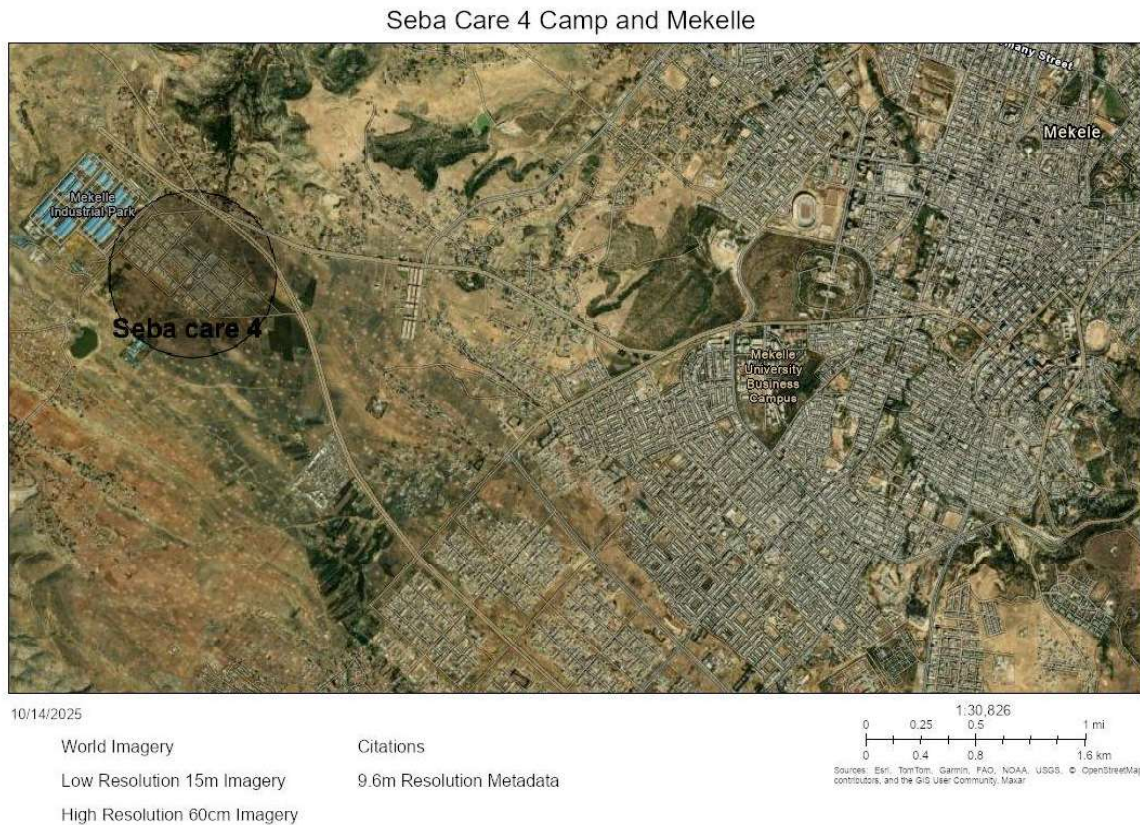


Figure 80: Seba Care 4 IDP camp, Mekelle (Source: author, based on UNHCR open ArcGIS, 2025)

The Seba Care 4 IDP camp was examined through the author’s sustained engagement with the site, encompassing daily interactions with IDP residents, humanitarian partners, and IDP leadership structures. Data collection was conducted longitudinally, involving repeated visits over several years, and employed multiple methods, including direct observation, focus group discussions (FGDs), family storytelling, photographs, and video recordings. Unless otherwise specified, all visual documentation was captured by the researcher. This continuous follow-up enabled the monitoring of recent developments and emerging changes within the site. Collected information was systematically categorized according to the different humanitarian service sectors.

2.2.1. Settlement and growth

In Tigray, many IDPs initially sought refuge in host communities, collective centers, religious institutions, and open public spaces, especially in larger urban areas such as Mekelle. These early arrangements were often inadequate, raising serious protection concerns. Over time, a growing number of IDPs have concentrated in major urban centers and nearby peri-urban areas, including Mekelle and other key towns. Although humanitarian agencies generally view the creation of formal camps as a last-resort measure after prolonged displacement, high numbers of arrivals often lead the government to favor camp-based solutions. Camps help alleviate pressure on urban settlements, enhance safety and protection, and facilitate more efficient humanitarian assistance.

In September 2021, amid intensifying conflict and a growing influx of IDPs arrivals, humanitarian partners, in collaboration with the Ethiopian federal government and the Tigray interim administration¹⁵⁴, established the Seba Care 4 (SC4) planned camp on the outskirts of Mekelle, within the city's administrative boundaries. The camp began receiving IDPs for the first time shortly after its set up and establishment. It was developed over a four-month period on land owned jointly by the local government and the people.¹⁵⁵ The local government is also responsible for providing security within the camp and its surrounding vicinity. The settlement was initially constructed in accordance with the proposed site plan prepared by IOM CCCM unit, covering 49.5 hectares. Over time, the camp's occupancy has gradually declined; however, most of the original shelter structures remain intact, as supported by ongoing routine and periodic repair and maintenance.¹⁵⁶

Seba Care 4 (SC4) camp is located in Mekelle city, Adihaki sub-city, specifically in Debregenet *kebele (tabia)*, near the Mekelle industrial park premises.¹⁵⁷ Debregenet *kebele (tabia)* has four *sub-kebeles (kushet)* namely Mayemuri, Mayweyni, Serawat and Gefihgerb. Mayemuri (near *kokolo* area) is the center of the four *sub-kebele*. The camp's name, SC4, derives from a nearby mass housing project called Sebacare ("seventy square meters"), and the 'four' representing the fourth alternative site that met the selection

¹⁵⁴ The Tigray Region has undergone several governance changes since the war, including a transitional government, a command post, and an interim administration.

¹⁵⁵ In Ethiopia, land is owned jointly by the state and the people, rather than by private individuals, as stipulated in the 1995 Constitution of the Federal Democratic Republic of Ethiopia (FDRE).

¹⁵⁶ Beginning in early 2025, reductions in funding from major donors, including USAID, significantly limited the capacity of shelter partners to carry out routine and periodic maintenance of shelters. Additionally, due to the same financial constraints, the IOM CCCM unit handed over camp management to a local organization by the end of 2025.

¹⁵⁷ Mekelle is divided into seven sub-cities and has a generally warm climate throughout the year, characterized by a frequently overcast wet season and a partly cloudy dry season. Temperatures typically range between 47°F and 84°F, rarely dropping below 42°F or exceeding 88°F. Although the 2016 Master Plan designates the proposed SC4 camp site for industrial use, the area is located adjacent to the existing 75-hectare Mekelle Industrial Park, which currently comprises 15 sheds and specializes in textile and apparel production.

criteria for camp construction. The camp was built on agricultural land previously used for crop cultivation by local farmers and surrounding communities.

The camp is linked to the city by a main asphalt highway, providing easy accessibility, and benefits from infrastructure and services due to its location within the city's administrative boundaries. Its settlement patterns and development have evolved over time in response to population changes and the availability of funding for camp operations. At present, the condition and expansion of shelters are influenced not only by the activities of IDPs and humanitarian partners but also by encroaching construction in nearby open spaces by private investors, driven by municipal industrial development initiatives. Together, these factors shape the camp's growth and spatial dynamics.



Source: Mekelle Google Map and administrative boundaries (Sub-cities)

Figure 81: Mekelle and its seven-sub cities (Patassini D et al., 2024)



Figure 82: Main gate of SC4 IDP camp, Adihaki sub-city, Mekelle, Tigray (Source: author 2023)

2.2.2. Layout and demographic profile

The camp was originally designed to accommodate more than 3,450 households, equivalent to an estimated population of about 20,000 people. However, IOM CCCM data from March 2022 indicated that 14,896 IDPs, or 3,340 households, were residing in the camp. These households were distributed across 14 zones (A–N) with varying population densities. The camp settlement is structured hierarchically, organized into zones, blocks, and shelters/households, including both communal and individual units. At the zone level, the number of households ranged from 392 in Zone L to 85 in Zone I, with an average of approximately 246 households per zone. By the following year, the population had only slightly decreased, remaining just above 12,000 individuals.¹⁵⁸

According to the CCCM Cluster service monitoring camp profile (July 2023), the official population was 7,746 individuals (3,833 males and 3,913 females) across 1,877 households, including 1,841 children under the age of five (CCCM cluster, July 2023).¹⁵⁹ By December 2024, the camp recorded 720 persons with disabilities, comprising 459 females and 270 males. These individuals were organized into disability committees that collaborated with site management agencies (SMA) and humanitarian partners to improve their well-being and ensure their inclusion in camp activities.

¹⁵⁸ The decline in population is primarily attributed to the suspension of food distribution, the deteriorating condition of shelters due to inadequate maintenance, limited livelihood opportunities, and an overall reduction in service delivery. Consequently, many residents have opted to relocate and live within host communities.

¹⁵⁹ CCCM cluster Ethiopia, service monitoring camp profile July 2023.

Table 14: Population by age and gender of the camp (Source: CCCM cluster Ethiopia, service monitoring camp profile July 2023)

Population by age and gender		
Age group	Male	Female
60+	301	275
18-59	840	1007
12-17	629	560
5-11	1,174	1,119
0-4	889	952
Total	3,833	3,913

The average household population size is slightly more than four and half and approximately five. The gross density of the camp is 64- square meters per individual, greater than the benchmark standard which is 45- square meters per person.¹⁶⁰ This gross density includes space for roads and footpaths, external or communal cooking areas, education and recreation spaces, healthcare facilities, sanitation, firebreaks, administrative functions, water storage, site drainage, religious facilities, food distribution areas, markets, storage and limited kitchen gardens for individual households (excluding significant agricultural activities, horticulture or livestock).¹⁶¹ Where communal services can be provided by existing or additional facilities outside the planned settlement, the minimum surface area could decrease to 30 square meters per person (Sphere, 2018).¹⁶² Although the proposed population of 20,000 and the site area of 49.5 hectares do not fully meet the recommended standards, the actual population has been lower than anticipated. Consequently, the available surface area per person falls approximately within the recommended range, thereby complying with the standard.

At a first glance, it seems that the camp (location, size, lay-out, infrastructural frame and alike) has been designed and planned considering the influx of population and its dynamic changes as stated in Sphere Handbook 2018 (Sphere, 2018). Yet, if we look at the physical and functional adaptation of shelters and open spaces by the households the conceptual and operational meaning of ‘standard’ radically changes, asking for a substantial updating of available manuals as well as of design, planning and management approaches. Households’ incremental and mass change activities do provide useful inputs and cannot be flattened to a meaningless informality.

¹⁶⁰ The Sphere Handbook (2018) recommends 45 square meters of surface area per person in camp-type settlements, and a minimum of 30 square meters per person where communal services are provided outside the settlement.

¹⁶¹ In practice, because the site lies within the city’s administrative boundaries and has access to shared communal facilities, it does not contain religious facilities or marketplaces within the camp itself.

¹⁶² Based on the The Sphere Handbook and United Nations High Commissioner for Refugees (2019), Principles and Standards for Settlement Planning: Site Planning Guidance.

The camp population primarily originates from remote and hard-to-reach areas affected by the conflict, particularly from western Tigray. Many IDPs arrived at this final destination only after long, repeated, and dangerous journeys through active war zones. Upon arrival, they settled in dispersed locations within the host community, collective sites, makeshift shelters, and even in open areas such as church and mosque compounds. A distinctive feature of this camp is that it also hosts IDPs from outside the Tigray region, especially from the neighboring Afar region. Additionally, some individuals from western Tigray initially fled to Sudan as refugees and, after several years, returned to Tigray where they now live as IDPs—effectively experiencing “dual status.”¹⁶³

The camp’s population has been gradually declining due to multiple contributing factors. Meanwhile, the relationship between camp residents and the host community has strengthened, supported by shared cultural, religious, and linguistic backgrounds.¹⁶⁴ Because the camp was not designed with its own religious facilities or burial grounds, residents depend on nearby churches within the host community for worship, funerals, and burials. This reliance has further deepened interaction and social integration between IDPs and host community members.

2.2.3. Facilities, services and infrastructures

IDPs in the camp benefit from different types of humanitarian services provided by both international and local agencies. To increase social cohesion and integration, even members of host communities are also supported becoming *de facto* stockholders of the overall management model. The provision of services to both IDPs and host communities significantly shapes patterns of interaction and influences the camp’s development in relation to its surrounding areas. The services provided encompass essential basic needs and core sectors—such as water, shelter, health care, nutrition, education, and food and non-food items—required to uphold human dignity and ensure survival.

¹⁶³ The evidence is based on day-to-day discussions with camp residents who had returned from Sudan.

¹⁶⁴ Unlike refugees, IDPs remain within their country of origin and are therefore generally expected to share similar cultural and socio-linguistic backgrounds with the host communities.



Figure 83: Sources and partners of humanitarian service delivery system (Sds)¹⁶⁵ (Source: author 2023)

An overview of humanitarian service provision in Seba Care 4 (SC4) camp can be categorized according to the type of services delivered and the involvement of different humanitarian agencies. These organizations provide assistance based on their available funding or donations, as well as their institutional experience, staffing capacity, and areas of specialization.

¹⁶⁵ In displacement camps, the service delivery system (Sds) is the integrated framework of institutions, infrastructure, and coordination mechanisms through which essential services are provided to affected populations, ensuring equitable access and effective management of resources.

Table 15: Humanitarian services and responsible agencies (Source: IOM, 2023)

Camp Management Agency		IOM-Ethiopia
Camp administration		Adihaki sub-city
Site name		Sebacare 4 (SC4)
Current population		12,000 +
SN	Humanitarian services	Providing agency
1.	WASH	IOM, OXFAM, LWF
2.	Shelter	IOM, UNHCR, SP
3.	ESNFI	IOM, UNHCR, ICRC
4.	Health	IOM, MAEDOT
5.	Food	BOSEGE, SP
6.	Nutrition	World Vision Ethiopia
7.	Education	Save the children, DOC, Heart of humanity
8.	Protection	
	8.1. Desk	IOM, IHS
	8.2. Child protection	Save the Children International
	8.3. WGSS and GBV	FH, OSSHD and Imagine 1 Day, World Vision Ethiopia
	8.4. Legal Aid	Ethiopian Evangelical Church Mekane Yesus (EECMY)
9.	Family link restoration	ICRC
10.	MHPSS	IOM

Emergency shelter

Two main shelter types of differing dimensions are present in the camp: communal shelters measuring 4 m × 5 m or arranged in blocks of 25 m × 8 m, and single shelters measuring around 3.5 m × 5 m. The variation in shelter size reflects the preferences and design approaches of different implementing partners and donors. These dimensions are also informed by Sphere Standards, which recommend a minimum of 3.5 m² of covered living space per person, as well as considerations related to average household size and local microclimatic conditions. All the camp emergency shelters are constructed using tarpaulin (plastic sheet) and poles, and expected to stay for six months, at most. Yet, shelters are now serving for more than four years with routine and periodic maintenance.¹⁶⁶ Maintenance guaranteed by shelter partners like IOM, UNHCR (with its implementing partners local and international NGOs such as ANE, DPO and DEC, INGO mainly ZOA) and SP (Samaritan's Purse).¹⁶⁷ The tarpaulin (plastic sheet) shelter response for the camp is not suitable for both rainy and sunny seasons and are highly susceptible to flooding, a situation further exacerbated by poor site treatment. The summer months over the past four years, particularly from June to August, have been especially challenging for the camp's residents. Heavy rains frequently caused flooding

¹⁶⁶ The IOM Shelter Unit operates a comprehensive shelter maintenance system, which includes weekly tally recording and map generation to track shelters requiring maintenance or repair. All relevant information is systematically documented in both the tally records and the corresponding maps to ensure accurate monitoring and timely interventions.

¹⁶⁷ Local NGO such as Action for the needy (ANE), Development for Peace Organization (DPO) and Development Expertise center (DEC).

in the shelters, prompting families to relocate temporarily to relatives' homes or to vacant shelters, as residents feared that the floods could lead to various diseases.

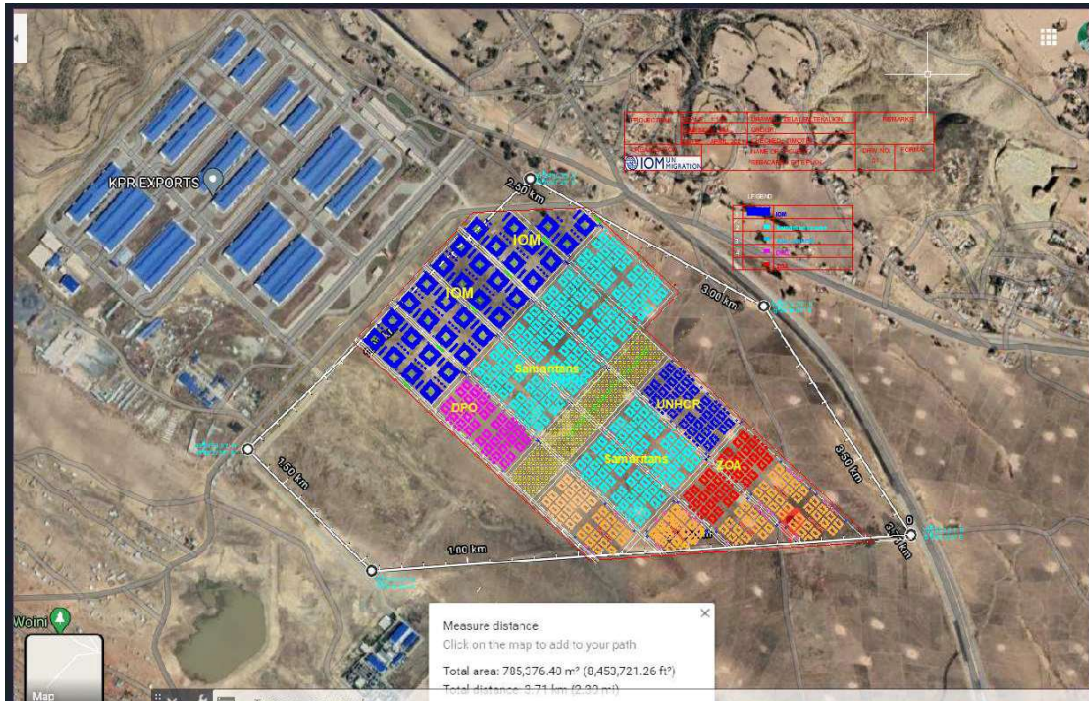


Figure 84: SC 4 planned camp and initial design (Source: IOM Ethiopia CCCM operations,2023)

The number of shelters initially planned and built were 3537. Two are the typologies: the communal shelter which consists of a cluster of 10 units and a single unit shelter which cluster of six units towards an inner common space. Two are the typologies of single shelter: shade and open gabled roof style. In general, the shelters are found across the 14 zones from A to N. Each zone has number of blocks with multi streets and blocks with a number of shelters. The communal shelter gable roof structure with five units in two bays and IOM initially constructed more than 1300 shelter units from zone A-E, DPO 160 shelters and ZOA 200 shelters with a radial organizational pattern of four blocks: communal space at the center used as back yard. Another spatial organization is cluster type with six single shelter unit face towards a communal open space or yard that includes from zone F to N.

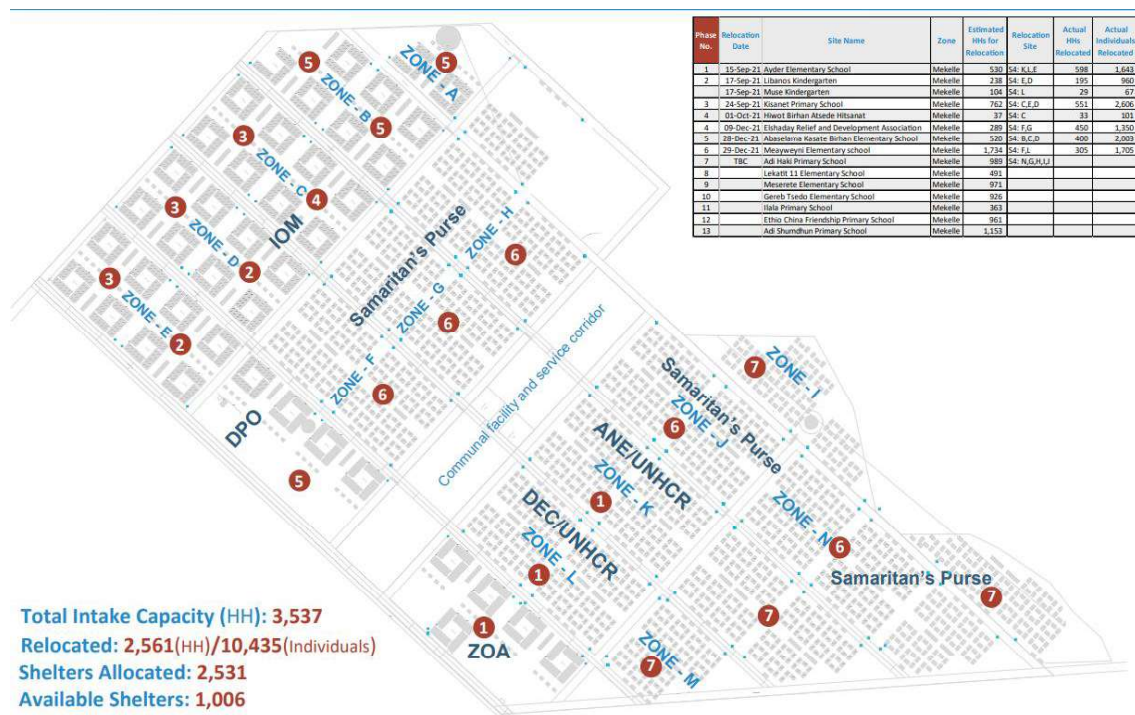


Figure 85: Shelters and humanitarian agencies in the camp (IOM Ethiopia, 2021)

Emergency shelters in the camp follow a standard design, using tarpaulin (plastic sheet) as envelope and poles as structural elements. However, SC4 shelters are vulnerable to theft and misuse, with poles removed for firewood and plastic sheets sold outside the camp, reflecting negative coping strategies. In March 2023 alone one block with 10 shelters has dismantled and looted by IDPs themselves, as reported to site management humanitarian agency and a lot of shelters remain unoccupied, creating a serious security concern in the camp.



Figure 86: Communal shelter non-operational due to looting and vandalism (Source: author 2023)

Alterations in shelter and land use, including conversion for commercial or recreational purposes, are common, particularly near main roads resulted blossoming of coffee and tea shops. Unlike other emergency shelters, which commonly use plastic sheet for shelter construction and maintenance, dry stone wall used as shelter strengthen or reinforcement element after the initial shelter erected.¹⁶⁸That’s happening in the

¹⁶⁸ Dry stone construction is a typical technique in rural houses of Tigray and is often integrated with the *hidmo* structure, mainly used for fences.

communal shelters constructed and maintained by IOM with the aim of increasing the life cycle of plastic sheet, protecting settlers from wind, sand and wild animal (mainly hyenas).¹⁶⁹ These changes of land use into commercial activities driven by increasing number of IDPs living in host communities, increase of structurally damaged stock, income-generating needs, and lack of allotted space for commercial and market areas. It's worth saying that commercial and private service activities are all forbidden because not considered linked to emergency, so creating a structural and hopeless dependency from external aid. The change of the use of shelter stock and related land is negatively assessed by the concerned agencies.

To face the challenges, the camp management agency (CCCM-IOM) in tandem with Adi-Haki sub-city Bureau of Labour and Social Affairs (BoLSA) has endorsed a shelter policy¹⁷⁰ in 2022 focusing on shelter utilization and its occupancy status determination. Nevertheless, the camp continues to be managed as an emergency settlement, with no life of its own, with IDPs as passive aid recipients.



Figure 87: Shelter typology (Source: author 2023)

Living in tarpaulin-based emergency shelters poses multiple challenges for IDPs. These include limited privacy, especially in communal shelter blocks, and increased risks of theft, flooding, and general safety and security concerns. Exposure to rain, intense sunlight, and strong winds further reduces the shelters' effectiveness. Additionally, cooking with firewood or charcoal can lead to indoor air pollution, fire hazards, and health risks. In some contexts, shelters may also be vulnerable to intrusion or attacks by wild animals, such as hyenas, further heightening the residents' vulnerability and compromising their overall well-being.

¹⁶⁹ On September 23, 2025, local media outlets, including Tigray Television, reported that a two-year-old child was killed by a hyena inside the SC4 camp. According to camp residents, hyenas have repeatedly broken into the plastic shelters, typically taking chickens. However, this time, the attack tragically claimed the life of a child. Another hyena attack occurred on October 17, 2025, around 7:20 PM, injured a nine-year-old girl. The incident happened when she attempted to defecate in the open near her shelter, accompanied by her mother. She was rescued by fellow camp dwellers who intervened in time. On December 18, 2025, a hyena easily broke into an old plastic-sheet shelter in the camp. With the assistance of local youth and security personnel, the animal was ultimately killed by the IDPs.

¹⁷⁰ Shelter policy has prepared by CCCM unit of IOM and approved in discussion with adi haki sub city administration and Shelter unit from IOM and other humanitarian partners.



Figure 88: Traditional cooking in emergency shelters (Source: author 2024)

The IOM Shelter Unit has established a robust shelter maintenance and repair system that could serve as a model of best practice for other camps. The system involves conducting shelter status assessments with the support of incentive workers, followed by the preparation of Excel tallies and site plan sketches to document the extent of damage as well as repaired shelter for each zone. Based on these assessments, a Bill of Quantities (BoQ) is developed for tarpaulin sheltering, and necessary dry wall masonry work is identified for reinforcement and recorded according to the level of damage. All shelter information—including status, maintenance, repairs, and completed works—is systematically documented in a series of maps and Excel files for weekly reporting and submitted to the program office through the KOBO Collect tool.¹⁷¹

¹⁷¹ KOBO Collect is a free and open-source tool used for digital data collection, especially in humanitarian research, surveys, and field assessments. Source information for this analysis was derived from the IOM Shelter Unit and Shelter Cluster Damage and Repair Assessment Template, supplemented by insights gathered through expert interviews.



Figure 89: Shelter damage and maintenance tracking maps in different timeline in IOM shelter Zone A-E (Source: IOM reports)¹⁷²

Water, sewerage and sanitation (WASH)

Among the various essential needs of IDPs in the camp, the provision of safe and accessible drinking water remains the highest priority for WASH partners. Although water trucking was reintroduced as an immediate emergency measure, severe challenges—including limited access to fuel and cash—have made this method increasingly unsustainable.¹⁷³ As a result, IDPs have periodically gone without safe water for extended periods, sometimes ranging from 10 to 15 days each month. To address these recurring gaps, IOM and LWF, as a key WASH partners, have initiated a three-phase construction approach aimed at establishing more reliable and sustainable water supply systems.

¹⁷² Report from IOM Ethiopia shelter unit 2022-23.

¹⁷³ Given the high costs associated with water trucking, the limited availability of fuel and cash during emergency phases, as well as access constraints caused by blockades and siege conditions, it is imperative to identify alternative water supply options for IDPs. Such systems should require minimal financial investment, operate without fuel dependency, and ensure long-term functionality with low operational costs.

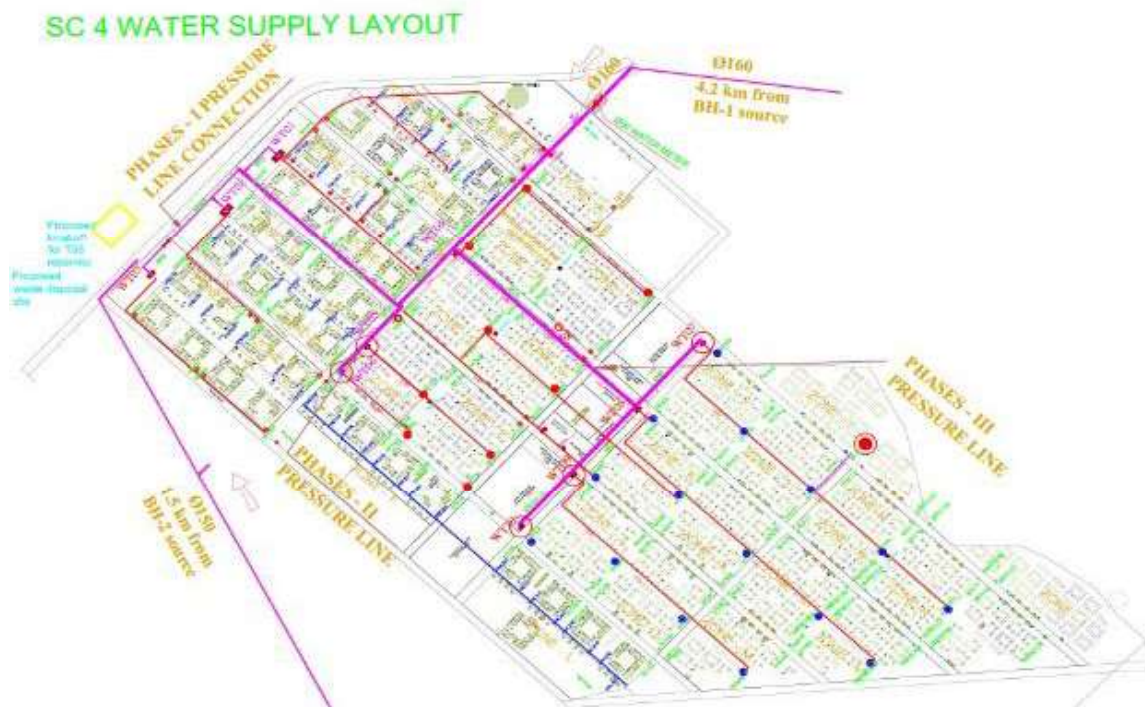


Figure 90: The camp water supply layout (Source: IOM WASH, 2023)

The SC4 camp site is directly connected to the high-pressure, high-volume municipal water line, and an alternative borehole system is available to provide ample discharge of water supply. Unlike other collective centers in Mekelle, which rely on water trucking for their daily water provision, SC4 has two boreholes—BH1 and BH2—supplying water to the camp. The BH1 pipeline constructed by IOM has a diameter of 160 mm, and it is 4.2 km away from the camp with 30lit/sec yield capacity.¹⁷⁴ The water delivered through the 41 water points and 46 hand washing stations to the camp (plan to accommodate more than 20,700 people). The BH-2 water source planned and managed by LWF, encompassing the development of a new borehole, the installation of electro-mechanical equipment, and the connection of the riser main pipeline to the camp’s service reservoir. The BH-2 borehole has an estimated discharge capacity of 5.5 liters per second, contributing significantly to the camp’s overall water supply system.

Electricity is a main source of power for pumping, but, since July 2024, an alternative solar (PV) power supply has connected by IOM. That makes the water system more sustainable and environmentally friendly. IOM WASH unit is the responsible partner for WASH (water, sanitation, and hygiene) in the camp. It has originally constructed the water line within the whole camps connecting it to the existing high-pressure line and BH1. IOM, CRS, Oxfam, FH, LWF and FHI360 are also responsible for WASH. On its side,

¹⁷⁴ In addition to supplying water, IOM trained and hired water quality incentive workers to monitor Free Residual Chlorine (FRC) levels at water points and points of collection (POC), ensuring that the water provided meets WHO standards for safety and quality.

Oxfam/LWF constructed a 90 m³ elevated pioneer reservoir (T95), connected with 10 cubic meter plastic reservoir to each zone, then distributed to 25 water points. The settlers collect water from communal water points with steel water taps and HDPE (plastic) pipes. The daily water demand of the camp is 160 m³ according to the Sphere standard (Sphere, 2018), a quantity enough to meet the daily demand for the time being, accounting also for a small number of losses.



Figure 91: Elevated water reservoir (Source: author 2023)

Temporary and semi-permanent type communal latrines and showers are constructed separately by IOM, FH, FHI360, Oxfam partners. They are located along a service corridor of the site plan. Overall, around 293 latrine stances and 324 cubicles of shower are available. That makes 26 persons per latrine and 23 persons per cubicles in the camp. (CCCM cluster, July 2023) Although these ratios fall within the Sphere (2018) guidance, which recommends that 50 people share a communal latrine or shower (Sphere, 2018). In accordance with humanitarian Do No Harm principles and standards for inclusive WASH services, the site also provides accessible latrines designed for persons with disability (PWD). Latrines are managed daily by WASH partners and assigned incentive workers called hygiene promoters (hp). They oversight and clean every day, improving sanitation awareness on the issue. When latrines are full and require desludging, responsible partners hire a vacuum truck from private vendors. Overall number of latrines and showers do meet the demand according to the standard (Sphere, 2018) while additional incentive workers overview environmental sanitation, making the camp one of the cleanest. Showers are also connected to soak away pits to avoid pollutant dispersion. As to solid waste disposal, the camp layout foresees four collection centers. Yet, they are not available. Instead, transitional collective bins are provided, with dumping sites and burning solid waste when necessary. The management of liquid and solid waste is still far from being circular.






	
latrines and showers service corridor	water taps
	
solar panels for power supply	persons with disability latrine
	
solid waste collection	water availability

Figure 92: WASH activities in SC4 camp (Source: IOM Mekelle and author, July 2024)

Water was one of the critical challenges for host communities in the peri-urban areas for before the establishment of the camp. After the camp established in 2021, it was connected to a high-discharge municipality water source line and nearby boreholes. Host communities in *kebele (tabia)* Debrement-particularaly the sub-kebeles (*kushet*) of Mayemuri (Mai Umer) and Serawat, which had long exoperincend severe and chronic wtaer shoratges-also gained access to water through the construction of 41 water points with elevated storage tanks in 2022/23 in the camp and surroing host communitites by WASH humanitrain partner IOM and Oxfam. As a result,more than 350 households now have access to safe drinking water. Similarly, the Maiwoyni community—a peri-urban area located southeast of the camp—has also gained access to potable water. The new water infrastructure, which supplies both the IDP and host communities through Borehole 1 (BH1), has enhanced service availability while contributing to improved integration and strengthened social cohesion between the two groups. In contrast, Borehole 2 (BH2) is exclusively designated to serve the IDP camp.



a) Waterpoint 1- Mai Umer, Debregenet (host community)



b) Waterpoint 2- Mai Umer, Debregenet (host community)



c) Safe water supply facilities for camp and Maiwoyni community (host community)

Figure 93: Strengthening Cohesion between Host Communities and IDPs through Water Supply Support (Source: author, July 2022 and 2025)

Energy and power supply

An electricity gridline goes along the nearby asphalt highway that leads to Mekelle Industrial Park and the host community centers. Yet, SC4 camp is not connected to the national gridline because of its alleged emergency status. Unlike most of the collective centers in Mekelle, linked to the gridline, SC4 uses solar lamps inside shelter and solar panel for water pump from boreholes (BH). Solar lights (phase one 100 pieces with 120W lamp out of the total 300) are also installed across the road which help for protection and safety. The camp is fully dependent in firewood and charcoal following a traditional way of cooking¹⁷⁵. Firewood and charcoal are sold within the camp, with firewood primarily used for preparing traditional *injera* on mud stoves, locally known as *mogogo*.¹⁷⁶ The IOM CCCM unit, as the camp management agency, also established a communal kitchen measuring 12 m by 4 m with CGI walling; however, the stove installed remains similar to traditional type. To find firewood is not easy, and sometimes eucalypts pole vandalism and looting from the unoccupied shelter are common practices with a security treat. The residents often leave the camp in search of electricity, relying on the host communities' power supply to charge mobile phones and other electronic devices. The absence of electricity within the camp adversely affects residents' living conditions and increases their dependence on host communities.



Figure 94: Traditional firewood baking (Source: author, 2023)

Educational facilities and services

IDP children have access to formal education from grades 1 to 6, as well as informal learning opportunities offered on both regular and irregular bases in the camp. Students above grade 6 attend schools in nearby host communities, specifically in the surrounding peri-urban areas of Mayweyni and Mayemuri kebeles, where they can continue their studies up to grade 8. From grade 9 onward, camp-based students travel to schools located in the Adihaki sub-city of Mekelle. There are four learning centers available in the camp made of temporary structures such as plastic sheets and CGI. The schools have temporary fences which

¹⁷⁵ No new cooking system has been proposed in the camp, despite the many experiences around the world (aimed at reducing deforestation) many of which are also supported by agencies involved in the current camp management.

¹⁷⁶ “Mogogo” is a term in Tigrinya that describes a traditional clay oven used to bake injera.

separated from other public (communal) spaces and help to secure school resources from theft. Humanitarian agencies such as Image1day, Save the children, Hearts of humanity and Daughter of Charity are among the education partners that provide school services in the camp. The formal education system is free and covers from grade 1 to 6 only given by save the children and some partners such as Daughter of Charity also provide feeding services to the students. IOM (MHPSS unit), Daughter of charity and World Vision provide children friendly center (CFS).¹⁷⁷ They serve as a pre-school for underage children and women friendly centers (WFC) are helping them for psychological recovery from the war trauma. Nevertheless, there are 2293 children in the age of 5 to 11 which need to go to school. Most of the teachers in the camp school are also from IDPs which have working experience and relevant academic degrees.



Figure 95: Educational facilities in the camp (Source: author 2024)

Healthcare

SC4 camp houses one health clinic, managed by IOM emergency health unit with more than 12 health care providers including nurses, midwife, medical doctor, druggists and laboratory technician. Within IOM health clinic premises there is a midwifery service (delivery service) managed by a local NGO called *Maedot*. The clinic is free delivery service includes outpatient department (OPD) for children under five and adults, emergency health services, maternal and child health care. More specialized health services are provided by Ayder Comprehensive Specialized Hospital (ACSH), a clinic run by Mekelle University, less than half an hour away by car in the middle of the city. A standby ambulance is available for the referral services. The camp clinic also provides vaccination services for infants of both IDPs and host communities from *Debregenet kebele* and from city center. That happened especially during blockage and siege (2020-22). The major challenge for the camp clinic is shortage of medication and staff, suffered mainly during that time. In case of out breaks such as COVID-19 and cholera, isolation rooms were provided, beside taking the necessary precaution such as social distance and decongestion of shelter: and that, to guarantee

¹⁷⁷ Mental Health Psychosocial Support (MHPSS) aims to improve psychological and social well-being and strengthen the overall resilience of individuals affected by conflict.

a minimum standard living space and provision of WASH kits. In host communities there is a health posts/center in Mayweyni and Mayemuri with limited number of staffs and medications that make rely on the SC4 health center. Services Provided by Emergency Health Units in the camp¹⁷⁸:

- Primary Healthcare Services- Treatment for common illnesses and injuries.
- Vaccination Campaign and routine Immunizations for preventable diseases (e.g., measles, polio).
- SRH (sexual reproductive health) Prenatal care, postnatal care, and child health monitoring.
Nutrition screening and referral linkage
- Disease Surveillance and Reporting
- Monitoring outbreaks and reporting data to health authorities.
- Health Education Programs, Promoting hygiene practices and disease prevention strategies.
- Emergency Medical Services - Immediate care for acute medical conditions or injuries.
- Mental Health Support - Counseling services for trauma-related issues due to displacement.

Common health diseases in the camp:

1. Upper Respiratory Tract Infections (URTIs) - Commonly, colds, flu, and sinusitis. This condition affects across all age groups, particularly those aged 18 to 70 years.
Symptoms: Cough, sore throat, nasal congestion, fever.
2. Lower Respiratory Tract Infections (LRTIs) - Includes pneumonia and bronchitis. These infections primarily impact children under five years old and adult patients.
3. Diarrheal Diseases - Often caused by consumption of contaminated water and food or poor sanitation. This condition also predominantly affects children under five and adults.
4. Skin Diseases - Conditions such as scabies, fungal infections, and dermatitis. These affect individuals of all ages and are often caused by poor sanitation and inadequate resources. Symptoms: Itching, rashes, lesions.
5. Eye Infections- Includes conjunctivitis and other bacterial infections.
Symptoms: Redness, irritation, discharge.
6. Intestinal Parasites- Common parasites include roundworms and hookworms.
With Symptoms: Abdominal pain, diarrhea, malnutrition.
7. In addition, chronic cases – e.g., Hypertension, Diabetic, and other chronic cases.

Main causes of diseases in the camp:

1. Overcrowding - High population density in camps leads to rapid disease transmission.
2. Poor Sanitation and Hygiene - Inadequate access of sanitation facilities contribute to the spread of infections.

¹⁷⁸ Data were sourced from the IOM Health Unit (2024) and discussions with health personnel and experts at the camp clinic.

3. Malnutrition - Limited access to nutritious food weakens immune systems, making individuals more susceptible to illness.
4. Insufficient medical facilities and personnel hinder timely treatment of diseases.
5. Environmental factors
6. Unsanitary living conditions can lead to vector-borne diseases (e.g., malaria).
7. Affected age groups, children under 5 years old
8. Highly vulnerable to respiratory infections and diarrheal diseases due to developing immune systems.
9. Adults (Ages 18-60) - Often affected by respiratory infections and skin diseases due to exposure and stress, Elderly (Over 60 Years) and family size of patients.
10. Larger family sizes may correlate with increased disease transmission due to closer contact and shared resources.

Analysis of data collected over the past two years can identify trends in family size and disease occurrence, indicating that larger households tend to experience higher rates of communicable diseases. Disease prevalence may also fluctuate seasonally. A comprehensive understanding of the most common health conditions in the SC4 IDP camp—including their causes, the demographic profile of affected individuals, and the available healthcare services—is essential for designing effective intervention strategies. Ongoing monitoring and systematic data collection are critical to ensure that healthcare provision remains responsive to the changing needs of the camp population.

Child-Friendly Spaces (CFS) and Women and Girls' Friendly Spaces (WGFS) programs provide critical support to children, women and girls affected by conflict, helping them recover from trauma and fostering hope for the future. The Women and Girls' Friendly Space (WGFS) initiative specifically targets adolescent girls and women affected by gender-based violence (GBV), offering counseling and psychosocial support. These spaces serve as safe environments where women and girls can access information, receive support, engage in structured activities, build social networks, and strengthen peer relationships. The IOM Mental Health and Psychosocial Support (MHPSS) unit oversees and coordinates these programs through trained IDPs and community workers, who are equipped to identify individuals with mental health needs and provide psychological support to promote recovery from traumatic experiences.

In 2021, UNFPA and Food for the Hungry Ethiopia (FHE) established a Women and Girls' Friendly Space (WGFS) to support displaced women and girls. The facility provides art, music, information, and learning activities for affected women and adolescent girls, along with awareness sessions and the distribution of dignity kits and other non-food items (NFIs). The WGFS also includes a nursery, enabling mothers to

participate in sessions while their children are cared for in a safe environment. In addition to on-site services, the space conducts outreach activities, extending its support beyond the confines of a safe space.¹⁷⁹

Sindayu Gebru (18), an aspiring singer and poet, is a regular at the Women and Girls Friendly Space (WGFS) at Sebacare IDP camp in Mekelle. Sindayu is a born artist, often receiving standing ovations for her performances. "I come here to learn new skills like knitting and stress management, and I also learn about my rights." She speaks highly of the space, calling it her "safe haven" where she can play, learn, and confide in other women and girls. Safe spaces are hard to come by in Sebacare, housing more than 22,000 IDPs, it is one of the largest camps in the region.¹⁸⁰

Table 16: The matrix of common diseases, cause and services in SC4 camp (Source: IOM health)

Common Disease	Main Causes	Services Provided
Upper Respiratory Tract Infections (URTIs) - Commonly, colds, flu, and sinusitis. Symptoms: Cough, sore throat, nasal congestion, fever	Overcrowding, poor ventilation, malnutrition	Primary care, health education, vaccination
Lower Respiratory Tract Infections (LRTIs) - Includes pneumonia and bronchitis.	Overcrowding, environmental factors, malnutrition	Primary care, emergency care, health education
Diarrheal Diseases	Poor sanitation, contaminated water, large family size	Primary care, health education, water/sanitation support, hygiene promotion through wash campaigns
Skin Diseases (Scabies, Fungal)	Poor hygiene, overcrowding, shared items	Primary care, health education, hygiene promotion
Eye Infections (Conjunctivitis)	Poor hygiene, overcrowding	Primary care, health education
Intestinal Parasites	Contaminated food/water, poor sanitation	Deworming programs, health education, nutrition screening
Chronic conditions (Hypertension, Diabetes etc)	Stress, aging population, lack of continuity care	Chronic disease care, mental health, referral systems

Food

Food remains one of the most pressing needs across IDP sites including managed camps, followed closely by shelter and WASH. During the conflict, food shortages were further intensified by the siege, blockades, and the overall lack of humanitarian access. On average, each family receives a monthly food ration of 15 kilograms; however, distribution pauses remain frequent and widespread due security and logistic issues.

¹⁷⁹ United Nations Population Fund (UNFPA) is a UN agency aimed at improving reproductive and maternal health worldwide.

¹⁸⁰ <https://ethiopia.unfpa.org/en/news/women-and-girls-friendly-space-play-learn-and-confide-community>

The suspension of food assistance in Tigray has become one of the most significant protection concerns for IDPs, returnees, and host communities, particularly for individuals with specific vulnerabilities.¹⁸¹ Food partners have continued to experience interruptions in distributions, resulting in inconsistent or paused food assistance. This shortage has generated serious protection risks. Similar to other regions, the scarcity of food has led to the adoption of negative coping mechanisms, including survival sex, unintended pregnancies, and increased exposure to Sexually Transmitted Infections (STIs) and HIV. The World Food Programme (WFP) served as the primary agency responsible for food assistance, working in coordination with local partners and international NGOs.

All humanitarian services and sectors provided by the agencies referenced above adhere to the minimum standards established in the (Sphere Association, 2018). The scope and quality of these services play a critical role in shaping camp governance and fostering cohesion between IDPs and the host community, while also influencing livelihoods, dignity, settlement choices, and opportunities for durable solutions. The section below outlines the principal services and sectors operating in the camp and compares them with relevant emergency response standards.

Table 17: Sectoral standards in SC4 (Source: service monitoring camp profile as of July 2023 by CCCM)

Services/sectors	Sectoral standards / indicators	Standard	Achieved
CCCM	IDP Committee(s) have been formed or IDPs meaningfully represented in Kebele/Camp Committee	Yes	Yes
	Total number of IDPs in the community representation structure (camp committees)	N/A	143
	% of women represented in Community Representation Structure(s)	≥35%	37%
	% of people with special needs (PWSNs) and minority groups in the community representation structure (camp committee)	10%	11%
	Community representation committees trained in CCCM?	Yes	Yes
	Number of site coordination meetings conducted at site last month.	At least 1	1
ESNFI	E-SNFI cluster partner present in site	Yes	Yes
	Average area (in sq. meters) per person	≥3.5 sqm	20 sqm
	Emergency shelter materials been distributed	Yes	No
Education	% of children regularly attending primary school	100%	44%
	Education cluster partner agency present at site	Yes	Yes
	Distance of education facilities from site	On-site/less than 1 Km	1-5 Km
	Number of temporary learning centers	N/A	4
Food	Food cluster partner present	Yes	Yes
	IDPs have access to food distribution in less than a month	Less than a month	More than 2 months
	IDPs has access to a market	Yes	No
	Functional health facility in the Kebele	At least 1	1
	Health cluster partner present on site	Yes	Yes

¹⁸¹ Emergency Coordination Group (ECG) emergency report dated 19 May 2023

Health	Distance of health facility from site	On-site/less than 1 km	On-site
Nutrition	Was a MUAC screening conducted in this Kebele in the last month/two months?	Yes	Yes
	# of children identified with SAM ¹⁸²	N/A	13
	# of children identified with GAM ¹⁸³	N/A	0
	Nutrition cluster partner present in site	Yes	Yes
Protection	Humanitarian protection actor (CP, GBV, HLP or general protection) present and providing services during last month	Yes	Yes
	Child Protection social workers present/working in the Kebele	At least 1	13
	# of persons provided with information on protection risks (including Child Protection, GBV risk mitigation and HLP issues)	N/A	1250
	Protection monitoring taking place in site	Yes	Yes
	Women and children safe spaces available in site	Yes	Yes
	MHPSS provision in site	Yes	Yes
WASH	WASH cluster partner present in site	Yes	Yes
	# of functional latrines available on site	50 people/latrine	293 (26 people/latrine)
	# of functional shower/batching space available on site	50 inds/ cubicle	324 (23 inds/cubicle)
	Solid waste disposal pits on site	40 HH per pit	0 HH per pit
	Hygiene kits distribution to households within last month	Less than a month	Between 1-2 month
	Dignity kits distribution to women in site within last month	Less than a month	Between 1-2 month
	Stagnant water pits/potholes observed	No	Yes
COVID-19	Closest Primary Health facility is implementing COVID-19 related IPC (temp. screening, physical social distancing, PPE, patient triage, etc.)	Yes	Yes
	Access to handwashing facility or basin at HH level	Yes	No
	Physical works (incl. shelter partitioning, decongestion, provision of handwashing stations, increase of space in communal areas, etc.) undertaken since April 2020 to mitigate the spread of COVID-19	Yes	Yes
	Approx. % of individuals reached through Risk Communication and/or Community Engagement on COVID-19 in the last month	N/A	91%

¹⁸² SAM is a severe acute malnutrition and

¹⁸³ GAM is global acute malnutrition

2.2.4. Consumption and market transaction

Market

Market place is an important infrastructure for large and middle-size camps located far from urban areas. According to UNHCR Emergency Handbook camp planning and settlement standard clearly stated that large camps with more than 20,000 guests should have an open market with the necessary hedges (UNHCR, 2024). Anyhow, for planned camps located in and around/near cities or urban centers IDPs are expected to use nearby market and space. Although SC4 is one of the largest IDP camps in Tigray, while commercial land use is incorporated in the master (site) planning, in practice no space has been allocated for a market, and there is also no nearby accessible market for residents. To purchase basic goods and commodities, IDPs are therefore compelled to visit Mekelle city markets in Adihaki and/or Kedamay-Weyane. Within the camp some food items are provided by small shops and petty trade such as bakery. Some livestock products such as milk and meat are also available. The predominant commercial activity is tea and coffee spots areas and with some beer grocery centers which also attracts the host communities' youths. Besides, shops and tea corners owned by the IDPs market are flourishing inside the camp, whereas small shops run by host communities are located along the edges of the camp and the main access roads to the main entrance.

Recommended and ideal camp site layout in large camp is space provided for distribution centers and health facilities (clinics and MHPSS centers).¹⁸⁴ They may be needed in each sector, while other space should be left for shops in each block. A sector is made of 4 blocks which accommodate 5,000 persons according UNHCR planning standard (UNHCR, 2024). Yet, in SC4 there is one distribution center and one clinic, while no space is allotted for market or shops. As said before, IDPs are informally creating shopping and petty trade space either by constructing new structures on roadside or changing their shelter into commercial, with shops and open-air small market, called *gullit*.¹⁸⁵



Figure 96: Small shops in SC4 camp, Mekelle (Source: author 2023)

¹⁸⁴ MHPSS centers are facilities or service points that provide support for both mental health (clinical care for conditions like depression, anxiety, or trauma) and psychosocial well-being (activities and counseling that help individuals cope with stress, social challenges, or displacement).

¹⁸⁵ *Gullit* is an open-air petty trading place.

2.2.5. Road and drainage

SC4 is a planned camp designed using a regular grid layout with a hierarchical road network. Each shelter zone is enclosed by a 10-meter-wide access road, and all shelters are reachable via gravel roads and bordered by communal spaces with appropriate setbacks. The road alignment follows the natural slope of the site, which gradually descends from west to east and northeast, facilitating natural stormwater drainage. The camp contains approximately 7 km of internal access roads. Given the presence of black cotton soil in the eastern section, effective drainage infrastructure is essential; accordingly, ditches, fords, and drainage channels have been constructed with consideration for accessibility, ensuring the camp remains disability-friendly. In addition, a 12-meter-wide peripheral road surrounds the camp, linking the peri-urban area of Mayweyni found after the camp, with the main city. This gravel road is used by public transport providers and also serves as the primary entrance to SC4 and public taxi also use it as terminal. Overall, incorporating site contours into the design of roads and drainage systems in humanitarian settlements helps mitigate flooding risks and reduces both initial construction and long-term operational costs.

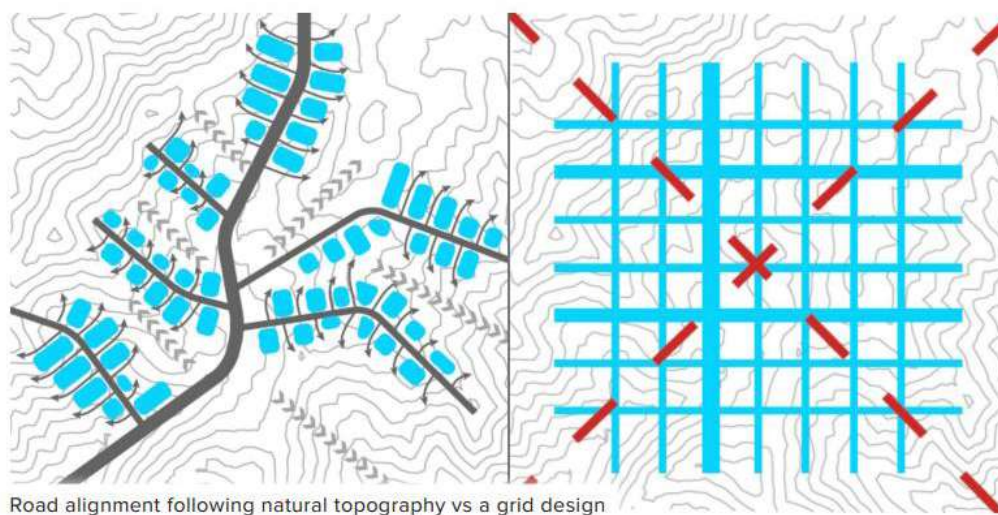


Figure 97: Camp Road alignment based on UNHCR design and planning standards (UNHCR, 2019)



Figure 98: Poor drainage conditions in SC4 Mekelle during rainy season 2023 (Source: author 2023)

2.2.6. Camp design and planning features: beyond a morphological perspective

Urban design and town planning principles are commonly applied to locate and organize a camp. These principles are dealing with four main dimensions: the locational factors, the settlement size and setting (land use pattern, service delivery system - Sds, and alike), the interactions with local environments and ecosystems and the local governance. Such dimensions are tightly linked to the point that we can discuss in term of 'camp ecosystem', a concept that goes beyond the guidelines of (Sphere, 2018) and related standards.

The camp (even in the planned version discussed here) can be seen as a place of transition and interaction from different perspectives. And it is with these perspectives in mind that it should be planned and managed. As a settlement, it primarily dialogues with geographical context and climate, requiring special attention to the so called 'humanitarian urbanism'. Of the features of hosted population, it captures suffering of detachment, mutilations, physical and psychological harm, basic needs and demands, but above all the expectation for a safe and rapid return to the places of origin. Even far from population centers, the camp is never an isolated place: it is part of a network of contacts and relations that change with distances and seasons, with the gradient between ordinary and emergency, with the relationship with local communities and ethnic profiles. All these aspects demarcate the domain of a political power exercise which is one of the main lead of Bourdieu's 'field' concept (Bourdieu, 1984, 1993).¹⁸⁶ Its Sds is related to the existing organizational and management model, often hybrid and adaptive, rarely self-referential. Looked at like this, the camp becomes a social ecosystem if it cultivates sustainable relationships with the surrounding Nature or function as an extractive and destructive device. It is obvious that its morphological structure should take these elements into account. Unfortunately, this does not happen frequently.

SC4 camp is 495,384 square-meters in size (49.5 hectares), based on a grid-like pattern. Normally, each shelter is centrally facing a communal courtyard, except zone A-E where communal shelters are spatially organized in radial fashion. The site is well connected with the main city. Two alternative highway asphalt roads are available to reach the site: one comes from downtown via Marta square leading to Mekelle Industrial Park and proceeding to Kokolo village; the other is connected with Quiha satellite town via Mizer mass housing (*Sebacare*) and merged with above mentioned road at the main gate of SC4. The first asphalt road is also connected by new arterial asphalt road constructed in 2023/24 linking the North part of the city with *Serawat kebele* around the camp.

¹⁸⁶ Bourdieu conceptualizes a field as a structured and relatively autonomous social space in which actors occupy positions based on their capital and engage in ongoing struggles to maintain or transform the distribution of power and legitimacy.

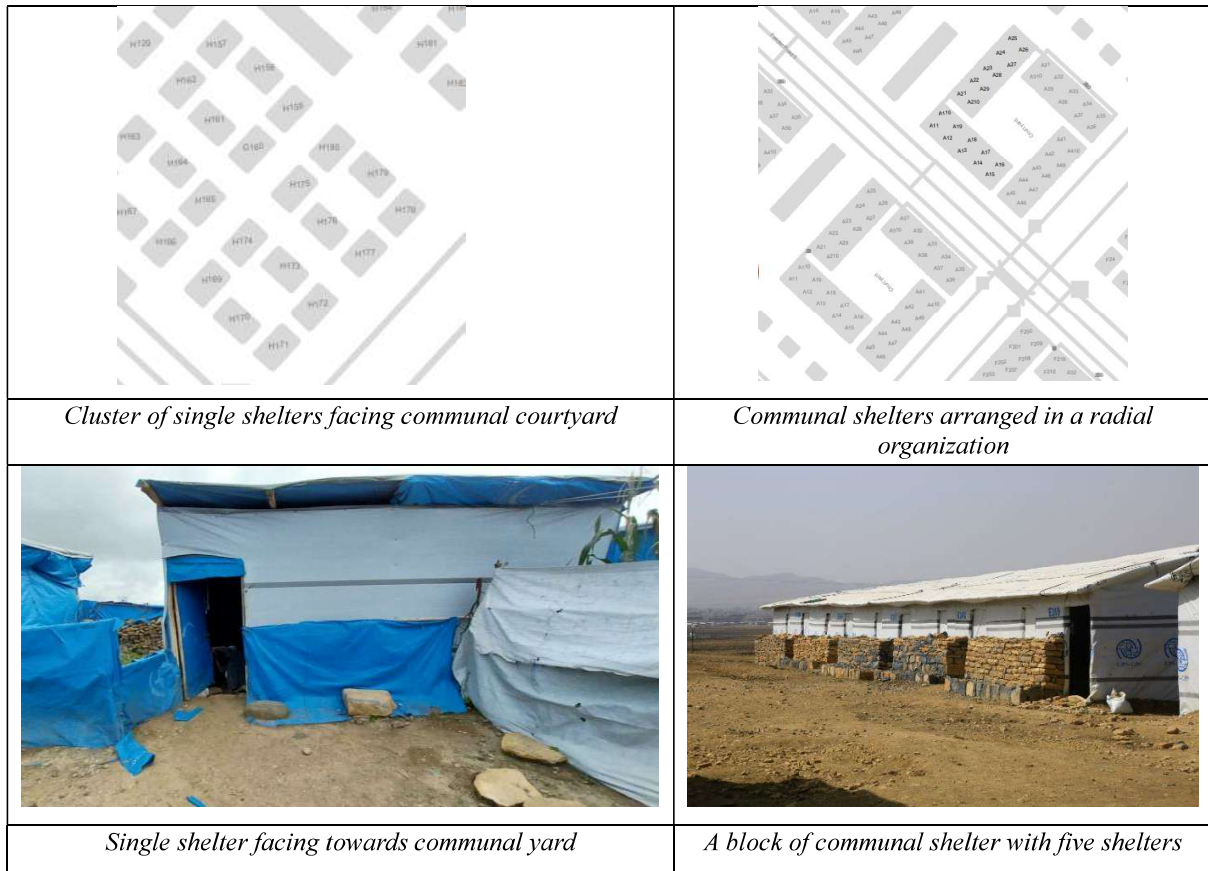


Figure 99: Camp design layout and spatial organization at block level in SC4 (Source: author 2023)

The camp is organized into two zones: residence units and communal facilities. Residence units are basically shelters, either communal (10 units in one block) or single shelter. Communal facilities include schools, CCCM office, distribution centers, clinic, MHPSS center, WFS/CFS (women or children friendly center), protection desk areas, communal kitchen and latrines, shower, water points, laundry (in some zones), dry waste disposal and registration office. The communal facilities are located along a service corridor and each service is managed by different humanitarian agencies. As seen before, when the time goes, land use and functional distribution of the planned camp start changing following a sort of ‘inner energy’.

Even peri-urban areas surrounding the camp start been interested by dynamic changes in land use. Here the changes do depend on three main factors: the ‘position’ of the peri-urban area within the more general urban fabric, its own internal dynamics and the additional exchanges with the camp, both formal and informal.

Mekelle city size almost doubled in population since the war started in November 2020, hosting around 200,000 IDP in the host community, collective centers and SC4 planned camp.¹⁸⁷The camp greatly affects the city as the IDP heavily rely on the city for basic consumption, service and job opportunities. The physical (spatial) development of the city towards the peri-urban area (mainly between Serawat kebele and the camp) is vivid and affecting each other. Construction of new asphalt road which connected the North part of Mekelle city with Serawat area and the modern high-rise residential and commercial buildings greatly increase the western urbanization by engulfing nearby peri-urban areas surrounding the SC4 camp.

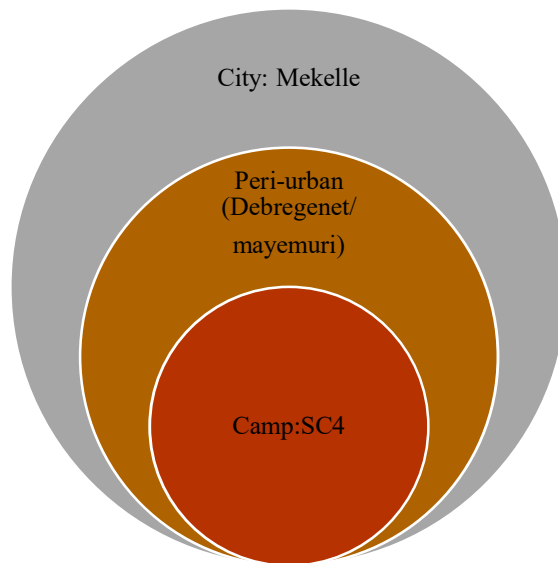


Figure 100: Embeddedness of SC4 within local urban dynamics (Source: author's illustration 2024)

The embeddedness of SC4 to local urban dynamics requires a new planning approach. And that taking also into consideration the post-war rehabilitation and reconstruction strategies, based on assessment of damages, losses and needs (DaLN). Among the non-physical damages we should consider the dismantling of the old governance system and the creation of an Interim Administration (IA) nowadays at the center of the regional political agenda together with the acknowledgment of the TPLF status. Such a complex ongoing process is heavily affecting the regional planning system at all institutional levels, as well as at camp level. The camp design and planning are mainly based on the international humanitarian standards (see UNHCR and cited Sphere handbook 2018), but the current humanitarian urbanism is challenged and becoming under pressure conceptually and operationally. That requires a new approach to design post-disaster scenarios with adaptive governance.

¹⁸⁷ Based on credible estimates and observations in the city, roughly twice as many people arrived informally from various locations. However, according to the CCCM Cluster Intentions Survey, the number of IDPs in Mekelle reached approximately 300,000 by July 2021. <https://dtm.iom.int/reports/ethiopia-household-level-intention-survey-tigray-region-july-2021>

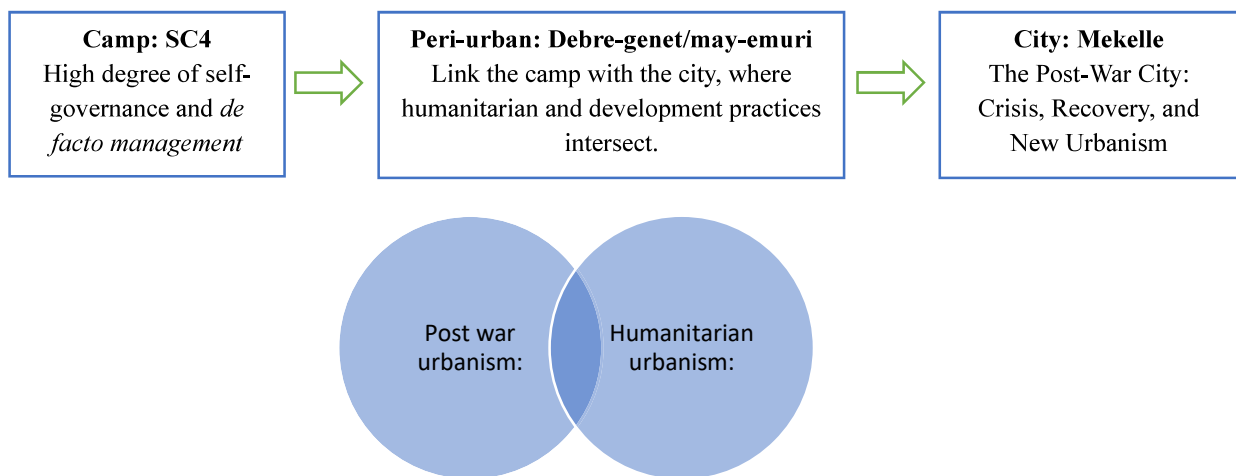


Figure 101: New humanitarian urbanism (Source: author's illustration based on findings and theories)

2.2.7. Adaptive governance

The camp is managed and coordinated according to international humanitarian principles and with respect to local and national laws, host community environment and culture. Camp coordination and camp management (CCCM) goal is to improve living conditions during displacement while seeking and advocating for durable solutions to end camp-life and organize closure and phase-out of camps upon IDP return. CCCM is applied to camps (spontaneous and planned), camp-like settings, and communal settlements but does not include host families. Camps and communal settlements are temporary sites that should be established only as last resort for displaced and affected peoples if other options are not plausible. At global level, UNHCR and IOM are the CCCM co-cluster lead agencies. UNHCR leads the conflict situations and IOM those due to natural disasters. Camp management deals with IDP site setting and organization, to meet the basic needs for services and protection of its residents. Every person should participate in the camps management activities, to improve the quality of life of their community. Standards have been defined globally to uphold the right to life with dignity for people living in IDP sites and camps, providing guidance for minimum level of services delivery and protection. Standards should be applied taking contextual conditions into account.

In case of SC4, IOM CCCM unit is responsible for coordination and management with different partners providing services such as food, shelter/NFI, WASH, protection, education, nutrition, and emergency health and MHPSS. Camp administration is mainly responsibility of local government bodies, where the camp is located. In SC4 case, Adihaki sub-city (equivalent to *woreda*, the lowest administration structure) is responsible for all matters of administration such as security and land related issues. CCCM cluster (sub national cluster of Tigray) generally overview all camps and collective centers and assign partners and resources across Tigray Region. In 2021, the CCCM unit of IOM, together with the CCCM Cluster and the local administration, held primary responsibility for site selection in accordance with established

humanitarian principles and standards. However, the involvement of IDPs and host communities remained limited, as decision-making was driven largely by the local Interim Administration and humanitarian partners, particularly IOM.

Based on the site layout, SC4 is organized in 14 zones each with different number of shelter blocks and units from zone A to zone N (*see SC4 map*). Each zone has its own IDP leaders committee, consisting of 9 members, including community watch or security. All the zone's leaders or committee do report for camp level leaders called 'umbrella', the highest IDP representative body with 6 members. At the lower level there is IDP administration structure called '*abo arba* (literally means a father of forty /አቡ አርባ)'. Most of the time, it consists of 40 clustered units of shelter. Information flow, complaint and feedback mechanism (CFM) go through these voluntary structures and channels. The relationship among the above three layers of camp management and administration is based on different matching points (meetings). For instance, site level meeting consists of each zone committee members and IDP leaders, IDPs representatives meeting is at overall city level (covering different camps), while collective centers leaders meeting does hold weekly and biweekly respectively. IOM-CCCM also manage individual cases using Zite manager¹⁸⁸ applications (before Kobo collect tool was in use) to monitor each information and complaint (if any) from household. CCCM has referral system to be handled by each claim to responsible units and partners.

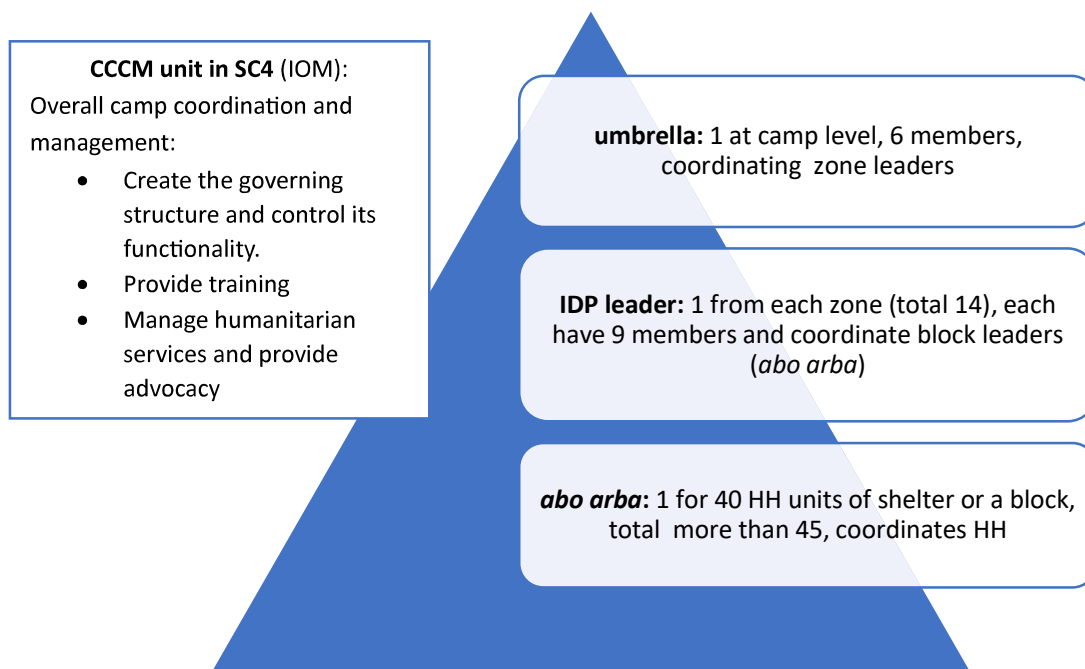


Figure 102: SC4 hierarchical governing structure of IDP camp in Mekelle (Source: illustration by author, 2023)

¹⁸⁸ Zite manager is a humanitarian data collection and management tool based on KoBo/ODK, developed by IOM and run by CCCM global.

2.2.8. SC4 within local urban-rural environment

Urban-rural environment locally affects the governance model and its dynamics. The physical morphology, the organizational and institutional model of IDP camps change over time. The longer their life cycle, the more complex their land-use pattern becomes, the more composite their demographic profile, the richer the local interactions and the more differentiated their urban-rural connections/exchanges (URL/E). Each camp becomes a place of new rights developing its own social and cultural network (links to places of origin) that can influence migration patterns over time. Due to its peculiar path, there is no life cycle that can be defined *ex-ante*, and that can affect design, planning and management effectiveness. Each camp tends to have its own history and make its own contribution to local development and to migration balance. If we consider the migratory balance and its O-D patterns it's easy to acknowledge even the long-distance role of the camp within regional, national and international settlement clusters.¹⁸⁹ It seems playing a sort of networking role.

Camps are usually designed as temporary, emergency responses to sudden displacement (conflict, disasters), with the assumption that people will either return home, integrate locally, or resettle elsewhere. In reality, many camps persist for years or even decades, effectively becoming semi-permanent settlements. Camps have unknown and undefined time and space limits as no displaced person knows when to return. Even for that reason, IDPs try to adopt and transform the camp into settlement with stable features, as it's happening for SC4. Here, the camp and surrounding peri urban area are prompting under urbanization processes mainly due to the humanitarian responses, social dynamics and economic opportunities.

The camp is not static; it's changing dynamically inside (form and use) and in relation to surrounding spaces. Although informal activities are dominant, the process follows functional and spatial rules that are effective for the organization of an open community and not closed in on itself. So-called informality, grafted onto an emergency project, features a settlement life cycle. SC4 IDP camp opened in September 2021. At that time, more than 26 IDP sites were available including former schools served as collective centers. SC4 is the first and biggest planned camp in Tigray to operate for IDP use since the war.¹⁹⁰

¹⁸⁹ Origin-Destination or O-D patterns in migration refer to the flows of displaced populations from their places of origin to their destinations, highlighting the spatial dynamics and connectivity of camps within broader settlement networks.

¹⁹⁰ The camp hosted IDPs for the first time in September 2021 with more than 3400 IDP households and 17,000 people (IOM, 2021). The camp cover 49,5 hectares with more than 3537 plastic/tarpaulin shelters (initially planned), 4 schools (formal and informal), 1 health center with its 1 delivery unit, 1 distribution center, a protection desk. Women and children friendly centers (WFC/CFC) and MHPSS-community centers are providing psychosocial support and recreational activities. (CCCM cluster/IOM dashboard 2023).

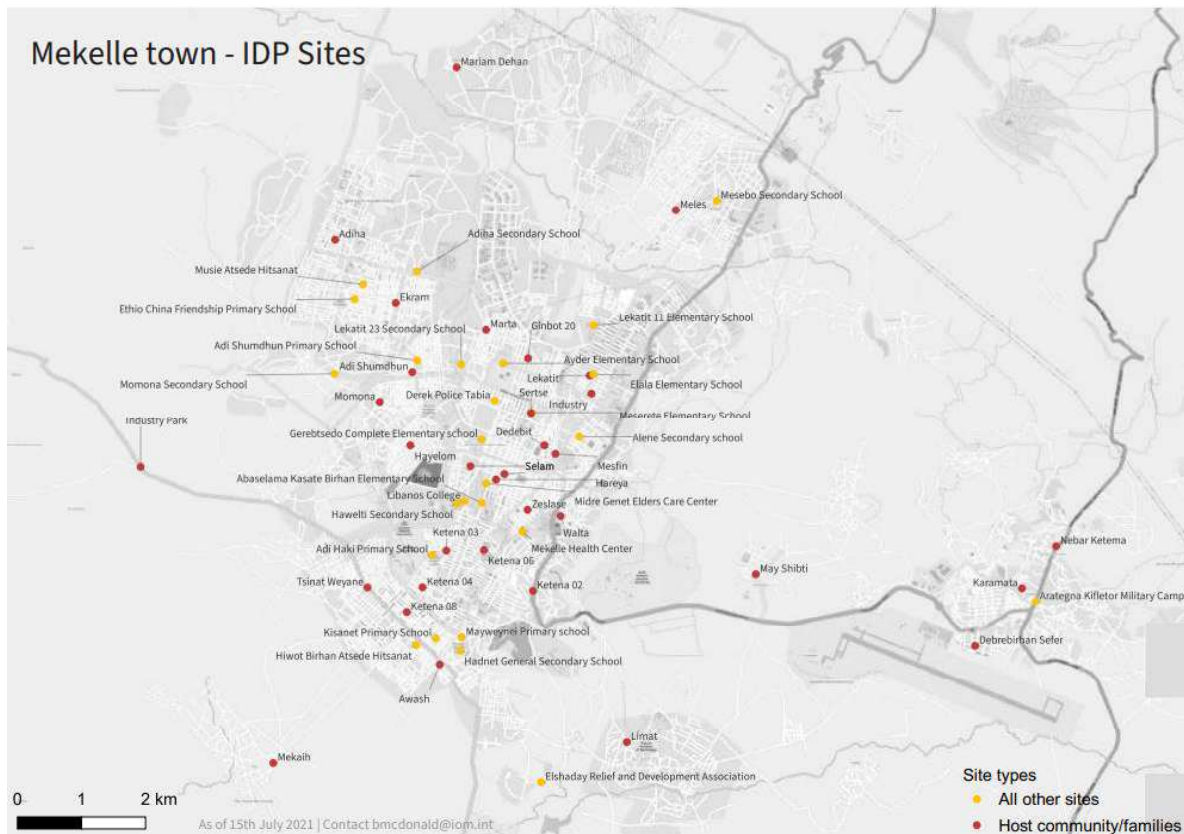


Figure 103: Location of IDP sites in Mekelle city (Source: CCCM cluster, 2021)

Due to its location, the camp is already becoming a planning issue. The peri-urban area surrounding the camp is transforming rapidly for the construction of humanitarian infrastructures, facilities and services such as road, water supply and health structures. Economic and social interactions with the host communities are blossoming changing, to some extent, the local planning issues and governance approach. The gravel road constructed in the camp, which used for public transport such as taxi and collective mobility services, helps to connect the main city, the camp and peri-urban area of Mayweni sub-kebele (*kushet*). Shops, kiosks, grocery and entertainment centers are flourished in and outside. Commercial activities and petty trade outside start from the main gate and follow the main 40-meter asphalt highway connecting the city and Serawat sub-kebele (*kushet*) and pass via the camp gate to Kokolo area. As humanitarian services are increasing inside the camp, land use, building and construction practices and settlement morphology are changing easing densification without modifying the camp boundaries. Along the most accessible and central borders is there a growing concentration of service activities that affect both the camp and the surrounding communities. These interactions are increasing generating common benefits and boosting competition in the acquisition of goods like stones, building materials, firewood, kerosine and alike. In some case the competition leads to security challenges though easily managed and controlled by elders and local forces.



*Figure 104: Transformation and adaptation of shelter and additional space using traditional dry-stone masonry
(Source: author, 2023)*

2.2.9. Camp's inertia and peri-urban growth

Present and future of an IDP camp depend to a large extent on its location, and location is a strategic inertia factor. Camp site selection process is an important milestone step during camp design and setup. Yet, in case of pressing need, short planning process and emergency situation (with large number of displaced influxes as of in Tigray case), camp site selection is not properly discussed neither by the IDPs nor by the host communities.

According to nonstructural interviews made in 2023 with site planners (anonymity purposes changed to Z, S and R experts from CCCM cluster and operations), the site selection involved local authorities, mainly regional office heads and humanitarian agencies. Located near the industrial park, the SC4 site selected has a great potential for development and accelerate the urbanization. The peri-urban areas of Serawat and Gefih Gereb are in the process of rapid urbanization, potential for integration and linked to the city. Bounded by four peri-urban areas, spatial changes are increasing inside and outside the camp with benefits from reciprocal impacts. Out of the four peri-urban areas surrounding the camp, Serawat and Gefih Gereb area has approved local development plan (LDP) according to the last Mekelle city structure plan (MCSP) that, among all, helps to regularize the common practices of illegal, slum, informal and squatting settlements in the outskirts of Mekelle city.¹⁹¹

¹⁹¹ The *Mekelle City Structure Plan (MCSP)*, prepared by colleagues from Mekelle University with the author's participation, has reached the end of its implementation period. A new structure plan is being prepared to address post-war changes, including population growth, the influx of IDPs, the emergence of displacement camps, and recovery practices.



Figure 105: Spatial transformation in the peri-urban area of Serawet and Gefih Gereb (Source: base map used for the land use proposal preparation of 2016 Mekelle Master plan)

The camp was initially properly planned, but as time goes spatial changes become predominant. Shelter building materials also changed from emergency temporary plastic into mix of hard materials. Dry-stone dwarf wall construction commonly adopts the traditional housing construction, called *hidmo*, that help to reinforce plastic sheet and to improve protection. Most of the planned camps follow urban planning principles. Namely, master plan approach by UNHCR tries to line up the humanitarian response with national, subnational and local development plans in the effort of linking humanitarian issues with long-term development efforts (UNHCR, 2018).¹⁹²



Figure 106: Commercial building development in progress near the camp area (Source: Patassini D., 2025)

¹⁹² This effort does not always bear fruit, especially if ordinary planning is weak.

Spatial changes within the surrounding host communities (peri-urban area towards the south-west) and the city towards the east is exacerbated by the camp construction. Camp-peri urban-urban linkages (i.e. SC4-Serawat/Mayemuri/Mayweyni/Gefih Gereb-Mekelle) beside inducing land use changes in the proximity do foster processes of resources sharing and competition. In peri-urban areas the vivid spatial changes are exacerbated by the economic attraction (interaction) between IDPs and the host communities. The peri-urban areas are attracted by business development using temporary structures. Mekelle municipality has already approved design and construction projects, providing land to investors and youth mainly in Serawat area (sub-kebele surrounding the camp) which is the nearest to the main city from the four mentioned sub-kebele bounding the camp.

By prolonging the emergency phase, IDP camps tend to become vital human settlements, asking for a functional integration into existing urban-rural relationships and, more generally, into the wider settlement systems and urban clusters.¹⁹³ These integration processes create opportunities and problems, which are often not seized or evaluated with due attention in both the design and decommissioning steps. Humanitarian urbanism and architecture are thus at fault.

As SC4 clearly shows, in few years camps can become part of existing urban fabrics or themselves evolve into urban settlements in responses to IDP's population growth, socio-economic activities and cultural background created an urbanization around the camp which is blurred that boundaries between camp and city (Doraï, 2010; Martin, 2015a). On the other hand, decampment or decommissioning practices may increase as IDPs look for better safety, dignity and basic services in nearby cities. In such a case, camp life cycle might fade as decommission could be mandatory.

It seems to emerge a game between decommissioning and camp's inertia, a game overlooked by the design and planning manuals: a game that poses inescapable questions to humanitarian architecture and urbanism. We have seen that such a game takes shape within the relationship between demographic profile and settlement morphology (physical and functional) of the camp. As a matter of fact, beside the population changes/dynamics, spatial and physical transformation occurred through residential shelter changes into other vital activities. Out of site plan, construction of new commercial areas becomes predominant changing the initial planned land use. Public open spaces, courtyards and pathways are either changed their use, destroyed or affected, somehow. Physical transformations of original shelters are often made with more durable construction materials and stronger/hard structures. A common practice in SC4 is using dry-stone wall and traditional mud type solid bench to reinforce and strengthen buildings and fences. Drainage lines, culvert, ford construction and site improvement also are part of a stable physical transformation. The transformation impacts can be positive and generate share benefits despite the master plan or encourage

¹⁹³ As said before, they can generate inter-scalar and long-distance effects.

form of adaptive planning or even anti-planning.¹⁹⁴ Negative impacts are sometime recorded when destruction, vandalism and looting of unoccupied shelters accompany the recovery of wooden poles for firewood and plastic sheet for sale.



Figure 107: Various activities in SC4 camp (Source: author, 2023)

The prolonged displacement in Tigray, along with the ongoing emergency and post-crisis (EPC) situation, necessitates the development of semi-permanent, permanent, and durable solutions for vulnerable populations, including IDPs, the poor, and informal peri-urban settlers. In contrast to refugees, IDPs typically share the same language, culture, and social context as the host communities. IDPs may integrate

¹⁹⁴ Anti-planning advocates that urban planning should first consider land as a common good and not necessarily a real estate opportunity. This view is reinforced in contexts where public or state ownership of land exists. Anti-planning doesn't mean you stop doing things or you give up an idea of the city. It means you stop letting yourself be limited by planning driven by strong urban regimes. Most plans are impossible to stick with anyway.

with host communities if their places of origin are also too far and if they come from contested areas where potential conflict and war go on for a long time. As a result, transformations for survival and new needs in the camp and in host communities can be considered a positive transformation in terms of spatial, social, and physical aspects. Humanitarian urbanism and architecture then both ask to become structural components of spatial planning. They brace its theory and experiences with an adaptive and innovative approach.

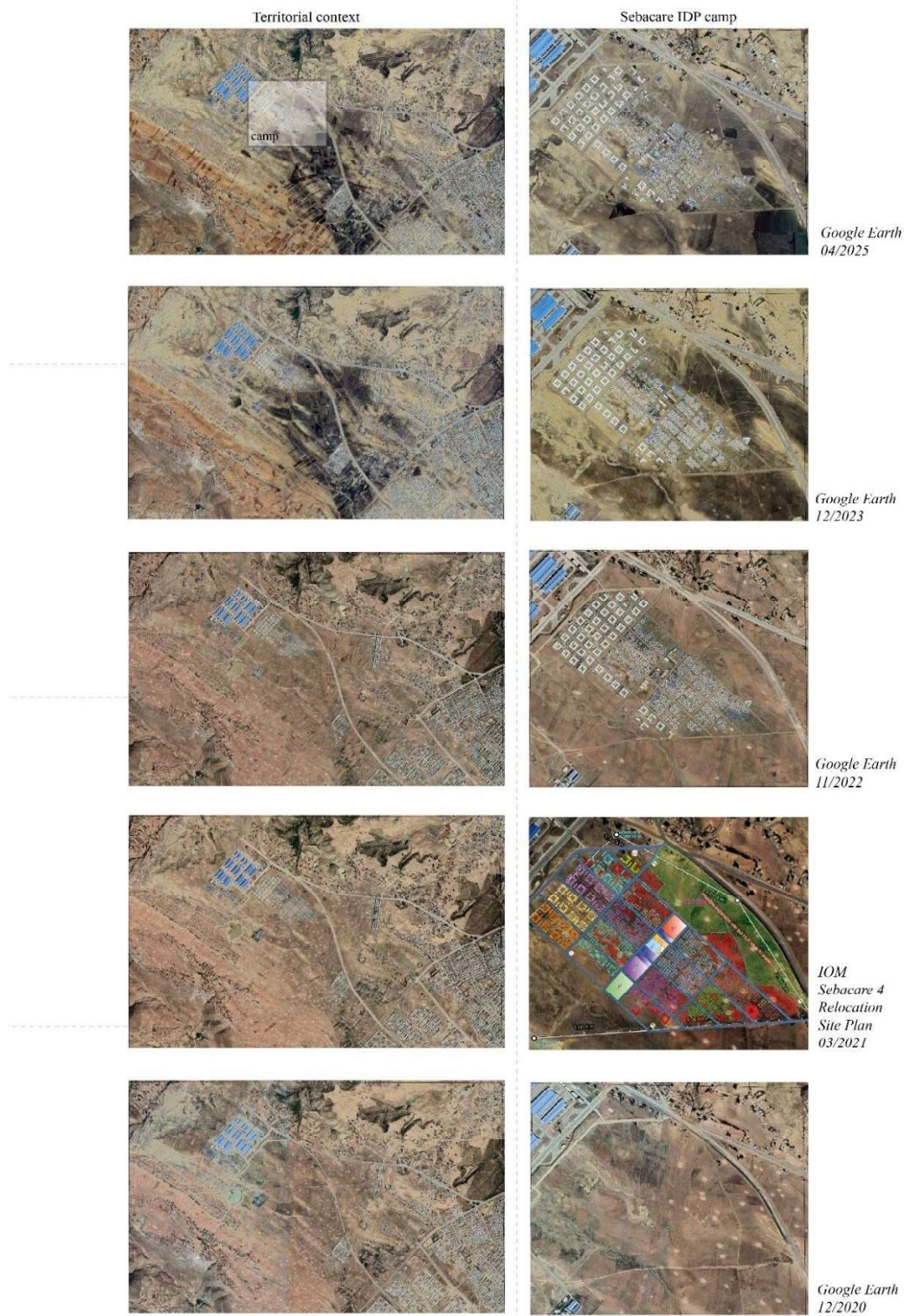


Figure 108: Five-years spatial changes of the camp, peri-urban area, and city (computed from Google Earth by Samuel B. and G. Pozzer, 2025)

Over the span of five years, the SC4 IDP camp and its neighboring territory have experienced notable changes in land use and spatial organization. In December 2020, the area surrounding the camp was largely undeveloped, with natural terrain and minimal visible human intervention. The camp site itself appeared vacant farming area with no significant shelters or infrastructure.

By March 2021, a detailed site plan by the IOM, CCCM cluster was developed, outlining a comprehensive layout for the relocation site. This plan introduced designated zones for shelters, facilities, and infrastructure, signaling the beginning of organized settlement efforts.

In November 2022, the camp had visibly expanded, with a clear increase in the number of shelters and more structured spatial arrangement. The surrounding land showed limited changes, with signs of initial land preparation and access roads becoming more defined.

By December 2023, the camp had further developed, with additional shelters (including routine repair works) and increased density visible in satellite imagery. The surrounding area began to show more signs of land use alteration, possibly related to infrastructure or service provision to support the camp population as well as to harness the benefits from the camp and host communities' interactions.

Finally, by April 2025, the camp reached its largest size and highest level of organization within the period though with some zones dwindling in areas due to poor shelter maintenance and decrease in population size. The camp's layout appeared well-defined, with densely packed shelters and expanded facilities. Surrounding lands continued to reflect human modification, indicating ongoing development and integration with adjacent areas. New construction developments are taking place around the camp, driven by private developers and supported by the municipality, which has formally recognized these activities within the designated industrial zone. The recent activities shape the camp's growth and spatial dynamics. The evolution of the SC4 IDP camp demonstrates a clear progression from an undeveloped, vacant area to a well-organized and densely populated settlement. Changes in internal land use were primarily marked by the conversion of living shelters into small shops and informal commercial spaces, alongside areas where shelters were abandoned or damaged.¹⁹⁵

The surrounding land similarly transformed from largely natural, underutilized terrain to more modified and accessible areas, reflecting increased human activity and the expansion of infrastructure. The initial development of a comprehensive site plan by IOM played a crucial role in guiding the camp's growth and enhancing living conditions. These findings underscore the dynamic nature of land use changes driven by displacement, highlighting the interaction between population needs, settlement planning, and environmental modification.

¹⁹⁵ Along the main axis roads, camp shelters transition from purely residential units to mixed-use, and in some cases entirely commercial areas, comprising shops, kiosks, snack stands, pool houses, coffee shops, and butcher shops. In certain instances, metal containers and prefabricated (CGI) structures are used, leading to modifications in land use.

2.2.10. Scenarios

One of the key issues identified in SC4 camp, in relation to the host city and surrounding communities, is the rapid spatial transformation occurring both within and around the camp. These changes are associated with a range of multidimensional challenges. In general, camps located near or within urban boundaries exert both positive and negative effects on IDPs as well as the host population. This discussion and analysis contribute to the expanding body of literature on the topic, with a particular focus on the concept of humanitarian urbanism (HU).

According to 'The Sphere handbook' and 'UNHCR' guidelines, humanitarian principles inform management, service delivery systems, design and planning with a particular attention to the relationships with host communities (Sphere, 2018) (UNHCR, 2018). Especially if they stay for a long time, IDP camps become one of planning issues for local and regional administrations. Since the settlers share the same or similar culture, language, and customs with host communities they become a strategic component of local urban agenda, asking for a change of statutory, structural and even operational planning approaches.

Camps naturally grow as settlement and humanitarian intervention exacerbate the spatial, economical, and managerial dynamics. IDP's attempt to adapt their life in a quickly changing environment and at the same time do affect the life of host communities. These processes tend to reshape the boundaries of HU turning it into a structural component of spatial planning. They brace its theory and experiences new integration practices of IDP camp in urban and peri-urban environments. HU is asked to provide IDP camps with more permanent solution during protracted displacement. In such a situation, not knowing if and when one will be able to return to one's place of origin becomes a necessity, as well as an opportunity, to manage one's daily life in all aspects. The organization of one's place of living cannot but make a mockery of the standards defined once and for all. Humanitarian Urbanism (HU) supports architects, civil engineers, and urban planners in applying humanitarian principles to ensure the safety, dignity, and well-being of vulnerable communities affected by natural and human-made disasters, such as IDPs, returnees and host communities. However, such responses require both technical and political adaptability. The humanitarian services and management provided to IDPs within camps, as well as to host communities, significantly contribute to spatial dynamism and can serve as a tool for fostering integration and social cohesion.

Insights for future scenarios

SC4 camp was constructed as a temporary solution for huge demand on shelter and settlement in Tigray in general and Mekelle specifically. After four years, the camp is still servicing more than 12,000 IDPs from across Tigray, mainly from western Tigray and some parts of northwestern and eastern Tigray (Irob and Gulomekada *weredas*) which are still under the control of external forces.¹⁹⁶ The returnee exercise has

¹⁹⁶ Source showed that the size and population of the camp fluctuate over time.

started in different phases by UNHCR and other humanitarian agencies. As a result, the number of IDPs has reduced, but still a significant number lives in camps, collective centers, unfinished buildings, makeshift and host communities. The future of SC4 camp heavily depends on the fate of western Tigray and other inaccessible areas. Yet, Interim Regional Administrative (IRA) and Disaster Risk Management Commission (DRMC) has less interested to see camps in Tigray, except SC4 and Maidimu camp in Mekelle and Shire, respectively to serve as temporary site; and that, till the full implementation of CoHA (Cessation of Hostilities Agreement), commonly called Pretoria agreement, signed in November 2022. The CoHA provides for the full returnee of IDPs to their place of origin.

Currently, the humanitarian service provision is decreasing in SC4. Donors and humanitarian agencies are decreasing funds, being not willing to invest in camp care and maintenance. In particular, the sudden cut in humanitarian support by USAID at the beginning of 2025 further exacerbated the situation. Hence, if the situation pursuing the camp faces a humanitarian relief, development opportunities and challenges, that may need the adoption of a proactive and responsive planning approach.

The five general scenarios are based on both daily spontaneous undertaken by settlers and formally planned intervention coordinated by interim administration, in collaboration with humanitarian organizations and relevant coordination bodies. These scenarios are developed through key informant interview (KII), unstructured interview conducted with local government, including the Disaster Risk Management Commission (DRMC), Bureau of Labour and Social Affairs (BOLSA) and subnational shelter cluster. Besides the above data collection, the scenario also considers the following important points:

- The protracted nature of displacement (five years) as a result poor commitment to implement the COHA, coupled with unpredictability of the post-war political events in Tigray and Ethiopia more broadly, makes it particularly challenging to develop a set of meaningful future scenario for SC4.
- Security and accessibility challenges persist in the places of origin of IDPs, particularly in Western Tigray, as well as parts of Southern, Eastern, Northwestern, and Central Tigray. These conditions hinder the return of IDPs and the full implementation of the Cessation of Hostilities Agreement (CoHA).
- Following the onset of the war and initial emergency and post-crisis (EPC) phases, the focus gradually shifted toward the recovery and reconstruction phases of the post-war period.
- There are a critical need and natural phenomenon to transition from emergency shelters to transitional and, ultimately, durable shelter solutions.
- A natural morphological transformation of the camps by residents is inevitable, as they adapt to their living conditions. This process often involves modifications, expansions, and the addition of structures to the original emergency shelters.

- In Tigray, approximately one million IDPs remain, despite return efforts initiated by the government, UNHCR, and other humanitarian partners following the COHA. Many IDPs continue to reside in collective centers, makeshift shelters, or within host communities. Given the protracted nature of their displacement, there is an urgent need to relocate them to planned camps. This would also allow schools currently serving as collective shelters to return to their intended educational function.
- While no further fresh mass influxes of displaced populations are expected following the signing of the Cessation of Hostilities Agreement (CoHA), the security situation remains unpredictable. Additionally, there have been no significant efforts toward mass repatriation or return to inaccessible areas such as Western Tigray, parts of Northwestern Tigray, and Eastern Tigray.
- Unlike other camps, population dynamics are not the main driver of change in this context, as demographic shifts have remained relatively limited. Unless a new conflict arises, population growth and movement are unlikely to significantly impact the expansion or modification of the camp. While there are no specific figures available for population changes within the camp—such as births, deaths, arrivals, or returns—Tigray’s regional annual growth rate (estimated at 2.2–2.4%, slightly below the national average of 2.5–2.6%) can be used as a general reference under stable conditions with minimal new displacement or returns. However, this estimate should be adjusted for camp-specific conditions, including factors such as security, access to healthcare, migration trends, return movements, and mortality rates. In situations where mortality is elevated or access to health services is limited, the actual population growth may fall below the regional average.
- Unlike refugees, IDPs are forcibly displaced within their own country. As a result, they often share a common culture, language, and social norms with the host communities in which they settle. This cultural and linguistic alignment can ease integration and reduce potential social tensions, although challenges related to resources, housing, and services may still arise.
- The provision of humanitarian services with IDP camps—alongside targeted assistance to host communities, and in some cases, services delivery exclusively to host populations as part of broader response to conflict-affected areas—facilitates social cohesion and integration. This inclusive approach contributes to the gradual social-spatial integration of the camp with peri-urban and urban environments, thereby promoting long-term stability and resilience.
- The camp is not enclosed by a fence, which is in keeping with practices for many IDP camps situated in locations deemed safe and secure. The erection of fences in such settings can produce negative psychological effects among displaced persons, including sensations of imprisonment or segregation. Moreover, physical barriers may impede the social integration of IDPs with host communities and surrounding environments. In contrast, open or less restricted camps tend to foster

more inclusive interactions, whereas fencing may carry signals of exclusion or mistrust, potentially straining relationships with local residents.

- The camp originally established using emergency shelter materials, primarily plastic sheeting, designed to provide temporary protection for six months in accordance with established standards. These shelters were intended to transition subsequently into more durable transitional shelters (T-shelter). However, in the case of Tigray, all camps have remained in this initial phase for an indefinite period, with only minimal repair and maintenance undertaken by humanitarian partners. Severe flooding, along with rain and wind damage, compromised the stability of the emergency shelter.
- Camps-as-a-last-resort principle, according to the *UNHCR policy on alternatives to camps (UNHCR, 2014c)*, emphasizes that effort should focus on supporting displaced populations in more integrated and sustainable settings - such as within host communities-rather in socially isolated environments that foster dependency and limit access to livelihood. Integration into host communities promotes autonomy, better access to services, and social cohesion. Therefore, whenever feasible, UNHCR and other humanitarian organizations advocates for responses that avoid long-term camp-based solutions.
- Intention surveys conducted by the IOM in Tigray reveal that a significant majority of IDPs wish to return to their places of origin. According to the July 2021 Household-Level Intention Survey, approximately 89% of surveyed IDPs across seven urban areas expressed a desire to return, 10% wanted to locally integrate, less than 1% wanted to relocate/resettle (CCCM Cluster et al., 2021). However, actual returns remain limited due to persistent security concerns and restricted humanitarian access, particularly in Western, Southern, and Eastern Tigray. Additional barriers such as lack of food, shelter, and livelihood opportunities further hinder sustainable return. As a result, the gap between intention and actual return continues to pose a major challenge for humanitarian actors and the implementation of durable solutions.
- Changes in emergency shelters, including modifications to land use, shelter design by residents, and the adoption of materials such as drywall and stone in communal shelters, indicate a need for progressive and incremental non-emergency construction within the camp, alongside self-sufficiency initiatives through livelihood activities. Although the overall population has declined, new IDPs, such as the 85 households from Quiha serving as a final destination, continue to arrive. The interim local government has shown interest in relocating IDPs from other centers into the camp. Furthermore, political party involvement at both regional and national levels has significantly influenced the safe return process for IDPs, impacting overall camp management. Over time, the increasing demands on host communities—particularly regarding land, firewood,

water, and basic services—have strained municipal capacities and resources, highlighting the need for sustainable planning and support.

In such a perspective, some possible scenarios can be identified and compared:

- i. *Scenario 1:* The camp continues with the same use for some years and is integrated into city development as part of the urban fabric. It is highly likely for IDPs to be integrated (local integration) with the host communities. As seen, the integration opportunities do increase in IDPs compared with refugees, and there are never 100% returnees in normal conditions. According to the discussion with management bodies and non-structured interviews conducted in 2023, we can suggest that some of the IDPs hope the government could issue a tenure security document (TSD) for their shelter in the long term. This interest is reflected in the use of permanent structures in the settlements. Since 2021, the camp has two spatial characteristics: some zones are changing the residential land use and expanding new commercial structures whereas other zones are spatially shrinking as IDPs integrate with host communities. Spatial shrinking creates no-man's land and favors vandalism actions.
- ii. *Scenario 2:* The camp continues with the same use but serve as transit camp or transition center for IDPs that could stay for short period of time till Western Tigray becomes accessible and free. Transit camps can be mostly used for rehabilitation and reintegration purposes.¹⁹⁷ Transit centers might be necessary at the beginning of an emergency as temporary accommodation pending transfer to a suitable, safe, long-term camp; or else, at the end of an operation as staging point of return. This later could work given the current state of the SC4 camp. Generally, transit camps do host either intermediate or short-term installations and they may also host returnees. Empirical evidences from IRA (Interim Regional Administration), mainly according the Disaster Risk Management Commission (DRMC) and Emergency Shelter Non-Food Items (ES/NFI) sub-national cluster, do reveal that construction of new shelters and camp for IDPs is not allowed/encouraged after the first returnee phase has been accomplished following the CoHA. Small camps and collective centers will be closed, except SC4 in Mekelle and Mai Dimu in Shire: they are supposed to stay temporarily till durable solution maintained.¹⁹⁸
- iii. *Scenario 3:* The camp continues to exist, albeit shrinking its size and with the land use change to other spatial zones and population reduction. As a matter of fact, it has the potential to serve as future development of the adjacent Mekelle Industrial Park and/or other industrial

¹⁹⁷ The presence of disabled, handicapped and life-impaired persons is considerable. This makes the provision of *ad-hoc* services necessary. The camp could accommodate these facilities, also serving the city and the region.

¹⁹⁸ Return management is supported by UNHCR and other partners, despite some challenges from the Federal and Amhara regional state forces (Mekonen, 2023). After CoHA there were promises to return all IDPs. So far, in actual sense, there is still no going accordingly agreement, so SC4 camp still have the chance to stay as a camp especially for the IDP coming from western Tigray and from other regions in Ethiopia. It may also serve as a transit camp for the near future.

investments as allotted in the last Mekelle city master plan of 2016.¹⁹⁹ In recent years, especially since January 2025, the construction of new small-scale industries has been underway, as the municipality seeks to attract investment and revitalize the city following the war.

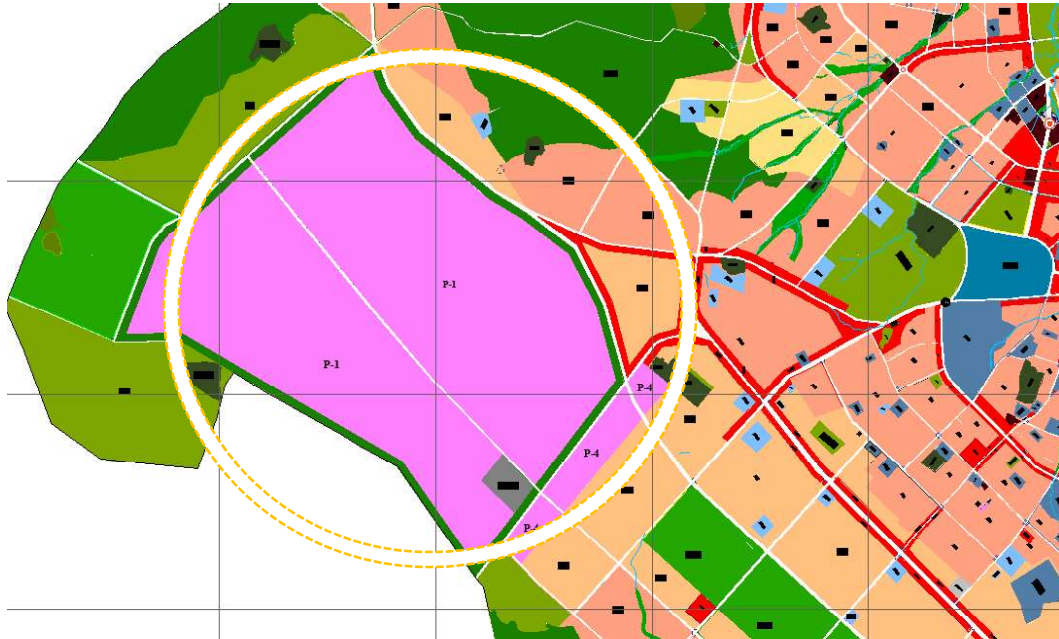


Figure 109: SC4 camp located within the industrial land-use zone (Source: Mekelle city master plan, 2016)



Figure 110: Industrial building/garage under construction adjacent to the camp (Source: Patassini D. 2025)

- iv. Scenario 4: The camp continues for those IDPs who live in the city's host community who want to resettle and re-integrate/relocate. As SC4 camp is under city administration and has spatial connections with neighboring peri-urban areas such as *Mayweyni*, *Serawat*, *Gefih Gereb* and *Mayemuri sub-kebeles*, the concerned IDPs can be considered citizens at all effects. As well

¹⁹⁹ See ongoing discussion on its revision to accommodate the post-war recovery demand and increase number of IDPs.

- known (and not only in Tigray), most IDPs find refuge not inside displacement camps, but in host communities often in cities as typically observed in Tigray cities and towns, which host a large number of IDPs, up to 80 percent. (UNOCHA, Ethiopia - Situation Report, 1 Mar 2024, 2024). This scenario triggers integration processes that, to be effective, require appropriate housing, land and welfare policies and not just the issuing of an identity card.
- v. **Scenario 5:** The exit and closing (decommissioning) process of the SC4 camp is directly related to the full implementation of CoHA that boldly states the respect of FDRE Constitution and maintain the *status quo ante*. That also includes respect and regain of Tigray region sovereignty which should help the IDP return. A proper camp closure could be supported by fair rehabilitation and decommissioning processes. Rehabilitation in this context is to restore sites and facilities used during the camp lifecycle so that the site can be restored to its original or planned function. This often involves repairing, upgrading or demolishing of infrastructure and buildings according to a coherent project. Besides, decommissioning is a process of ensuring rehabilitation through dismantling and management of obsolete, inoperative, or hazardous structures. The camp management agency should be involved in planning with service providers for the site decommissioning. The process should include sectoral partners (WASH, shelter, health, protection, environment, and alike) and all stakeholders that need sector specific operational guidance. According to the Sphere handbook 2018, site decommissioning and handover include appropriate rehabilitation measures that enhance the natural regeneration of the environment in and around the temporary settlements, using local labour in clearing and decommissioning activities where possible (Sphere, 2018). Different sectors, such as WASH, will fill in pit latrine, handover land, and infrastructure such as boreholes and pumps. Camp exit strategy should be prepared, and plans for decommissioning from the start (UNHCR, 2018). An exit strategy for camp closure needs to be considered when planning for camp set-up, including initial negotiations with the government, host populations, and displaced populations (IOM et al., 2015).

These scenarios are only theoretical and have not been evaluated in the appropriate fora. However, they help to recognize that any exit strategy requires a careful assessment of the state and dynamics of the camp, within it and in its relationship with the context. Providing for decommissioning from the design or planning start, as suggested by UNHCR and Sphere manuals, that could prevent the valorization of opportunities that have emerged in the camp's life cycle and imply a considerable increase in investment costs for urbanization: an overload on local finances.

2.3. Mai Dimu IDP camp (Shire)

Mai Dimu Camp and Shire Enda Selassie

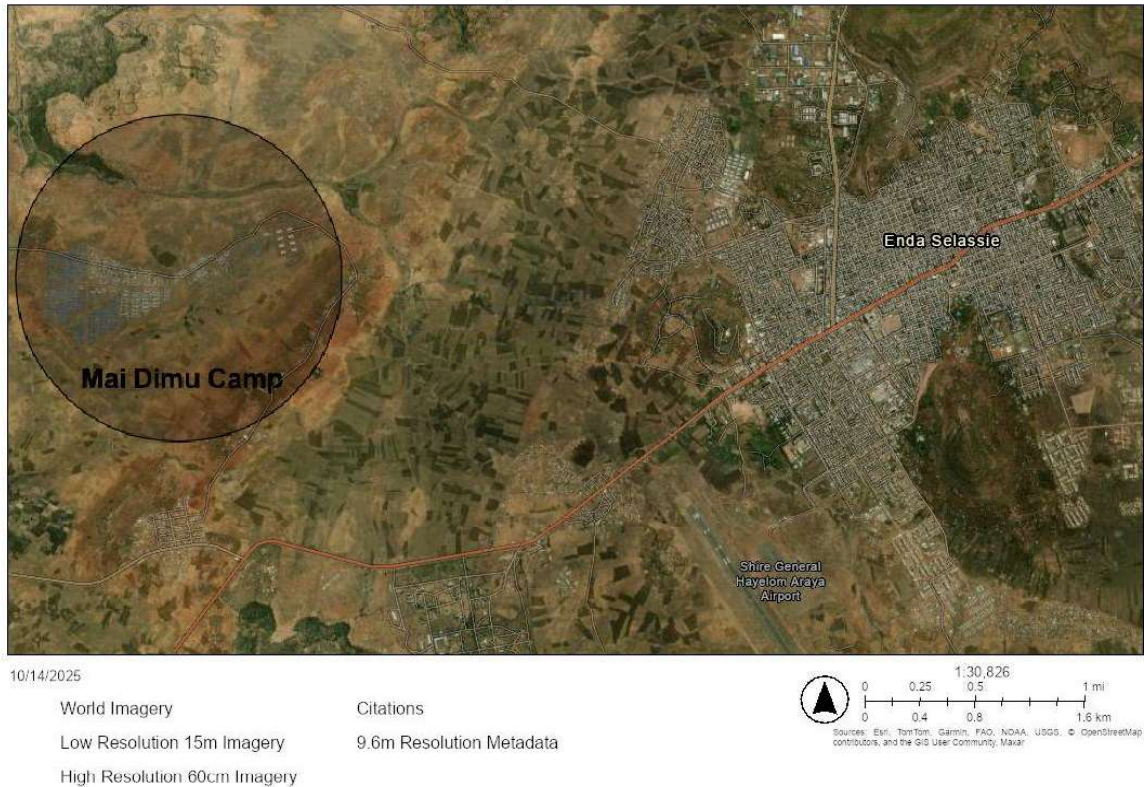


Figure 111: Mai Dimu IDP camp, Shire (Source: author, based on UNHCR open ArcGIS, 2025)

The Mai Dimu camp was examined through fieldwork conducted in May 2024 and subsequently from November 2025 onward. Initial observations took place shortly after the camp became habitable in April 2024, when it functioned as a relocation site for IDPs, primarily from Western Tigray, who were living in nearby towns such as Endabaguna and in other collective centers. Subsequent fieldwork was carried out to complement and strengthen the initial dataset, forming part of a multi-sited ethnographic and longitudinal research design. This approach enabled a spatio-temporal analysis of the camp, focusing on how its spatial organization and living conditions evolved over time.

2.3.1. Settlement and growth

In 2022, the need to host the large influx of IDPs mainly from western and North Western Tigray triggered ECHO²⁰⁰ and humanitarian origination such as IOM, UNHCR/DEC, SP, and DRC and the local government to set up the Mai Dimu (Mai Dumu) planned camp in North Western Zone, Tahitay Koraro Woreda, Tabia

²⁰⁰ European Civil Protection and Humanitarian Aid Operations (ECHO) is one of the biggest donors to Tigray crises for life-saving assistant such as emergency shelter and WASH. Mai Dimu relocation camp constructed with the support of ECHO.

(kebele) Selam, about 11 kilometers away from Shire. The camp was set up in April and May, 2022 months on a vacant area that owned by the local government.

Mai Dimu is one of the biggest planned sites constructed for the capacity of more than 3,888 households or nearly 25,000 population. The camp is constructed around the former military camp base site in flat land. The camp started with pilot shelter construction by 40 family tents of UNHCR and duplex shelters of Samaritan's Purse (SP). But unfortunately, the family tents are fully damaged by the high-speed wind and the duplex shelter also partially damaged. After that there is no family tent constructed in the site as they cannot resist heavy wind. Though the camp construction has completed till September 2022, but it is not inhabited and abandoned for almost three years from 2022 till April 2024.

Shire and its surrounding towns and villages host a substantial proportion of the internally displaced population in Tigray. In response, a large, fully planned camp was constructed as a key shelter and settlement solution. However, a notable paradox emerged: despite the availability of this purpose-built camp, many IDPs opted to reside with host families in urban areas, while others remained in makeshift or collective sites. As a result, the planned camp stood completed yet largely unused for years, while IDPs continued to live in precarious and undignified conditions characterized by inadequate shelter, poor hygiene, and limited access to basic services.

During the field visit conducted in May 2024 and mid-2025, discussion conducted with IDPs, humanitarian organizational and cluster coordinators to understand the main reasons why the camp has remained less inhabited and abandonment for years despite significant investment from ECHO. The findings indicate that several factors contributed to this situation, including:²⁰¹

- Distance from urban Shire: The camp is located far (11 Km) from the main town, while IDPs prefer to remain connected to the city for economic opportunities and social needs.
- Reluctance to relocate: Many IDPs were hesitant to move from Shire or nearby collective centers and self-settled sites due to concerns that relocating would reduce their visibility to humanitarian actors and result in diminished assistance.
- Poor site selection and harsh environmental conditions: The camp was constructed in a swampy, flood-prone area with insufficient site development, and its exposed position in an open, undeveloped landscape renders it highly vulnerable to strong winds and intense solar radiation. These environmental limitations are further compounded by the region's high temperatures during

²⁰¹ This is based on non-structured in-person and telephone interviews conducted with IOM staff between May 2024 and November 2025.

the dry season, which cause the plastic-sheet shelters to become excessively hot during daytime hours.

- Lack of essential services: Owing to its isolation from the urban area, the camp lacks fundamental services, including access to water, electricity, hospital, and education.

Displacement Camp in Shire



Figure 112: Mai Dimu IDP camp satellite map (Source: Pleiades Neo Airbus DS 2024, BBC February 2024)²⁰²

According to the UNHCR 2019 and Sphere Handbook 2018 camp, the recommended minimum surface area for camp design is 45 square meters per person, with a suggested maximum population capacity of 20,000 individuals per camp (Sphere Association, 2018). However, globally, camps often accommodate populations that exceed their planned capacities. In contrast, the Mai Dimu camp has remained substantially underutilized, hosting only about 9,000 individuals despite the Shire area—and North Western Tigray more broadly—having some of the highest concentrations of IDPs in the region.²⁰³ In April 2024, approximately 1,050 IDP households were relocated from collective centers in Endabaguna town to Mai Dimu camp, marking the first major group of inhabitants, with support from the IOM CCCM unit, local authorities, and humanitarian partners.

²⁰² <https://www.bbc.com/news/articles/c1012vvjy9lo>

²⁰³ IOM CCCM, *Site Management Agency Report*



Figure 113: CCCM office in Mai-Dimu Planned camp (Source: author, May 2024)²⁰⁴

2.3.2. Layout and demographic profile

The Mai Dimu camp is situated outside the administrative boundaries of Shire, in a rural village area characterized by dispersed host settlements and limited infrastructure. The camp is accessible via the asphalt road connecting Shire to Dedebit, followed by an unpaved road leading to its eastern section, where the terrain is dominated by reddish soil. After being abandoned for approximately two years, the camp became habitable for the first time with the relocation of IDPs from Endabaguna Town on April 2022. IDPs were relocated from other collective centers to a camp featuring duplex tarpaulin emergency shelters arranged in a looped cluster around communal open courtyards, with additional shelters aligned linearly along the gravel road near one of the camp's gates.

According to the service monitoring summary dashboard from the CCCM Cluster in Tigray, Ethiopia, the total population of the camp is 1,650 households or 8,146 individuals. Although the camp was originally designed to accommodate over 20,000 people, it currently hosts significantly fewer residents.²⁰⁵ Multiple rounds of relocation to the camp have been carried out, beginning with the first round in April 2024, which involved 1,050 IDPs. In December 2024, a total of 2,039 individuals were relocated to Mai Dimu.

In May 2025, IOM CCCM facilitated the relocation of 1,136 IDPs, followed by the relocation of 1,433 IDPs in June 2025, from Endabaguna to the planned site of Mai Dimu in Tahtay Koraro Woreda. These operations were conducted in close coordination with IDP representatives, governmental authorities, humanitarian clusters, partners, and the Relocation Task Force (RTF) in Shire. The relocated IDPs had

²⁰⁴ The researcher conducted fieldwork for three weeks in May 2024 and four weeks in 2025, which provided an opportunity to recheck the information collected. In addition, the first two months of 2026 were also included.

²⁰⁵ According to various sources, the camp was designed to accommodate a population of 20,000 to 25,000 people.

previously been living in precarious conditions within host communities and collective centers in Endabaguna.²⁰⁶ Among the vulnerable IDPs, including persons with disabilities, a total of 398 individuals were identified, of whom 302 were male and 96 were female.

Table 18: Population by age and gender of the camp (CCCM cluster Ethiopia, service monitoring camp profile)

Population by age and gender		
Age group	Male	Female
60+	301	275
18-59	840	1007
12-17	629	560
5-11	1,174	1,119
0-4	889	952
Total	3,833	3,913

Given the disparity between the camp’s originally planned capacity and its current population²⁰⁷, the settlement’s population density remains very low, resulting in a disproportionately large allocation of land per individual. This situation contrasts with typical humanitarian planning guidelines, which recommend much denser allocations: for example, the UNHCR Camp Management Toolkit advises a minimum of 30 m² per person, rising to 45 m² when space is devoted to garden plots or small-scale agriculture. Furthermore, analyses of existing humanitarian settlements show that average densities often range far above what such under-populated camps would suggest.²⁰⁸

2.3.3. Facilities, services and infrastructures

Camps for displaced populations are designed not only to provide physical protection but also to ensure access to essential basic services that support residents’ safety, dignity, and overall well-being (Sphere Association, 2018; UNHCR, 2007). Unlike refugees who cross international borders, internally displaced persons (IDPs) remain within their own country and therefore benefit from national protection frameworks, although they continue to rely heavily on adequate facilities, services, and infrastructure to meet their specific needs (IASC, 2010). Moreover, to foster positive relations between IDPs residing in camps and the surrounding host communities, it is recommended that humanitarian actors extend selected services and resources to host populations as well, thereby promoting social cohesion and reducing the potential for tensions (Sphere Association, 2018; UNHCR, 2014c).

IDPs residing in camps situated near urban areas can place significant pressure on municipal services and infrastructure, particularly in towns with limited preparedness or resilience. Such strains may impact access

²⁰⁶ <https://reliefweb.int/report/ethiopia/ethiopia-esnfi-cluster-partner-operational-presence-monthly-response-monitoring-dashboard-amhara-tigray-30-november-2024>

²⁰⁷ By the end of May 2026, the camp population reached 2,300 households (HH) and 10,715 individuals.

²⁰⁸ UNHCR. (2015). *UNHCR handbook for emergencies* (4th ed.). United Nations High Commissioner for Refugees.

to water, sanitation, health services, and waste management systems, potentially heightening between displaced populations and host communities (UN-Habitat & UNHCR, 2020). To mitigate these impacts and foster social cohesion, humanitarian agencies are encouraged to extend selected basic services and resources to host communities, ensuring more equitable support and preventing surrounding residents from experiencing disproportionate burdens (Sphere Association, 2018; UNHCR, 2014c).



Figure 114: Sources and partners of humanitarian Sds²⁰⁹ (Source: author 2025)

An overview of humanitarian service provision in Mai Dimu camp can be organized according to service type and the involvement of various humanitarian agencies.

²⁰⁹ service delivery system (Sds)

Table 19: Humanitarian services and responsible agencies (Source: IOM,2023)

Camp management agency		IOM-Ethiopia
Camp administration		Tahitay Koraro Woreda
Site name		<i>Mai Dimu</i> (Mai Dumu)
Current population		8,000 +
SN	Humanitarian services	Providing agency
1.	WASH	IOM, HIS, MTI
2.	Shelter	IOM, UNHCR, SP, DRC, currently active is IOM only (2025)
3.	ESNFI	IOM (2025)
4.	Health	IOM
5.	Food	World Vision Ethiopia
6.	Nutrition	IRC currently IOM also
7.	Education	IRC
8.	Protection	
	8.1. Desk	IOM
	8.2. Child protection	IRC
	8.3. WGSS and GBV	
	8.4. Legal Aid	
9.	Family link restoration	
10.	MHPSS	IOM

Emergency shelter

When the camp was established in 2022 as a pilot project, UNHCR provided 800 family tents to accommodate 800 households, while Samaritan’s Purse (SP) constructed duplex shelters at the western and southwestern ends of Mai Dimu camp as sample emergency shelters. However, the family tents were quickly damaged due to strong winds in the area, and the SP shelters were also affected by the adverse weather conditions. Subsequently, full site planning done by IOM and camp construction were undertaken by humanitarian partners, including IOM, SP, UNHCR/DEC, and DRC. Following the first camp’s occupation in April 2024, all shelter agencies and partners continued rehabilitation and maintenance activities, with the exception of SP, which had phased out of the project.

Table 20: Shelter partners commitment in Mai Dimu IDP camp (Source: IOM, CCCM site plan)

Humanitarian partners	Camp zone	No and type of Shelters	Households	Individuals
IOM	partial 3 and 4	647 duplexes	1,294 HH’s	6,470
Samaritan's Purse (SP)	1,2 and partial 3	901 duplexes	1,802 HH’s	9,010
UNHCR	5	250 duplexes	500 HH’s	2,500
DRC	6	90 duplexes	180 HH’s	900
Unassigned	partial 3	44 duplexes	88 HH’s	440

In planned, agency-led responses, a uniform and standardized shelter design is often employed to streamline logistics, ensure minimum standards, and simplify site planning (UNHCR, 2015a). All

emergency shelters in the camp adhere to a uniform typology, commonly referred to as the duplex type shelter, designed to accommodate two households. Each structure measures either 3.5 m × 10 m for duplex units or 3.5 m × 5 m for single-household units. These shelters are constructed using tarpaulins or plastic sheeting—typically 4 m × 6 m sheets supplied by IOM, 4 m × 5 m and 4 m × 50 m role by UNHCR, and approximately 4.5 m × 6 m sheets from Samaritan’s Purse—along with supporting poles. Although these emergency shelters were originally intended to have a maximum lifespan of six months, they have now been in use for more than three years, receiving only limited routine and periodic maintenance.

Modifications and alterations to tarpaulin-based emergency shelters are common, although they are generally not sanctioned by the camp or site management authorities. For instance, residents often add shades or extensions to create additional indoor or outdoor space, provide protection from harsh sunlight, or adapt shelters to changing household needs. In some cases, residential shelters have been repurposed for small-scale commercial activities, such as shops or barbershops. While the camp provides a communal kitchen for the preparation of local foods, such as *Enjera* cooked on traditional stoves known as *mogogo*, residents frequently prepare daily meals either inside their plastic shelters or immediately outside them. Within the shelters, traditional arrangements for sleeping and seating, typically constructed from mud and stone and referred to as *medeb*,²¹⁰ are maintained. To hang personal belongings, residents often string ropes from one end of the shelter to the other.



Figure 115: Alteration of emergency shelter and activities in the camp (Source: author May, 2024)

²¹⁰ *Medeb* is traditional structure common in vernacular house of rural area in Tigray which is made of mud and small stones.

During the field mission in the camp, residents were asked to identify the main challenges they experienced while living in emergency shelters constructed from plastic sheeting or tarpaulin. The most commonly reported issues included poor construction quality, worn-out and deteriorating plastic sheets, unstable shelter structures, lack of routine maintenance, theft, limited accessibility for people with disabilities (PWDs), inadequate ventilation, insufficient privacy, and concerns regarding safety and security. Additionally, residents emphasized that the shelters were originally designed solely for emergency use, making them unsuitable for long-term habitation.

Table 21: Major challenges in shelter (Source: author, 2025)

Major challenges	Details from camp the residents
Poor quality of shelter construction	Since the shelters are not habitable for more than two years after construction, their expected life cycle is completed. Hence it is obvious to find unstable structure of shelters.
Theft	Newly maintained shelter experienced theft of plastic sheet and inhabited shelter also likely the chance of theft of plastic as well as poles.
Safety and security	A serious safety and security issues at night specially for female headed households.
Privacy concerns	All the camps shelter are duplex emergency shelters which they share communal plastic wall. As most families have an average family size of 5, with in the 3.5m*5m (single unit) it is obvious sound disturb the adjacent households and totally lacks privacy to practices conduct basic religious, cultural and human rights.
Difficult for people with disability (PWD),	All shelters constructed typically following the standard design, which is not inclusive and lack comfortable for PWD. Ramp and other supportive elements are not provided for disabled disabilities and people with reduced mobility.
Poor ventilation	The single unit 3.5m*5m shelter has one small window with a size of 0.4m*0.6m only.
Lack of maintenance	The life span of the emergency shelter is six months. However, the camp is almost three years so the emergency shelter needs serious replacement or maintenance. In most case the emergency shelters expected to change into transitional shelter for improved living condition and cost effective over time.
Worn-out plastic sheet and unstable structure	Emergency shelter with more than three years the envelope and structure is affected by the sun and rainwater. Specially SP plastic sheet is worn-out and damaged than the IOM and UNHCR's and leakage problem according the shelter experts in the area.

Water, sewerage and sanitation (WASH)

During the initial relocation of IDPs to the camp in April 2024, water was supplied by WASH partners, primarily through the IOM WASH unit, using water trucking. Given the camp's distance from the municipal water network and budget constraints, installing a permanent water line was initially not feasible. Water from tanker trucks was temporarily collected in elevated plastic tanks and distributed to communal taps within the camp. Over time, the emergency water trucking system was gradually replaced with a permanent

waterline connected to the main supply line passing to Shire by the support of IOM WASH unit. Additional humanitarian actors, including IHS and MTI, subsequently joined efforts to support water and sanitation services.²¹¹

Based on the anticipated influx of IDPs, the camp is designed to provide a daily water supply of 291,000 liters, corresponding to 15 liters per person per day (L/p/d). Water is distributed through 156 tap stands located at 26 points throughout the camp. Sanitation facilities include 728 latrine drop holes or stances, yielding an average of 27 individuals per latrine. Additionally, 520 bathing spaces are available, resulting in a ratio of 38 individuals per bathing facility. These WASH (Water, Sanitation, and Hygiene) provisions comply with UNHCR standards for emergency settlements and the Sphere minimum standards, ensuring adequate water, sanitation, and hygiene services for displaced populations (Sphere Association, 2018; UNHCR, 2007).



Figure 116: IDPs queuing at water point to access potable water (Source: author May, 2024 and December, 2025)

During the design and construction of the camp, communal latrines and showers were planned in accordance with minimum humanitarian standards. During the emergency phase, the standard for communal sanitation facilities is one toilet and shower per 50 persons, with separate areas for men and women, well-drained shower spaces, and convenient proximity to shelters to ensure accessibility both during the day and at night (Sphere Association, 2018). UNHCR and WASH partner organizations have supported the construction and ongoing operation of these facilities in the camps and its management.

IDPs, however, continue to face challenges when using communal latrines and showers, including poor hygiene conditions, limited water supply, and safety concerns, particularly at night. To address these challenges and reduce the risk of water, sanitation, and hygiene (WASH)-related diseases, WASH partners have employed incentive workers such as latrine cleaning attendants (LAs) and community hygiene promoters (HPs). These personnel are responsible for daily cleaning and monitoring of sanitation facilities,

²¹¹ Innovative Humanitarian Solutions (IHS) and Medical Teams International (MTI) are both active in Tigray, implementing programs across various sectors, including water, sanitation, and hygiene (WASH) initiatives.

as well as conducting awareness-raising campaigns on health, hygiene, and environmental sanitation. Such interventions help prevent WASH-related diseases, including malaria, scabies, and cholera.²¹²

Similar to the challenges observed in shelter and site planning, the design and layout of latrine and shower facilities often remain uncomfortable and difficult to access for persons with disabilities (PWDs), primarily due to limited circulation space and compact dimensions. All emergency-phase latrines employ a common seating type with a squat plate (squat latrine) known as SaTo Pan, which is made of polyethylene and installed over a concrete-slab pit latrine.²¹³ In contrast, IDPs residing in collective centers either utilize existing latrine structures or use polyethylene squatting plates that function as a slab.

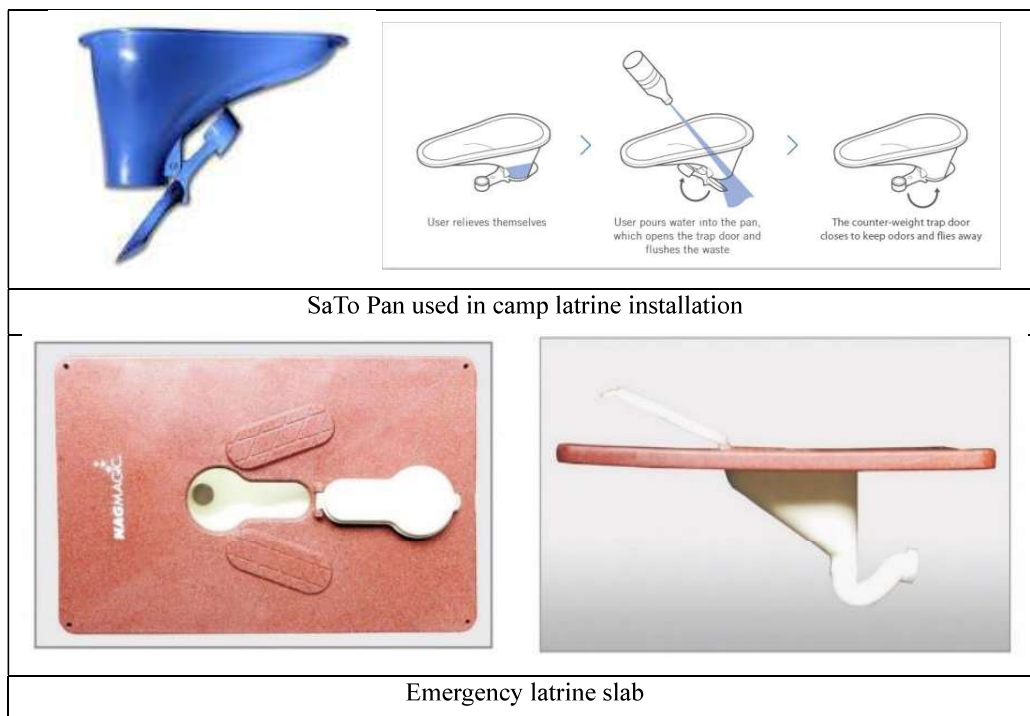


Figure 117: Emergency latrine in camp

Humanitarian WASH partners, including IOM and collaborating organizations, are actively supporting emergency water supply, sanitation services, and hygiene promotion activities. Their efforts include the distribution of soap and water treatment chemical sachets, water trucking through the existing water supply lines, and the ongoing rehabilitation of water points. These interventions aim to promote safe hygiene practices and prevent the spread of waterborne and hygiene-related diseases.

²¹² The observance of Handwashing Day provides an opportunity to enhance hygiene awareness and reduce WASH-related health problems. However, limited access to sanitary materials and inadequate hygiene promotion contribute to seasonal increases in scabies cases. In response, the WASH Cluster, in collaboration with WASH and health partners, addresses the rising incidence of scabies and bedbug infestations.

²¹³ SaTo Pan is a toilet pan that uses a mechanical and water seals to close off pit latrines from open air. This reduces disease transmission from flying insects that come into contact with human waste. It also eliminates the unsightly appearance and odors from open pit latrines and reduces the volume of water needed to flush.

Table 22: Camp WASH requirements as per established standards (Source: IOM CCCM)

Indicators	Achieved in design	Individual
Water supply	291,000 Litters per Day	15 liter per person per day
Water taps	156 tap heads in 26 locations	1 water tap per 80-100 persons
Total No. of latrines	728 drop holes/stances	with a ratio of 27 individual per drop hole
Total No of bathing showers	520 bathing space	with a ratio of 38 individual per bathing space

Energy and power supply

Mai Dimu camp established without access to electricity from the main grid and is not connected to the national power network. However, electricity line is passing along the camp crossing zone 5 and 6. Solar-powered streetlights installed (142 units proposed) installed to provide lighting at night, contributing to improved safety, security, and a sense of dignity for residents. Despite these benefits, there are incidents of an attempted theft targeting the solar equipment and metal poles. Inside the shelters, residents commonly use solar lamps, which are provided by shelter partners as part of non-food item (NFI) support. For charging electronic devices, camp residents primarily rely on solar energy. In some instances, they travel to nearby host communities in the peri-urban areas or towns within Shire to charge batteries for their devices. In rare cases, IDPs purchase larger solar panels, capable of providing up to 200 W of power, to operate televisions. The camp is entirely dependent on firewood and charcoal for a traditional way of cooking methods. Clay type traditional stove called *midja* and *mogogo* use extensive fire wood and charcoal. These energy sources are sold both within the camp and in surrounding areas. However, accessing free firewood and purchasing is challenging as a result incident of vandalism – such as cutting poles or looting unoccupied shelters – are common, posing security threats. IDPs also move far from the camp to collect firewood by cutting trees, which contributes to deforestation and harms the environment and local ecology, sometimes it leads to tension with host communities.

Like other rural areas in Tigray, women and girls primarily mainly responsible for firewood collection and preparation of food, which disproportionately affects them and exposes them to risks of exploitations, physical exhaustion and even violence. The lack of access to energy and electricity forced the displaced population in the camp to struggle and undermining their health, safety, and dignity (Commission of Inquiry on Tigray Genocide, 2025).²¹⁴

²¹⁴ These findings are similar with the A Special Assessment Report released on August 2025 by The Commission of Inquiry on Tigray Genocide on IDPs in Tigray entitled “The Plight of Internally Displaced Persons in Tigray.”



Figure 118: Solar panel providing lighting and mobile phone charging facilities (Source: author December, 2025)

Educational facilities and services

All settlers were relocated from the Endabaguna IDP site in multiple phases, and there are currently no formal educational facilities available for students in Mai Dimu camp. Education is limited to child-friendly spaces (CFS) operated by humanitarian organizations such as the International Rescue Committee (IRC). According to a report from August 2025 by the Commission of Inquiry on the Tigray Genocide, 240 students who were previously enrolled in schools at the Endabaguna IDP site are now out of school. However, within a twenty-minute walking distance in the host community, there are two nearby schools: one elementary school serving grades 1–8 and one high school serving grades 9–12.

Although a nearby school exists, it can accommodate 90 students per classroom and is difficult to enroll the additional 240 students from the camp due to severe overcrowding. Furthermore, IDP students face additional barriers to education, including a lack of learning materials and their families' inability to afford them, contributing to high dropout rates.²¹⁵

Within the overall camp layout design, two parcels of land were allocated for educational purposes: the first, measuring 2,744 m², is located at the junction and edge of Zone 4, bordered by two main roads, while the second, covering 2,365 m², is centrally situated within Zone 5 and oriented toward the primary road network to enhance accessibility. However, despite these planned spatial allocations, no formal school facilities have been constructed in practice; instead, only Child-Friendly Centers have been established, and formal education services are not currently provided within these designated areas in the camp.

²¹⁵ *ibid*

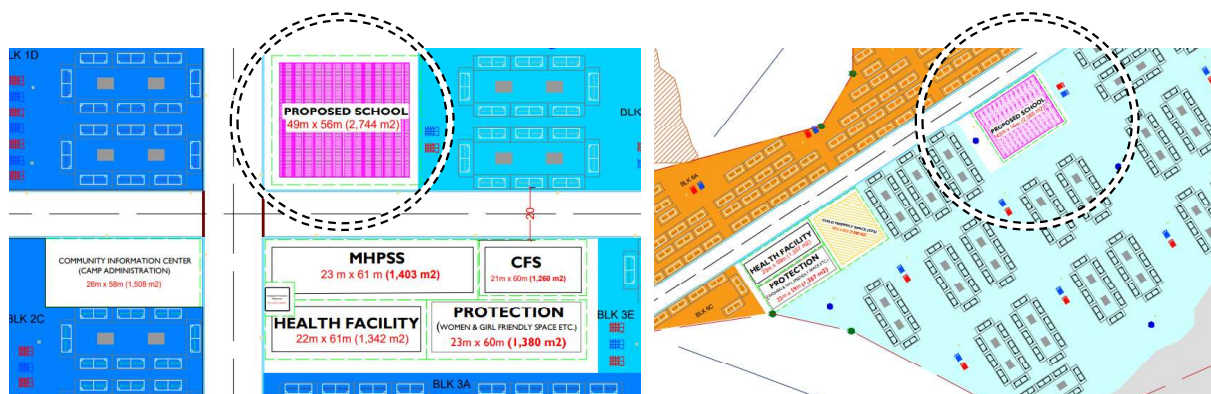


Figure 119: Proposed school facilities in the camp site plan (Source: IOM May 2024)

Healthcare

In the camp IOM Health Unit is responsible for the health sector, primarily managing the clinic. The clinic provides basic outpatient services (OPD) and maintains a referral system with Shire Suhul Hospital. In addition, IOM delivers mobile health services to surrounding IDP sites, offering essential medications and limited laboratory services. Upper respiratory tract infection is a major health issue in the camp. Diarrhea remains also major public health concern, largely attributable to inadequate access to clean water, poor sanitation, and unhygienic living conditions. To mitigate these risks, IOM has constructed latrines, conducted regular water trucking, and provided households with water treatment solutions and safe storage jerry cans to ensure access to potable water. WASH - related diseases, including malaria, scabies, and cholera, remain prevalent.

Humanitarian WASH partners provide clean water through water trucking and have installed 156 water tap stands across 26 locations. Aqua tabs are also distributed for water purification and quality checked at household level. However, due to poor water-handling practices, waterborne diseases remain common, and cases of diarrhea are frequently reported. A respondent from Zone 3, Block A stated, *“My family has suffered from recurring illnesses such as diarrhea and other waterborne diseases.”* These challenges are largely linked to the limited availability of clean water and the resulting unhygienic conditions.

Complementing health services, the International Rescue Committee (IRC) operates Child-Friendly Spaces (CFS) and Women and Girls Friendly Spaces (WGFS) to support children and women affected by the conflict, addressing trauma and providing psychosocial support. The WGFS programs specifically target adolescent girls and women affected by gender-based violence (GBV), offering counseling and psychological support. The IOM Mental Health and Psychosocial Support (MHPSS) unit coordinates these services, utilizing trained IDPs and community incentive workers to identify individuals with mental health needs and provide appropriate psychosocial interventions.

In terms of spatial planning, essential community and health support facilities are strategically distributed within the camp to ensure accessibility and functionality. Two Child-Friendly Spaces are established: one in Zone 3 (central zone) covering 1,260 m², and the other in Zone 5 (eastern zone) encompassing 1,890 m². Two Women and Girls Friendly Spaces are also provided, measuring 1,380 m² in Zone 3 and 1,357 m² in Zone 5. Healthcare infrastructure includes two health facilities: one in Zone 3 (1,342 m²) and one in Zone 5 (1,357 m²). Additionally, a Mental Health and Psychosocial Support center of 1,403 m² is located in Zone 3 to deliver specialized services. Youth recreation areas are also allocated within the camp layout, serving as general play spaces for residents.²¹⁶ These provisions reflect an integrated approach to camp design, prioritizing the physical, psychological, and social well-being of the displaced population.

The services offered by emergency health units, the prevalent health conditions, and the main causes of illness in Mai Dimu camp are similar to those in SC4, with both sites receiving support from the same humanitarian agency (IOM). However, malaria constitutes a more significant public health concern in Shire, as well as in northwestern and western Tigray, primarily due to the region's microclimatic conditions that favor mosquito breeding and disease transmission. The health unit provides a comprehensive range of primary healthcare services, which are outlined below.

- Outpatient department (OPD) adult and pediatric
- SRH (sexual reproductive health) Prenatal care, postnatal care, and child health monitoring. Nutrition screening and referral linkage
- Expanded Program on Immunization (EPI) health services
- Nutrition: all except 5 Targeted Supplementary Feeding Program (TSFP)
- Delivery service
- Risk Communication and Community Engagement (RCCE)
- Basic lab services
- Mental Health Support -Counseling services for trauma-related issues due to displacement.
- Emergency Medical Services -Immediate care for acute medical conditions or injuries.
- Vaccination campaign and routine Immunizations for preventable diseases (e.g., measles, polio).
- Referral

Top five diseases in Mai-Dimu site are:

- Upper Respiratory Tract Infections (URTIs) - Commonly, colds, flu, and sinusitis.
- Watery diarrhea - Often caused by consumption of contaminated water.
- Skin disease - Conditions such as scabies, fungal infections, and dermatitis.

²¹⁶ This analysis draws on the camp master plan prepared by the IOM within the framework of CCCM Cluster operations.

- Intestinal Parasites- Common parasites include roundworms and hookworms. With Symptoms: Abdominal pain, diarrhea, malnutrition.
- Pneumonia – infection lungs

Main causes of diseases in the camp:

- Overcrowding, Poor Sanitation and Hygiene, Malnutrition
- Insufficient medical facilities and personnel hinder timely treatment of diseases.
- Environmental factors
- Unsanitary living conditions can lead to vector-borne diseases (e.g., malaria).
- Affected age groups, children under 5 years old
- Highly vulnerable to respiratory infections and diarrheal diseases due to developing immune systems.
- Adults (Ages 18-60) and larger family sizes

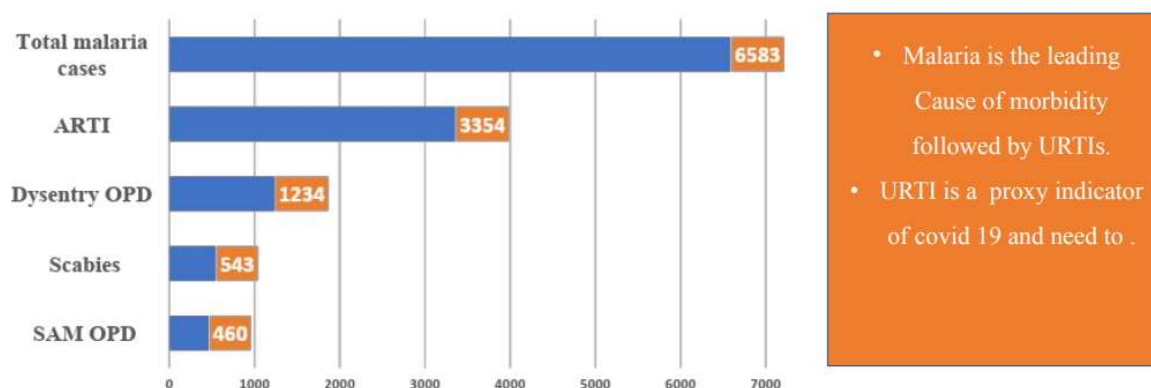


Figure 120: The top five causes of morbidity vary depending on the season (Source: health cluster update, 2023)

2.3.4. Consumption and market transaction

Market centers and income-generating activities play a vital role in supporting the livelihoods of IDPs by facilitating access to goods, services, and economic opportunities within the camp. According to the UNHCR Emergency Handbook (2007), camp planning and settlement standards recommend that large camps with populations exceeding 20,000 individuals should include an open market equipped with appropriate boundary structures (UNHCR, 2007). In alignment with these guidelines, two designated commercial/market spaces are established in the camp—one in Zone 3, covering an area of 1,804 m², and another in Zone 4, measuring 1,680 m². In practices the two assigned market places are not operational. However, small-scale shops in side a shelters and informal open-air markets—locally referred to as *gullit*—also operate outside the designated commercial areas, in the junctions of zones of the camp further contributing to the economic vibrancy of the camp.

Camp residents also rely mainly on the local market in Shire to meet their daily needs. Many IDPs frequently walk to the city to purchase essential goods, as prices there are often cheaper than those in small shops within the camp. This dependency highlights the limited availability and higher cost of basic items inside the camp. Most respondents mentioned that, on average, they visit Shire once a week—both to shop at the open market and to meet with family and friends from their places of origin or relatives living in the Shire area.



Figure 121: Shelter-based retail shop and DSTV house in the camp (Source: author May, 2024 and December, 2025)

2.3.5. Road and drainage

Two types of roads with different widths size constructed by IOM during the initial site development phase. According the design road patter network layout runs both East-West and North-South directions. The site is organized into six zones within the camp delineated by the widest road-an arterial road - serving as the primary route for movement and access. All roads constructed are of the earth road type, with minimal site development undertaken to improve usability. The arterial roads measure 25 meters in width, while the secondary roads are 20 meters wide. Internal roads were not constructed within the zones and blocks, with the exception of a single road that bisects Zone 3 and 4, the two largest zones with in the camp and the road width is 17 meters. The distribution of blocks and shelters across the zones varies according to land suitability and the availability of space. Although the original plan designated an access route along the road separating Zones 5 and 6, the current primary access point to the site is provided by a road located between Zones 2 and 3.

The site is unenclosed and can be reached from Shire through two access routes located on the eastern and southern sides of the camp; however, the eastern route is not commonly utilized. Access to the site from the main road is available to pedestrians, cyclists, and motorized vehicles. Three-wheeled vehicles are typically used for passenger transport, while larger motorized three-wheelers serve for the conveyance of goods and other freight items.



Figure 122: Modes of transportation operating within the camp (Source: author December, 2025)

Site improvement was implemented to enhance accessibility within the camp for people with disability (PWD), women, children, and the elderly. However, the camp remains only partially accessible, as movement between service delivery areas and individual shelters is not fully connected and accessible. Additionally, all Shelters also lack ramps and supportive structure at entrances, which limits their accessibility and doesn't align with inclusive design principles and *Do No Harm* principle of the core operational principles of humanitarian sectors.

The camp contains two gorge areas that goes from East to West that are unsuitable for both shelter construction and road development due to their unstable terrain. As a result, no shelters built in these low-lying sections. However, shelters located near these areas are affected by flooding during the rainy season, locally known as *Kiremti* (summer). Appropriate drainage needs to be put in place, especially relevant in locations that experience a rainy season or flash floods. Establishing adequate buffer areas around these gorges is essential to ensure shelter safety and protection from seasonal flooding. Camp site gradient within 1 to 5% is standards and the ideal is between 2-4%.



Figure 123: Site improvement in the camp (Source: author December, 2025)

2.3.6. Camp design and planning features

Camp design and planning for displaced people applies the urban design and planning principles, especially in protracted displacement contexts and development-oriented responses. However, emergency contexts, political resistance, and funding constraints can limit their implementation. According to the UNHCR book of *The Master Plan Approach to Settlement Planning Guiding Principles*, humanitarian settlements such as camp its establishment should aligned to national, sub-national and local development plans and facilitates efforts to link humanitarian responses with long-term development efforts. The approach is based on three spatial scales relevant to design and development of camp settlement; macro, meso, and micro (UNHCR, 2015b).

The average lifespan of an IDP camp is over 10 years, though this figure can vary significantly depending on the country and conflict context (IDMC, 2024). The choice of planned camp site selection is a critical decision which impact the protection and well-being of the displaced as well as broader local development. Mai Dimu camp which is 62-hectare area located around 11 Km farm from Shire found in a swampy area of vacant land with one vehicle rout to the site. Someone can able to see the camp when following an asphalt road from Shire to Dedebit. The site is prone to flooding and lack access to services such as hospital, market and educational facilities.

Mai Dimu camp is highly vulnerable to flooding, particularly during the rainy season from June to August, when heavy rainfall significantly impacts shelters located in swampy and low-lying areas. The topography of the site reveals a decreasing slope from east to west, which contributes to poor drainage. Shelters situated

western parts (e.g., Zones 2 and 3) are especially exposed to flood risks due to their location in these low-slope, flood-prone areas. According to UNHCR and Sphere camp-planning standards, the ideal ground slope for a camp site is around 1–5%, with a more preferred slope of 2–4% for good drainage; slopes above 10% should be avoided to reduce erosion risk and costly site preparation (Sphere Association, 2018; UNHCR, 2025b). Drainages lines are constructed along the main roads in front of the shelters and connected to the small culvert. A total of five culverts proposed during the camp site planning process to address the elevation difference across the terrain. They were positioned along the main axial road, which runs from east to west and spans 20 meters in width.

The camp layout follows the existing natural slope of the land, and the block pattern is uniform across all zones - except the smallest zone of 6 which the shelter block layout is linear type and follow the main road. Zone 1 to 5 follows a similar cluster-type shelter arrangement, where each shelter faces inward toward a central courtyard space. Each shelter cluster typically consists of 8 to 10 duplex units, although some clusters contain fewer units to better adapt to the site's topography. The open central space serves as both an open courtyard and a communal space for residents. Within each of these central courtyard-measuring approximately 15 meters by 60 meters in some zone 15 meters by 45 meters - there are two communal kitchens, each with a dimension of 4 meters by 6 meters. Inside the communal kitchens, the residents from each cluster have constructed traditional cooking stove type locally known as *mogogo*.

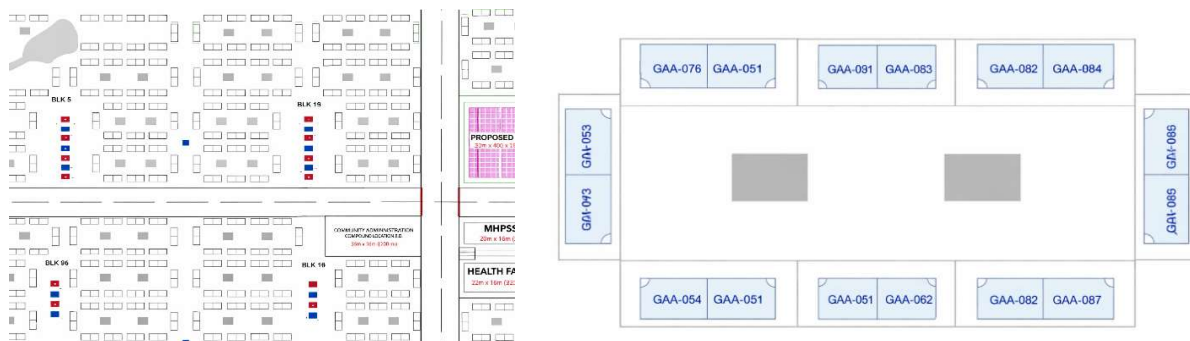


Figure 124: Layout of shelter blocks around the communal space of courtyard (Source: IOM, CCCM 2024)

The camp road more or less follows the grid layout. Grid layout less considered the site topography result in costly soil removal and drainage works. Though the grid system of the road undermines the social-cultural identity of displaced population the cluster system layout of the shelter and the courtyard (traditionally called *mereba*) greatly support the original placed housing style and reinforce the social communication and bond and use the communal space for cooking also.

UNHCR takes a ‘modular approach’ to settlement planning starting with the family unit as the smallest planning ‘module’ and building up to larger units as follows:

Table 23: UNHCR standard for camp design and planning based on 'module' approach (UNHCR, 2007)

Module	Structure	Number of persons
1 family	1/family	4-6 persons
1 Community	16/families	80
1 Block	16/communities	1,250
1 Sector	4/block	5,000
1 Settlement	4/sector	20,000

The modular divisions are accompanied with modular distribution of services on the level of family, communities, block and sector. The modular approach helps to structure the sheltering pockets of the settlement, it also facilitates the management of the settlement development works, commonly developed in phases, from reception to plot allocation. Modular planning does not necessarily mean using a grid layout for the site. Consider the allocation of water and sanitation facilities at household level. Communal sanitation facilities should be avoided as they represent high protection risks. Communal facilities are considered an option of last resort and should not be used beyond the first six months of an emergency response.

Table 24: Service provision based on UNHCR standard for camp design and planning (UNHCR, 2007)

Services/infrastructure	Number of persons
1 water tap	1 community (80-100 persons)
1 latrine	1 family (6-10 persons)
1 health center	1 site (20,000 persons)
1 referral hospital	10 sites (200,000 persons)
1 school block	1 sector (5,000 persons)
4 distribution points	1 site (20,000 persons)
1 market	1 site (20,000 persons)
1 feeding center	1 site (20,000 persons)
2 refuse drums	1 community (80-100 persons)

A detail analysis of the camp revealed that the general layout is modular shelter units' arrangement, which road arranged based on grid road layout. The modular shelter arranged each other to form cluster system with a central communal open space from zone 1 to 5. In zone 6 the shelter arranged in a linear organization aligned with main axis of the camp. Blending the different layout of road and shelter help to balance efficiency, privacy and community cohesion.

Table 25: Camp settlement, type of shelter and households (Source: IOM, CCCM 2024)

Zones	Blocks	No and type of Shelters	House Holds	Individuals
Zone-1	4	291 duplexes	582	2,910
Zone-2	6	399 duplexes	798	3,990
Zone-3	8	557 duplexes	1,114	5,570
Zone-4	4	347 duplexes	694	3,470
Zone-5	4	256 duplexes	512	2,560
Zone-6	3	90 duplexes	180	9,00
Total		1940 duplex	3,880	19,400*

- Average family size per household is five individuals per shelter in case of Tigray (Ethiopia).

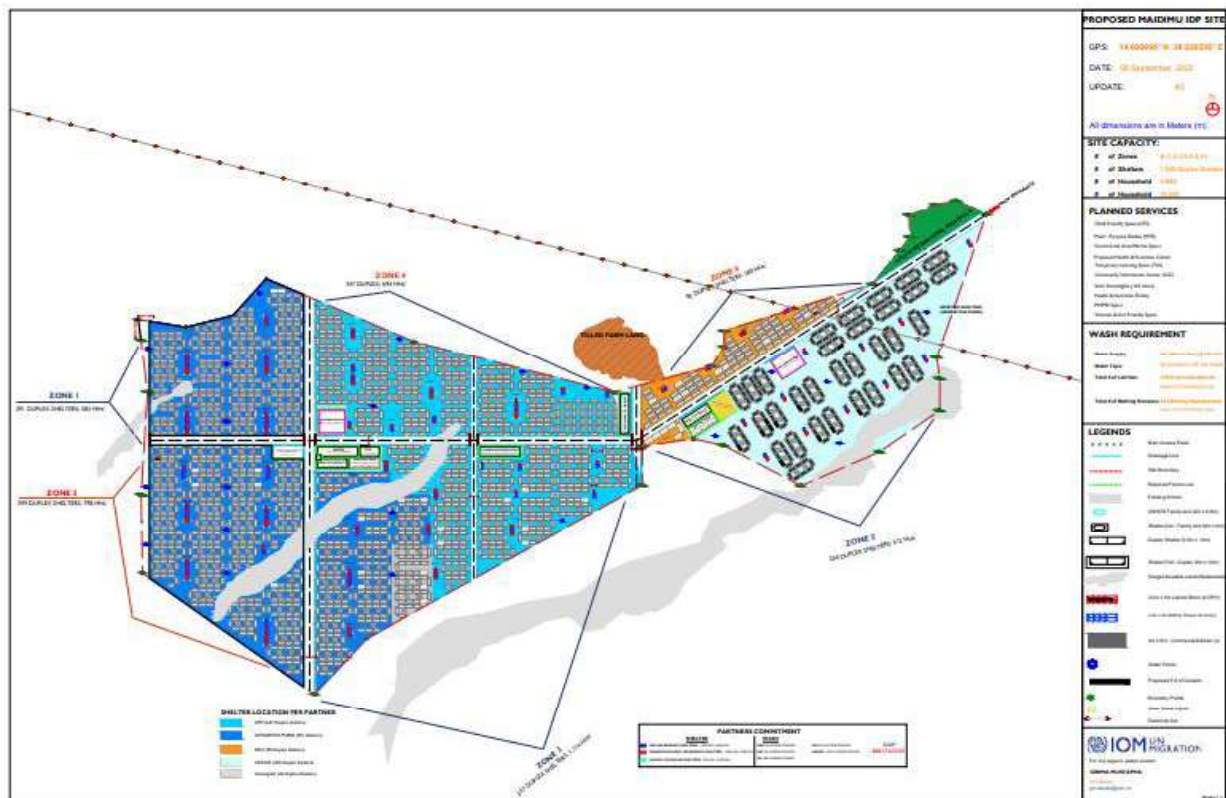


Figure 125: Mai Dimu planned IDP camp site plan (Source: IOM, CCCM 2024)

The provision of humanitarian services in planned camps becomes increasingly complex when both the population size and duration of displacement increase. According to UNHCR guidelines, the population of a planned camp should ideally not exceed 20,000 individuals to ensure effective management, service delivery, community cohesion, security and protection (UNHCR, 2007). Camp designs should adhere to this limit; otherwise, additional camps should be established in appropriate distance to accommodate excess populations. However, in practice, many camps exceed their original designed capacity due to factors such as prolonged conflict, lack of durable solutions, and spontaneous or secondary displacement.

According to the site management agency of Mai Dimu camp—specifically the Camp Coordination and Camp Management (CCCM)²¹⁷ unit of the IOM—the camp was designed to accommodate a population of 19,400 individuals. International humanitarian standards recommend a minimum of 45 square meters per person in camp settings, which includes space for individual shelters, communal facilities, circulation, and essential services such as education, healthcare facilities, sanitation, administration, food distribution areas etc. The total area of Mai Dimu camp is approximately 62 hectares, resulting in an average spatial allocation of around 45.8 m² per person. This slightly exceeds the minimum standard and indicates that, from a spatial planning perspective, the camp meets the basic international requirements for refugee and IDP settlements (Sphere Association, 2018; UNHCR, 2007).

Different standards mention that camp land use is mainly covered by residential units of emergency shelters. In case of Mai Dimu camp the shelters account around 18% considering the duplex shelter with foot print or shelter plot area of 6m by 14m. This proportion of land allocated to shelter falls below the preferable standard ratio of 1:4. According to the UNHCR Emergency Handbook and Sphere Standards, a minimum of 25% of total camp area should ideally be dedicated to residential shelter and associated infrastructure (such as household access routes and personal open space) to ensure adequate living conditions and space for basic needs and privacy. Other services of the land use cover:

- Residential areas Shelter
- Child friendly spaces (CFS)
- Multi-Purpose Shades (MPS)
- Commercial Areas/Market space
- Health and nutrition center
- Temporary learning space (TLS)
- Community Information Center (CIC)/ Camp administration: in this case CCCM
- Solar streetlights (142 units)
- MHPSS space
- Women and Girls Friendly Spaces
- Latrine (One block with 3.2m * 5m)
- Shower (One block with 3.2m * 5m)
- Water taps (156 tap heads)

²¹⁷ The CCCM sector plays a critical role in ensuring the efficient and equitable delivery of humanitarian assistance and protection services in displacement settings, including refugee and IDP camps. Globally led by the IOM in natural disaster contexts and by UNHCR in conflict-related displacement, the CCCM cluster is responsible for coordinating multi-sectoral service delivery, camp planning, site improvement, population tracking, and maintaining minimum standards across sectors such as shelter, WASH, health, and protection. In addition, CCCM actors facilitate community participation, promote inclusive governance, and contribute to long-term solutions by supporting return, resettlement, or local integration of displaced populations.

2.3.7. Adaptive governance

The governance including the coordination and management of the camp is critical to ensure safety, access to services, protection of rights, and effective humanitarian responses by partners. The governance structure in most planned camps includes:

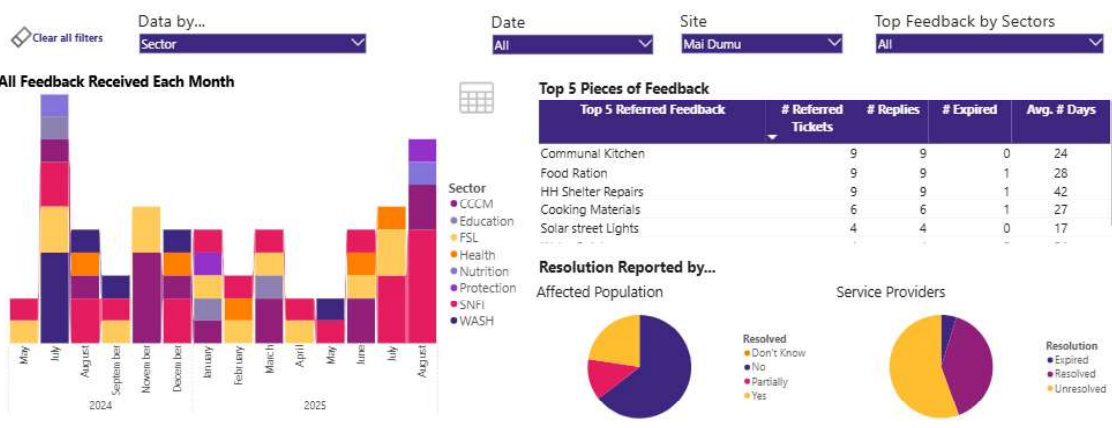
Camp management (CM): In case of Mai Dimu IOM Ethiopia CCCM unit is a camp management humanitarian agency responsible for overseeing day-to-day operations, managing camp infrastructure, and coordinating service delivery among various sectors, including shelter, water, sanitation and hygiene (WASH), protection, health, and mental health and psychosocial support (MHPSS) and food. A key component of the unit's role is to facilitate meaningful engagement with IDPs at multiple levels, ensuring their participation in decision-making processes and promoting accountability. With support from the CCCM unit, camp residents establish various IDP committees as part of a structured governance system that operates at the camp, zone, and block levels. The committees actively engage in advocating for the IDPs to have better services. Unlike Seba Care 4, in Mai Dimu the umbrella or camp-level IDP committee (ጥምረት) is functional; however, at the zone and block levels, IDPs are organized according to their places of origin rather than the designated camp zones.²¹⁸

CCCM unit also operates a complaints and feedback mechanism (CFM), which is managed by CCCM clerks' staffs. Through this system, complaints are systematically collected, referred to relevant humanitarian service providers, and tracked to ensure timely responses. To enhance the efficiency and transparency of this process, IOM has integrated the use of digital platforms such as Zite Manager, which allows for streamlined communication, real-time monitoring, and improved coordination among partners. This integrated approach supports a more responsive and accountable humanitarian system, ultimately contributing to the protection and well-being of displaced populations. Zite Manager introduced in Mai Dimu a month later of the first relocation on May 2024.

²¹⁸ This organization based on place of origin, rather than block or zone structure, affects the flow of information in the day-to-day management of the camp such as shelter maintenance.

Ethiopia Feedback Overview

69 Total Received
65 Total Referred
4 Total Closed Upon Receipt
63 Total Replied to
3 Total Expired
29 Average # of Days



Ethiopia Feedback Overview

69 Total Received
65 Total Referred
4 Total Closed Upon Receipt
63 Total Replied to
3 Total Expired
29 Average # of Days

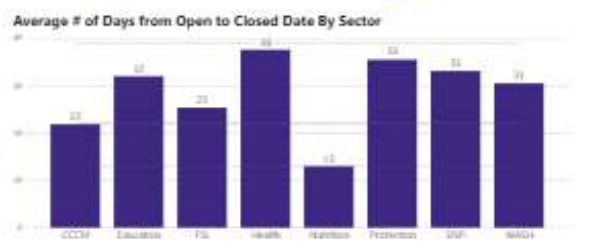
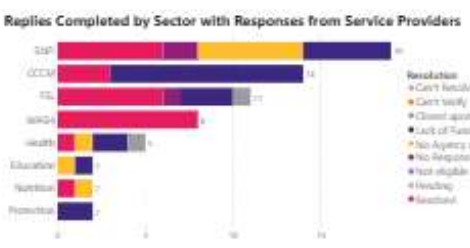


Figure 126: Zite manager used in Mai Dimu camp since May 2024
 (Sources: <https://www.zitemanager.org/ethiopia>)

Camp coordination (CC): Overall coordination of camps is typically led by UNHCR in refugee contexts or by IOM in situations involving IDPs, in close collaboration with relevant government authorities. In the case of Mai Dimu, where the displacement is internal, the IOM-led CCCM Cluster is responsible for overall camp coordination with oversee coordination from UNOHCA. IOM CCCM led and UNOCHA use their regional office or so-called subnational office for onsite camp and over coordination respectively. Its key responsibilities include strategic planning, policy harmonization, reporting, and advocacy. A national government has sovereign responsibility for people displaced within its borders. Disaster Risk management Commission (DRMC) of Ethiopia is leading government body for coordination of IDPs responses including in planned camp settings. DRMC works with regional government so of Tigray mainly DRMC of regional office Bureau of Labour and Social Affairs (BoLSA) office.

Camp administration (CA) and Government role: The national government not only coordinates but also works in close collaboration with local authority for camp administration. The government effectively delegate the camp administration in this case Tabia Selam, Woreda Tahitay Koraro play a key role in camp administration. Their responsibilities include key functions such as ensuring security and managing land allocation. The site selection process attempts to follow humanitarian design and planning principles, although it involved limited participation from IDPs and host communities. However, it is carried out in close collaboration with the regional, zonal and woreda Bu but with close collaboration with the Regional and Zonal Bureau of Labour and Social Affairs (BoLSA). Disaster Risk management Commission (DRMC) of Ethiopia sets legal frameworks, policies and often security protocols.

Community governance structure: The camp in Mai Dimu was established nearly two years after the onset of the conflict, as a response to the challenges of prolonged displacement and to relocate IDPs from collective centers in Shire and surrounding areas such as Endabaguna. It is assumed that the IDPs had already developed a governance structure in their previous locations and sites. In this context, efforts were made to preserve and integrate the existing IDP governance structures and committees, which serve to represent the concerns of the displaced population and advocate on their behalf to the camp management agency and other relevant government authorities. however, the existing IDP structure adjusted according the camp level for better management. Community governance tends to focus more on the original places and functions of IDP networks accordingly.

IOM CCCM unit, as a camp management agency, promotes the self-organization of IDPs by supporting the formation of various camp committees that are inclusive and gender-balanced. Representative bodies—such as youth groups, women’s groups, and elders—are organized at the zone and block levels to advocate for the interests of their respective communities. These groups play a key role in promoting accountability, resolving conflicts, and ensuring that services are culturally appropriate.

Humanitarian coordination, management, and governance at the camp level should be sustained throughout all stages of the camp lifecycle—from initial establishment, through the care-and-maintenance phase, and ultimately to camp closure (IOM et al., 2015).

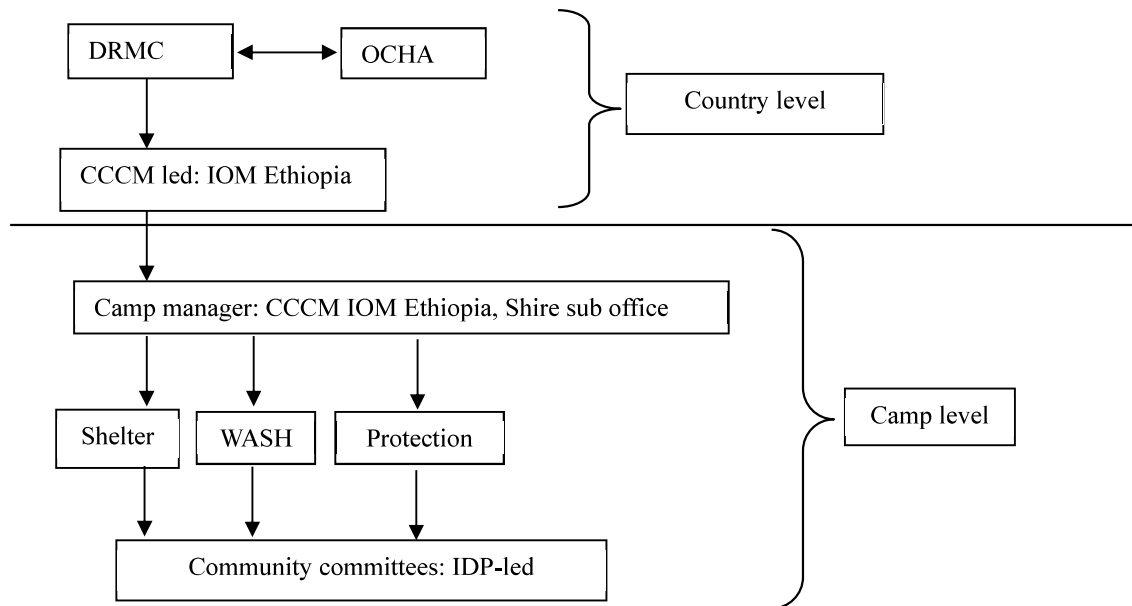


Figure 127: Coordination structure of the camp (Source; author, 2024)

Committees in the camp

In the camp, residents actively participate by forming various committees that help improve camp administration and strengthen advocacy efforts. These committees are composed of members from all genders and social groups, and their leaders are selected through a democratic election process. The IOM, through its CCCM unit, supports and facilitates both the formation of these committees and the democratic election of IDP leaders.

The purpose of establishing these community committees goes beyond improving daily camp operations. They also serve to introduce residents and emerging leaders to democratic principles, which can have a positive impact during the return and reintegration process, as well as enhance advocacy for improved humanitarian services. At the camp level, the elected leaders—often referred to as "umbrellas"—regularly meet with IOM's CCCM team to discuss the overall situation in the camp. These meetings cover service provision, resident concerns, security issues, and proposed needs and solutions. Additionally, the leaders represent the camp in inter-site or multi-camp meetings held in the Shire area.

In addition to the camp-level community leadership, there are also zonal and block-level leaders who play key roles in localized governance within the camp. Another important component of the leadership structure includes specialized support committees, each tasked with specific aspects of camp management and coordination. These committees work closely with implementing humanitarian partners to address sector-

specific needs. Additionally, ad-hoc committees are formed when necessary to facilitate temporary or emergency activities in response to emerging issues.



Figure 128: Camp-level committee in Mai Dimu (Source: author, December2025)

Examples of community-based committees that collaborate directly with humanitarian agencies include the shelter committee, security watch committee, claim hearing committee (grievance committee), and the committee for persons with disabilities. In addition, groups of incentive workers are assigned to specific sectors—such as Shelter, WASH, and Protection—where they play an essential role in facilitating communication and coordination between humanitarian partners and the IDP community.

Table 26: Committees and leaderships in the camp (Source: author based on ground assessment)

Committee type/name	No	Male	Female	Total	Sector	Function/role
Umbrella	1	4	1	5	All sectors	Over all coordination and leadership of the camp
Zone leaders (#6)	All sectors are organized based on place of origin rather than by zone or block numbering.					Over all coordination and leadership at zone level but the coordinate each block however in case of Mai Dimu the coordination is based on place of origin of the IDPs.
Block leaders						
Gender committees /Women committees	5				Protection	-Support and mobilize women in actively participate on different activities -Rise awareness creation on prevention of GBV -Provide and facilitate the GBV victims to get support via counseling
Peace and security committee	1				Security	- This committee include members from residences as well as nearby host community police officers
Watch committees	1				Security	-maintain camp level security
Grievance committee / Claim hearing committee	1	3	1	4	All sectors	- resolve complaints on aid, protection, and services, ensuring fairness, confidentiality, and trust between residents and management.
CCCM committees	14			14	All sectors	Coordinate services
WASH committees	1			9	WASH	Control the WASH services activities
Disabled committee	1	10	2	12		Protect the right of disabled
Shelter committee	6				Shelter	Each zone has one committee

2.3.8. Camp's inertia and peri-urban growth

The camp is located approximately 11 kilometers west of Shire city, in a rugged area near former military camps. Although it lies outside the city administration, it remains within the wider surrounding administrative and planning area, resulting in a notable degree of physical separation. Following its construction, the site remained uninhabited for nearly two years and only began receiving residents after the first relocation of IDPs in April 2024. The camp is accessible via the asphalt road connecting Shire to Dede-bit; after passing a small cluster of houses, a left turn and a drive of less than two kilometers lead to the site.

The surrounding peri urban area, previously characterized by dispersed rural settlements, with *hidmo houses* has experienced increasing construction activity using more permanent materials, enhancing the potential for physical integration with the city. The city's master plan, together with the growth of nearby satellite settlements, is therefore likely to shape future spatial relations. In particular, the junction road leading to Shire Dede-bit and Shire Endabaguna has stimulated the development of a town locally known as "Twenty

by Twenty” (20 × 20), where 400-square-meter plots have been allocated to youth and other residents to establish a new village-type settlement. The construction of a new fuel station with an adjoining commercial building at this junction has further promoted the emergence of this settlement. The junction also serves as a main route and hub for IDPs traveling to and from the camp, supporting the gradual growth of the village-type town and contributing to the westward urban expansion toward the camp.

The camp remained uninhabited after its construction due to several factors, including the reluctance of IDPs to leave Shire, beliefs among some residents that the site was haunted, and land compensation request with the host community. Though all these issues were not addressed, the camp began to receive residents steadily, marking the start of its gradual occupation and development. In addition to its spatial connections, the camp is linked to basic services such as schools, health facilities, and water supply. Both host and IDP communities share these services; for example, IDP children often attend schools in the host community alongside local children. The labor market further strengthens these connections: members of the host community are employed within the camp as incentive workers, while IDPs often seek work in peri-urban and urban areas, creating reciprocal economic and social linkages.

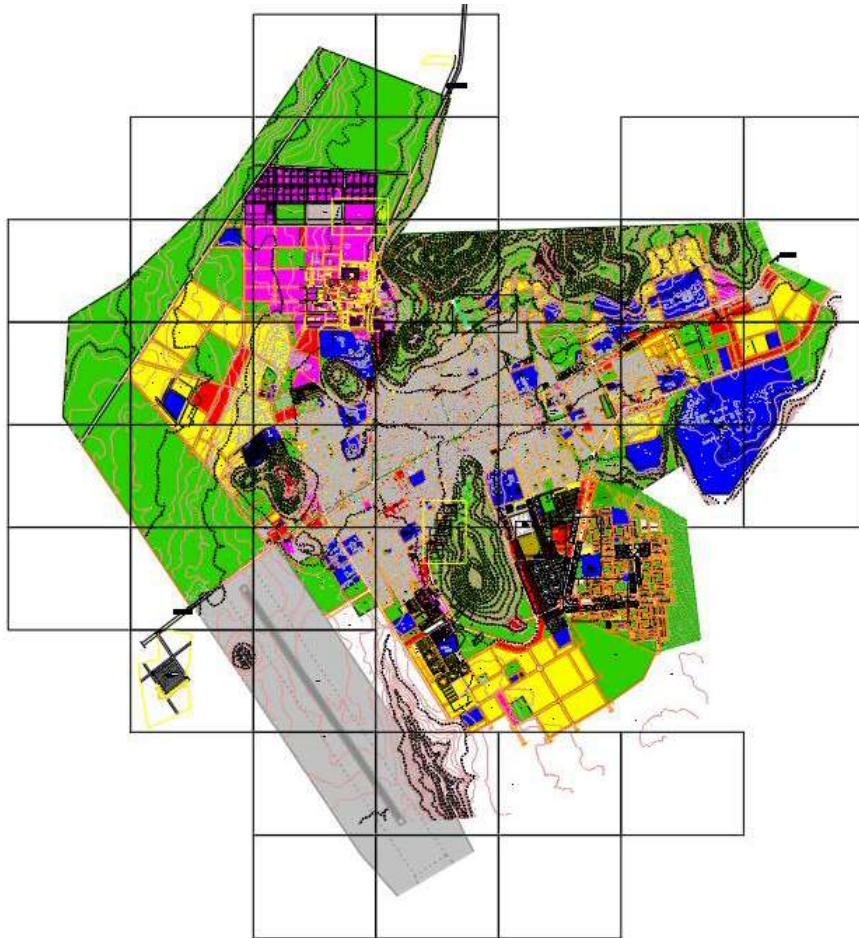


Figure 129: Existing master plan of shire



Figure 130: Fuel station under development at the junction of the asphalt road leading to the camp (Source: author 2025)

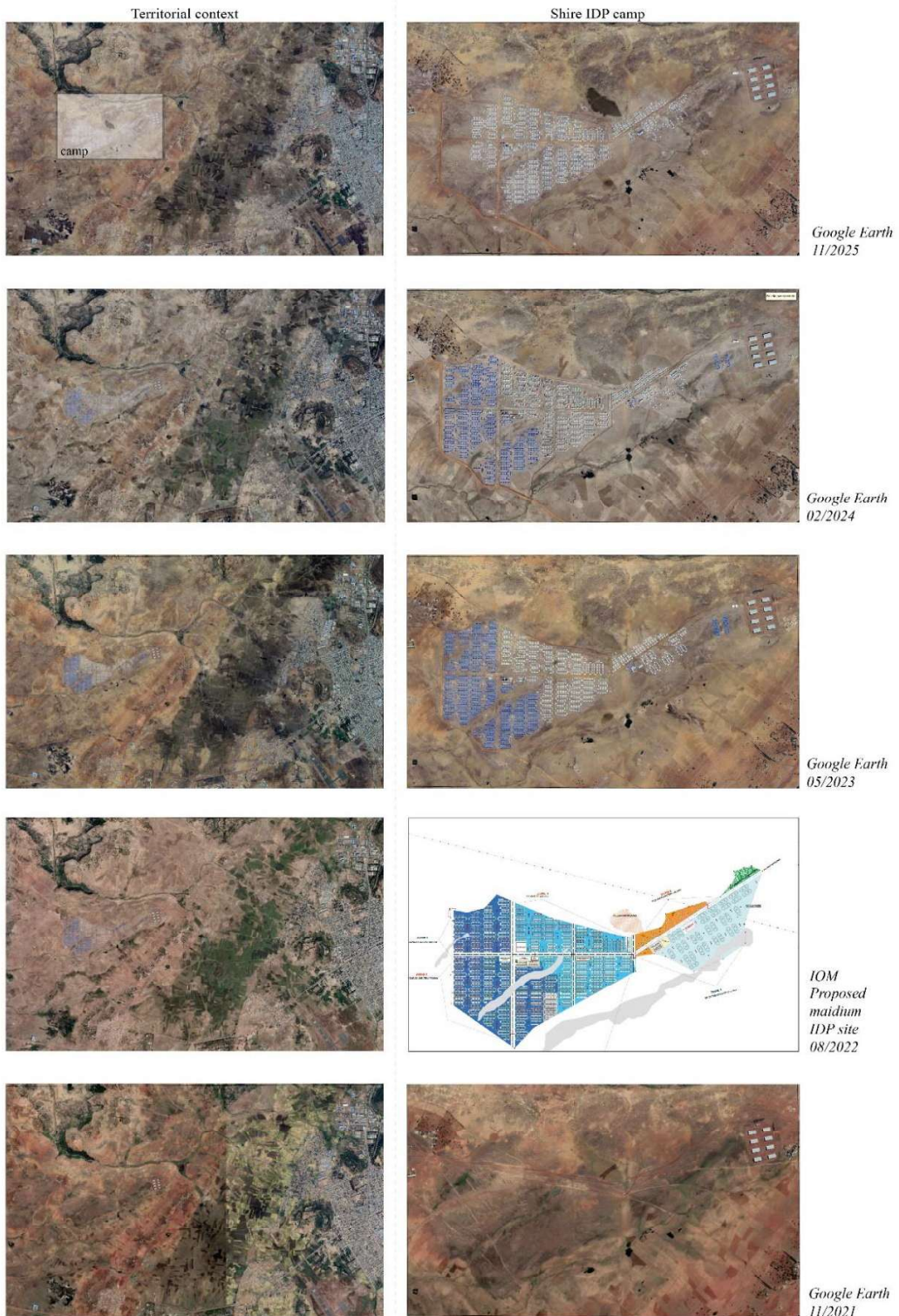


Figure 131: Five-years spatial changes of the camp, peri-urban area, and city (computed from Google Earth by Samuel B. and G. Pozzer, 2025)

Over the five-year period, the Mai Dimu IDP camp and its surrounding territory have undergone significant spatial and land use transformations. In November 2021, the area surrounding the camp was predominantly characterized as a typical rural landscape, largely undeveloped, with natural vegetation and minimal human disturbance. The terrain exhibited seasonal variation, remaining dry during the dry season and becoming covered with grass during the rainy season. At this stage, the camp itself was unoccupied, with no visible infrastructure or shelters.

By August 2022, initial changes in land use began to emerge, marked by early construction activities near the camp site. This period also saw the introduction of a formal site layout plan by IOM, which designated areas for shelters and essential services, signaling the beginning of structured settlement planning. Shelter construction was undertaken by IOM and other humanitarian partners, alongside site improvement works. In May 2023, the camp exhibited substantial physical growth, with numerous shelters established and a more formalized spatial organization. The surrounding land showed increasing signs of disturbance, primarily due to construction activities and land clearing. However, despite this physical expansion, there was not yet a corresponding significant increase in population.

By February 2024, land use changes had become more pronounced. Cleared areas in the surrounding landscape suggested emerging agricultural activities or infrastructural expansion. The camp itself expanded further, becoming denser and more spatially organized, with additional clusters of shelters and improved infrastructure. In April 2024, the site began accommodating its first residents, marking a critical transition from a prepared but uninhabited space to an active settlement.

By November 2025, the territorial context had undergone a marked transformation. The surrounding landscape displayed clear patterns of change, including defined patches indicative of agricultural use and emerging urban development. The camp reached its largest spatial extent and highest density compared to previous years, reflecting ongoing displacement and sustained settlement growth.

Overall, the Mai Dimu IDP camp has evolved from an uninhabited site into a densely populated and organized settlement, while the surrounding area has shifted from a natural landscape to more intensive use. The 2022 site layout plan reflects efforts to guide this development. These changes highlight a pattern of displacement-driven land use transformation, marked by rapid expansion and increasing pressure on the surrounding environment.

In addition to broader territorial transformations, significant changes are evident within the camp, particularly in internal land use patterns. Residential shelters have increasingly been converted into small-scale commercial and mixed-use spaces, especially along main access routes. These include informal activities such as shops, kiosks, coffee houses, barber shops, and tailoring services. Such modifications, often involving the expansion of existing shelters, reflect residents' adaptive livelihood strategies and evolving socio-economic needs.

2.3.9. Scenarios

The considerations examined in the SC4 camp are relevant to this camp as well, as both scenarios share key characteristics despite differences in geographic location, spatial conditions, temporal context, and projected population growth. Camp formation, design, and planning inherently involve context-specific constraints, particularly given the unpredictable lifespan of most displacement sites. Effective planning therefore requires continuous adaptation to evolving internal conditions, the surrounding environment, political and administrative decisions, and the capacity and operational priorities of humanitarian organizations (Corsellis & Vitale, 2005; Sphere Association, 2018; UNHCR, 2007). These dynamic factors collectively shape the long-term viability, functionality, and resilience of camp settings.

- i. *Scenario 1:* The camp is likely to maintain its current function in the coming years and gradually become integrated into the city's development as part of the broader urban fabric. Given the protracted nature of displacement and the continued inaccessibility of places of origin, there is a strong likelihood that IDPs will pursue local integration with host communities.
- ii. *Scenario 2:* The camp may continue to serve its current function; however, it could increasingly operate as a transit or transitional center for IDPs, where residents stay temporarily until areas such as Western Tigray become accessible. In this context, the camp functions as a short-term, transitional settlement characterized by impermanence.
- iii. *Scenario 3:* The camp is likely to persist, albeit with a gradual reduction in size due to population decline and the conversion of land to other uses. Some shelters remain unoccupied, while a portion of IDPs move between the camp and nearby peri-urban and urban areas, indicating a pattern of partial relocation and mobility. Since the initial construction of the camp, some blocks on the western side built by Samaritan's Purse (SP) have been completely destroyed, leaving the land vacant.
- iv. *Scenario 4:* The camp continues to serve IDPs living in the city's host communities who wish to resettle, reintegrate, or relocate. Two years after its construction, the camp became habitable, and IDPs from collective centers, host communities, and rented houses were relocated from Endabaguna sites to the camp in April 2024. Consequently, the camp functions as a relocation site and is formally recognized as a relocation camp.²¹⁹
- v. *Scenario 5:* The closure of Mai Dimu camp is linked to full implementation of the CoHA, which upholds the FDRE Constitution and restores Tigray's sovereignty to the *status quo ante*, enabling IDPs to return home through a structured, supported, and sustainable decommissioning process.

²¹⁹ Relocation camps are planned settlements where IDPs or refugees are moved from temporary shelters or host communities to a safer, structured environment, providing protection, basic services, and support for resettlement and reintegration.

2.4. Shifting between SC4 and Mai Dimu IDP camps

Both camps represent the two largest planned IDP settlements established in the aftermath of the 2020–2022 conflict in Tigray. Although they emerged from a common humanitarian imperative, each camp exhibits distinct characteristics in terms of its establishment timeline, spatial organization, functional orientation, and developmental trajectory. Despite these contextual differences, the camps demonstrate considerable convergence in their core operational activities, institutional arrangements, and standardized approaches to service delivery.

With respect to coordination, both camps operate within a comparable governance framework led primarily by the Camp Coordination and Camp Management (CCCM) cluster as the designated lead agency. This structure reflects a harmonized, inter-agency coordination model intended to promote coherence, accountability, and efficiency in humanitarian response. Service provision within both camps is systematically planned, implemented, and monitored through technically informed processes that incorporate an in-depth understanding of site-specific physical and environmental conditions, socio-cultural norms and practices, and the differentiated needs of vulnerable groups.

Furthermore, the coordination mechanism follows a structured, multi-tiered communication flow, linking the country-level cluster coordination platform with the sub-national (Tigray region) coordination structure, and extending to site-level management and community-level committees. This vertically integrated framework facilitates information exchange, operational alignment, and standardized response implementation across all levels of governance.

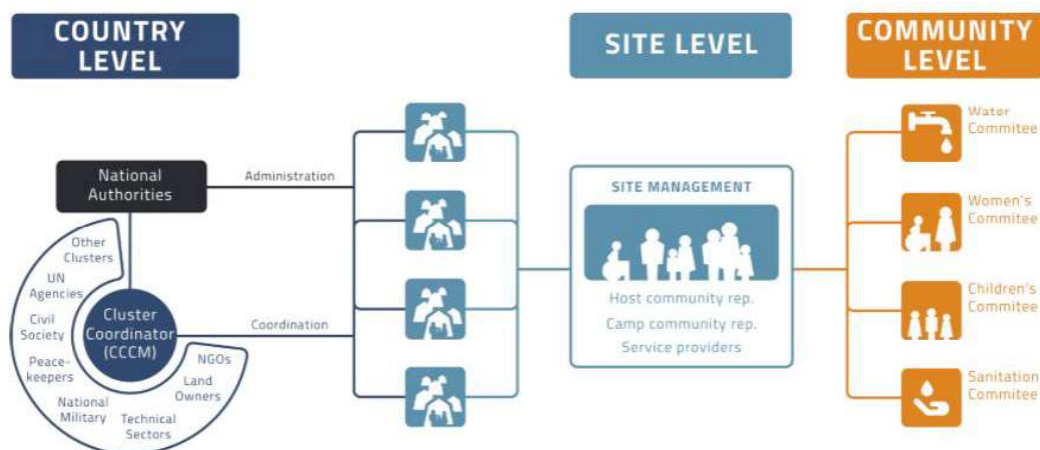


Figure 132: Standard coordination of at and between site, community and country levels

A comparative analysis of these two sites offers critical insights for shaping future strategies in the planning and design of IDP camps within urban and peri-urban contexts. It also facilitates a systematic examination of how humanitarian principles and established protocols align with, diverge from, or are adapted in practice.

Table 27: Comparison of the two camps based on key characteristics (Source: author, 2024)

Descriptions	Sebacare (SC4) camp	Mai Dimu camp
Location and context	Located in Mekelle, within an urban administrative boundary and surrounded by peri-urban areas, the camp benefits from relatively better access to infrastructure and essential services. Its proximity to regional administrative and humanitarian coordination centers further enhances service delivery and support.	Located in Shire and the surrounding Tahtay Koraro woreda, Selam kebele in a rural area, the camp faces challenges related to accessibility from Shire. It also has relatively limited integration with the surrounding host communities.
Population planned	20,000	25,000
Population actual	The population is around 12,000, with fluctuations over time and a general downward trend.	The site hosts 8,146 individuals (1,650 households), and the ongoing relocation from other collective sites is contributing to a continued increase in population.
Actual area in hectares / Total surface area in ha.	49.5 hectares	62 hectares
Population per hectare (Planned)	404	403
Population density per hectare (actual)	242	131
Active humanitarian agencies in the camp	In total, the number exceeds 26, but it varies over time, especially following the USAID budget cuts.	The number not exceed 8 (i.e., remain below 10), although this varies over time, especially following the USAID budget cuts.
Site management agency	IOM, CCCM unit	IOM, CCCM unit
Camp establishment /Construction	March 2021	August 2022
Inhabited	Since September 2021	Since April 2024
Shelter (emergency shelter)	The camp includes shelters of varying sizes, including communal shelters measuring 8 meters by 25 meters and individual shelters measuring 3.5 meters by 6 meters, with some upgrades implemented to improve living conditions.	The camp maintains a uniform shelter typology and size throughout, consisting entirely of duplex shelters arranged in both cluster and linear layouts. Each duplex shelter measures 3.5 meters by 10 meters.
Infrastructure	Vulnerable to flooding and weather-related damage due to poor drainage and site improvement activities.	Vulnerable to flooding and weather-related damage due to poor drainage and swamy site location. Exposed to environmental hazards.
Access to basic humanitarian services	Better access to WASH facilities, education, and health services due to coordinated humanitarian services and proximity to urban centers. however, demand often exceed capacity. (e.g., food ration	Access to services is limited and often inconsistent. Water and sanitation infrastructure is poor, with water trucking serving as the

	and the supply). The water supply in the camp is more sustainable than in the main city. The camp relies on two sources: its own borehole powered by a solar energy system, and a connection to the municipality's high-pressure water supply. Access to formal education within the camp is limited to the primary level, up to Grade 6.	primary source of water (later improved by water line construction) connecting the camp with the main waterline. An emergency clinic is available but for referral system the healthcare access is constrained by distance. No formal education in the camp but two schools found near by the camp in the host communities.
Source of water	The water supply in the camp is more sustainable than in the main city. The camp relies on two sources: its own borehole powered by a solar energy system, and a connection to the municipality's high-pressure main city water supply.	Initially, the camp relied on an emergency supply of water delivered by trucking. Later, a municipal water line was connected to the camp, providing a sustainable water source. Water partners, mainly the IOM WASH unit, then carried out testing and chlorination to ensure safety.
Protection and security	The camp benefited from secure location. Humanitarian partners provide some level of protection monitoring.	Relatively the camp security remains a significant concern due to proximity to contested areas. Protection risks are for vulnerable groups such as women, children, and persons with disability (PWD).
Livelihood and integration opportunities	Some livelihood opportunities exist through informal labor in urban markets, as well as small-scale activities such as running shops, poultry and backyard farming, and shoeshine services within the camp. Due to these economic activities and the presence of humanitarian services in both the camp and surrounding host communities, there is a moderate level of social integration between IDPs and the host population.	Livelihood opportunities are limited due to the camp's remote location and the absence of economic infrastructure. While small shops and barbershops provide some income-generating activities, these options remain minimal. As a result, IDPs largely depend on humanitarian assistance to meet their basic needs. Social integration with the host communities is relatively low, reflecting the limited economic and social interactions between the two groups.
Intention to return	High intention among IDPs to return to their areas of origin; however, ongoing security and accessibility issues, especially in Western, Northwestern, Central Eastern and Southern Tigray, prevent voluntary return.	High intention among IDPs to return to their areas of origin; however, ongoing security and accessibility issues, especially in Western, Northwestern, Central Eastern and Southern Tigray, prevent voluntary return.
Land use change	Dynamic changes in land use, especially from residence shelters changed to commercial areas.	Slow to moderate change of land use.

Building materials and construction	Plastic sheeting (tarpaulin) serves as the primary envelope material, supported by eucalyptus poles used as the main structural framework. however, stone also used for drywall construction in some communal shelters to provide protection and increase life time of tarpaulin.	Plastic sheeting (tarpaulin) serves as the primary envelope material, supported by eucalyptus poles used as the main structural framework.
Housing, Land, and Property (HLP) issue	So far, no serious HLP issues have been reported by either the IDPs or the host communities. However, if stone construction continues and shelters become more permanent, there is a high likelihood that residents will begin to request formal title deeds.	So far, no serious HLP issues have been reported by IDPs or host communities, although hosts have requested compensation for land previously used for grazing, and an alternative access road avoids using farmland.
Energy	There is no access to electricity. IDPs rely on wood fires and traditional stoves for cooking and baking <i>enjera</i> . Solar lights are commonly used for lighting.	There is no access to electricity. IDPs rely on wood fires and traditional stoves for cooking and baking <i>enjera</i> . Solar lights are commonly used for lighting.
Main donor for initial construction	Bureau for Humanitarian Assistance (BHA), United States Agency for International Development (USAID)	European Civil Protection and Humanitarian Aid Operations (ECHO)
Site selection process	Less involvement of IDPs and host communities	Less involvement of IDPs and host communities
Space creation after standard humanitarian responses	Semi outdoor space creation including expansion of shelter with their own local materials and defining of individual courtyard.	Semi outdoor mainly with shade space creation to protect the harsh sun as well as the warm climate.
Climate	No thermal insulation or winterization measures were provided; responses relied instead on natural systems.	The hot, dry season and warm, heavy summer rains contribute to flooding.
Critics	Limited involvement of the host and IDP community in site selection resulted in poor site location and inadequate infrastructure.	The site is too far from the urban area, and the terrain is rugged with poor location and infrastructure. This situation reflects inadequate technical considerations resulting from limited stakeholder involvement.
IDPs daily experience, children	Shelter use, water fetching, traditional kitchen, distribution, clinic and kids playing	Shelter use, water fetching, traditional kitchen, distribution, clinic and kids playing
Lessons from the construction	Extensive use of local materials, such as dry-stone walls, along with strong operational and maintenance practices by partners increase the life cycle of the emergency shelters even after years.	Good operational and maintenance practices and active IDPs participation in the process.

2.5. From “Camps as a Last Resort” to an “Urban-First” Approach: Reframing Humanitarian Shelter and Settlement Strategies

From camps as last resort to urban first approach.

The shift from “camps as a last resort” to an “urban-first” approach reflects the growing concentration of IDPs in urban areas. Instead of prioritizing camp settings, it emphasizes integration within existing communities and the strengthening of local systems. This marks a move toward more inclusive and sustainable humanitarian responses.

An estimated 60% of the world’s refugees and a majority of IDPs now reside in urban areas, yet they often receive limited humanitarian assistance and are frequently perceived as inherently “self-reliant.” In contrast, donor resources continue to prioritize camp-based populations, where restrictions on mobility and geographic isolation frequently render residents highly dependent on aid (Earle & Brown, 2025).²²⁰ Although camps have become a common default response to displacement crises, they are intended as temporary measures and are often located in remote or inhospitable environments. As a result, they rarely align with the preferences of displaced populations. While camps may emerge spontaneously or be established when no alternative solutions are viable, they should function only as a solution of last resort, particularly given that most displaced people now seek protection and opportunities within towns and cities (IOM et al., 2015).

The tension between the “urban first” approach and the principle of “camps as a last resort” presents a complex paradox in displacement responses that requires careful analysis through an area-based approach. In Tigray, this challenge is particularly pronounced, with approximately 80% of IDPs residing within host communities, primarily in urban areas which is greater than the global. These host communities are often compelled to share limited urban services and infrastructure, sometimes accommodating IDP populations that exceed their own by five to six times. The remaining 20% of IDPs are housed in planned camps, spontaneous settlements, makeshift shelters, collective centers, and other temporary arrangements. This distribution not only underscores the pressure placed on urban systems but also highlights the need for context-specific, inclusive, and sustainable shelter, settlement and service delivery strategies.

In prolonged displacement scenarios, particularly within high-density camp settings, the cost of shelter maintenance—including both routine and periodic upkeep—can become increasingly burdensome. Over

²²⁰ Challenging the status quo through an “urban first” approach that moves beyond camps and promotes inclusive urban solutions for refugees and IDPs.

time, this places a significant financial strain on humanitarian agencies and donors, often leading to ‘crisis or donor fatigue’ in sustaining day-to-day support. These challenges underscore the growing need to explore alternative shelter and settlement solutions, particularly non-camp options, that are more sustainable and better integrated into existing communities. A clear example is that, following the USAID funding cuts, many humanitarian camps—including SC4 camp in Mekelle and other collective sites—were unable to provide adequate shelter and settlement support. As a result, IDPs remained in worn and damaged plastic shelters, exposing them to rain, wind, and wild animals such as hyena, and forcing them to live in unsafe, insecure, and undignified conditions.

Given that approximately of IDPs reside in urban areas and in alternative shelter and settlement arrangements, the case of Tigray requires context-specific and critically informed solutions. Responses must be tailored to local socio-cultural conditions, demographic characteristics, and household size dynamics. An area-based approach is therefore recommended to ensure integrated and equitable service delivery. This would encompass shelter assistance, Camp Coordination and Camp Management (CCCM), mobile health services, and flexible camp management mechanisms, potentially through mobile or area-based CCCM modalities. Such an approach would enable coordinated, multisectoral interventions that respond effectively to dispersed and urban-based displacement contexts.

2.5.1. Area-Based (Neighborhood) Approach: A pilot project for urban IDPs in Mekelle

This section presents a detailed account of a pilot project exploring alternative shelter and settlement solutions for urban IDPs. The project employs an innovative methodology known as the Area-Based Approach (ABA), or neighborhood approach, in which IDPs are accommodated within host communities in a manner that promotes social inclusion, cohesion, and integration.

Currently Area-Based Approach (ABA) attracting many donors and implementing humanitarian organization and urban planning fields as well. This is not only it provides an integrated support to both displaced and host communities but it also facilitates post-disaster recovery and enhance communities’ resilience. According the UNHCR’s *policy on refugee protection and solutions in urban areas* which recognizes that refugees have the right to live in cities, enjoy mobility, access services, and earn a livelihood (UNHCR, 2009).²²¹ Urban environments often offer much greater autonomy compared to camps. Integrating displaced populations into cities can lead to shared infrastructure, economic activity, and mutual development. In Kenya and Colombia, urban-inclusive models have led to economic vibrancy rather than hostility.

²²¹ This approach marks a shift toward recognizing urban inclusion and self-reliance as central to effective refugee protection, rather than confining refugees to camp-based assistance.

In 2010 the Inter-Agency Standing Committee (IASC) called for a ‘paradigm shift in humanitarian assistance in urban areas based on a district or community-based [approach], rather than, an individual beneficiary approach so as to forge partnerships for assistance delivery and recovery with actors on the ground’(IASC, 2010). The IASC also challenges the validity of the cluster approach to urban recovery operations, stating that “the current cluster system is structured around sectors of expertise and sectorial coordination, while in a context of urban crises there might be a need to identify and respond holistically to multi-sectoral need in a given territory, requiring stronger inter-cluster linkages and coordination at city-level” (IASC, 2016) and (IASC, 2018b). ALNAP’s research finding agree: “There are also concerns that the sector-based approach to coordination, exemplified by ‘clusters’, is not the best method for addressing the complex, multi-sectoral needs of affected people” (Knox Clarke P. & Campbell L., 2016) Given the above criticisms many humanitarian organizations sought to develop more urban-oriented approach such as the ‘area-based approaches’.

ABA in post-disaster recovery interventions requires implementing agencies to prioritize a geographic or spatial area. That could be a neighborhood, a district, a specific settlement or part of a city or town where a set of goods and services a particular agency may be delivering. Naturally, the capacity of an area to accommodate IDPs will depend not only on physical and functional features, but above all on social, cultural and ethnic factors. The spatial identification, to be efficient, effective and sustainable, will require and inclusive and deliberative approach within the concerned communities.²²²

In an area-based approach, the priority lies on what each place is supposed to be within the new ‘contact strategy’. This in itself requires coordination of agency actions and effective collaborations to be paramount at every stage. A review of urban ABAs identified three defining characteristics: a geographically target, a multisectoral vision and a participatory approach. They might be considered as the three correlated dimensions to design and evaluate ABA practices (Parker & Maynard, 2015).

²²² Beside those of ECHO and WB, there are not many evaluations in this regard and this study seeks to provide useful input to future evaluation designs in local contexts. A comparative approach able to measure and interpret the differences between the pre and post community profile might be fruitfully rooted to semi-experimental or mixed evaluation approaches.

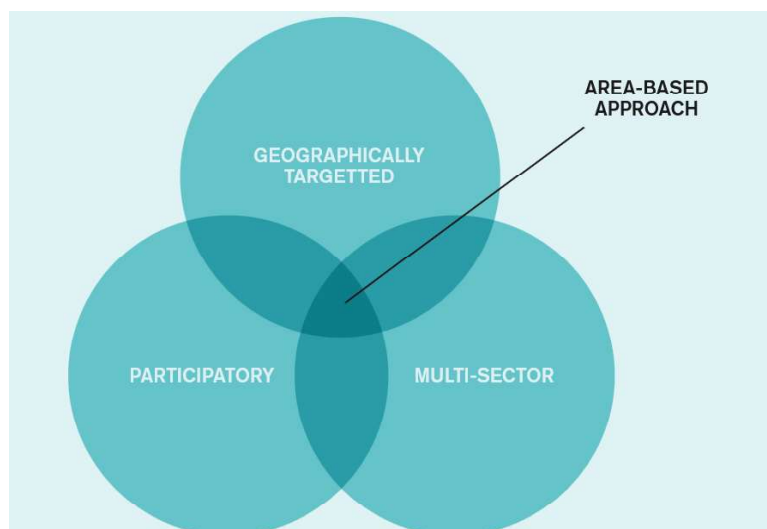


Figure 133: Characteristics of an area-based approach (ABA)

Neighbourhood approaches (NAs) have emerged in recent years as innovative and alternative frameworks for improving the delivery of humanitarian shelter assistance within urban post-crisis recovery settings. Commonly described as ‘area-based’ or ‘settlement/place-based’ approaches, they emphasise the importance of situating interventions within specific community and neighbourhood contexts (Parker & Maynard, 2015; Sanderson & Sitko, 2017).^{223,224}

ABA attracted increasing attention in recent years, mostly after ECHO’s evaluation of the European Commission’s Humanitarian Action recommended that shelter should be ‘closely associated with settlements’ (Vanbruaene et al., 2013). The settlement approach recognizes that shelter cannot only be considered as an individual or household issue, as it’s maintaining and creating communities.

The Global Alliance for Urban Crises (GAUC)’s submission to HABITAT III in October 2016 advocated the need to ‘adopt area-based approach to programming and coordination’ in recognition of the scale, nature and complexity of urban crises (United Nations, 2017). The US Agency for International Development (USAID) (2011) argues that ABAs help to improve clarity and understanding in programming by providing a clear location and set of actors to engage with. USAID’s office of US Foreign Disaster Assistance has promoted the idea of shelter and settlement, arguing that it is necessary to consider the wider spatial needs of ‘settlement-based assistance’ and a ‘neighborhood approach’ to engaging with communities, as opposed

²²³ According to Sanderson and Sitko, an area-based approach should be defined as a support to people after a disaster in a specific location. Its main aim is to transition effectively from relief to recovery, working with existing structures and prompt to be scaled up. (Sanderson & Sitko, 2017). ABA provides a multi-sectoral support with the help of multiple stakeholders, considering the whole population living in a specific geographic area with high levels of need (Parker & Maynard, 2015).

²²⁴ These approaches are often used interchangeably, though in recent practice the term Area-Based Settlement Approach (ABSA) has been introduced and may be used to differentiate or exclusively refer to an Area-Based Approach (ABA) within the shelter and settlement sector.

to being driven by sectoral or individual priorities (USAID/OFDA, 2013). A World Bank review on ABAs, following the 2010 Haiti earthquake, concludes that ‘area-based interventions led by local authorities or communities can have wide-ranging benefits, and should be encouraged’ (IRC, 2015). The International Rescue Committee (IRC) also recommended that ‘humanitarian responders should adopt “an area-based approaches”’. And that to coordinate and delivery of services in urban areas, to ensure coordination devices as complement of existing governance systems and accommodate a suitable multi-sector and multi-stakeholder approach that crises require. According to the IRC, ABA is defined as an area or better a space, rather than a mere sector or target group. Within this space, all stakeholders, services, and needs are mapped and assessed, and relevant actors are mobilised and coordinated (IRC, 2015).

In 2013, the global shelter cluster (GSC) called for a ‘wider acceptance of a settlement approach in humanitarian responses’ in its 2013-2017 strategy and ran a session called: ‘Towards a settlement approach: discussion on integrated programming of humanitarian responses and the role of the GSC’. In 2014 the Global Camp Coordination and Camp Management cluster also noted that ‘in urban areas a district, neighborhood or community-based approaches are vital’(Global CCCM Cluster, 2014b). Both organizations emphasized the importance of targeting whole communities, rather than individuals or households, ‘developing effective partnerships and capacity development with a large range of actors at both strategic and operational levels (Global CCCM Cluster, 2014b). Such approaches are more commonly used by development actors. Despite that, literature on ABA lacks consistency and maturity. Special focus has given after the earthquake in Haiti in 2010, Typhoon Hayan in Philippines in 2013 and post-conflict reconstruction in Afghanistan in 2006 highlighting the emerging popularity of the approach.

Evaluating the Area-Based Shelter Approach: Evidence from the Pilot project

Following the Tigray war (2020-2022), the general condition of the Regional State has radically changed with long terms impacts on environment, economy, society and polity. More than 2 million people have uprooted from their place of origin when the war intensified and, after CoHA, only half of it able to return to accessible areas.²²⁵Both emergency post-crises (EPC) and post-war (PW) periods need a response with tailored projects, with particular reference to IDPs living in urban areas with host communities (around 80% of the total IDPs in Tigray). During the household intention survey in 2021, one of the recommendations was the implementation of ABA as a pilot action in targeted area to promote a progressive resolution of displacement and pave the way for a more stable future (CCCM Cluster et al., 2021).

²²⁵ There are no empirical assessments of the conditions of return and resumption of normal life for IDPs. Back home, many of them continue to live in destitute conditions and in urgent and vital need of help.

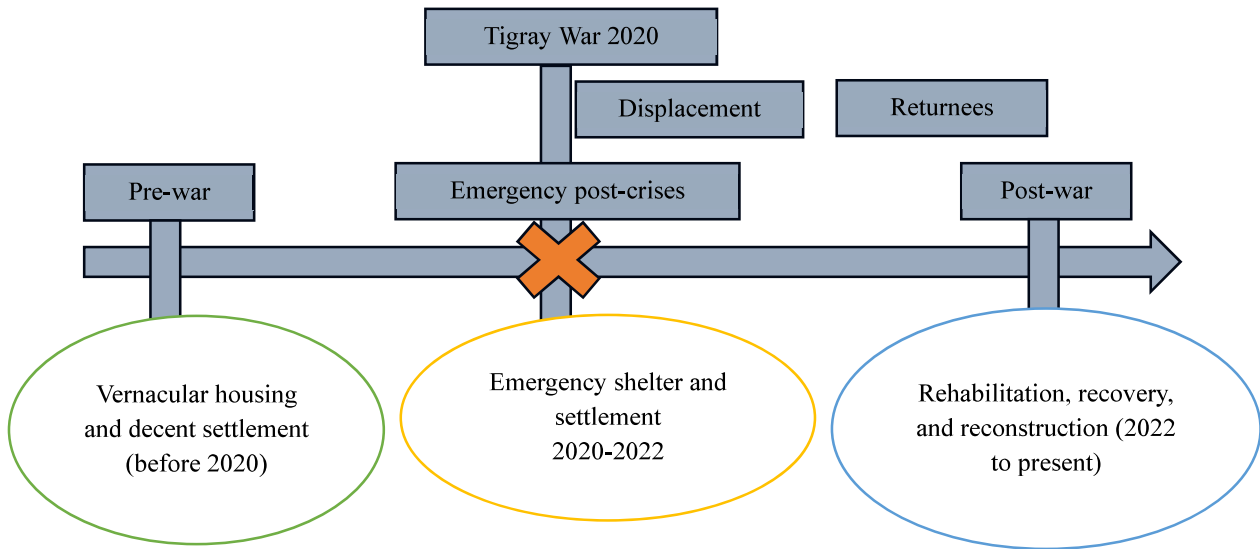


Figure 134: ABA project inception following the war (Source: author,2024)

Pre-crisis context (Before 2020)

Mekelle is an administrative, economic, and cultural center of the Tigray region in the north Ethiopia. Founded by Emperor Yohannes IV in 1890 and served as the capital of Ethiopia at the end of 19th century. According to metro area population prior to the 2020 war, the population of the city was 524,000 with an annual growth rate of 3.76 per cent. The main economic activities were commerce, tourism, and education. The city consists of seven sub-cities (*kifileketema*)²²⁶ and 33 *tabia* (*kebele* or villages). Mekelle city is a home of two palaces called Yohannes IV and Dejat Abrha Castel, which serve prominent landmark. Before the war, Mekelle ranked among Ethiopia's largest cities in terms of population and urban development, second only to Addis Ababa.

Historically, due to its strategic geographical location, the Tigray region has been vulnerable to wars and conflicts. Notable conflict since 20th C include TPLF versus FDRE (2020), Ethiopia vs Eritrea (1998), TPLF versus Derg regime (1975), Tigray versus Emperor Haile Selassie regime (1935), Ethiopia versus Italy (1896 and 1935).

Despite urban growth, approximately 80% of Tigray people continues to live in rural areas, relying on 'garden agriculture' as a primary means of livelihood.²²⁷ Traditional rural housing is characterized by dry

²²⁶ Sub city an equivalent to wereda/woreda in rural areas is a lowest administrative division in governmental structure and it consists of kebele or 'tabias'.

²²⁷ On the Tigrinya plateau, farmers do not generally live in villages, but in shelters separated from each other with farming and livestock systems (Fls) based on fragmented and parceled out land use, often affected by competition between cattle raising and farming. The absence or scarcity of rural settlement clusters gives shape to what is commonly referred to as 'garden agriculture'. In recent years, however, limited agglomeration processes have been taking hold that could represent early forms of urbanization in a rural context.

stone wall and flat mud roof, a vernacular architecture style known as ‘*Hidmo*’ (ህድሞ).²²⁸ In rural areas human settlements do follow an organic and dispersed household patterns. In contrast, urban housing predominantly uses stone, concrete, reinforcement bars, steel and glass, with core housing typologies dominating residential areas. Recent urban expansion, large-scale housing projects, and urban renewal initiatives have accelerated the destruction of the *Hidmo* heritage, with very limited conservation efforts applied except to a few select buildings. The outbreak of war further exacerbated this destruction, leaving much of the city’s architectural and cultural heritage at risk.

During war (2020-2022)

The cities and urban areas of Tigray, including Mekelle, were severely affected by the war, as they hosted a large proportion of IDPs. Prior to the conflict, Tigray experienced rapid economic growth, with notable double-digit GDP increases. However, the war inflicted deep and lasting damage, disrupting economic activities, destroying infrastructure, and causing widespread trauma. The attacks resulted not only in significant loss of life and injury but also extensive destruction of housing and physical structures.²²⁹

Critical services and infrastructure—including education, healthcare, water, electricity, communication networks, and administrative buildings—were heavily damaged or destroyed, as documented by the World Bank, United Nations, and other sources. Mekelle city, in particular, suffered from artillery, drone, and airstrike attacks. During the two-year conflict, Mekelle was under the control of two different command posts: the federally appointed interim government from November 2020 to June 2021, and the TPLF central command post from June 2021 to November 2022. Beyond the conflict itself, blockades, embargoes, and sieges further exacerbated the crisis, leaving many residents without electricity, fuel, cash, medical care, and financial support. All communications, including landline and mobile services, were cut off in the region from November 2020 onward.

International and local NGOs, as well as UN agencies, were the first to deliver aid to affected communities, working in collaboration with local administrations and the Ethiopian Disaster Risk Management Commission (EDRMC). Emergency interventions were implemented by shelter partners, including projects and programs to provide immediate relief. Since November 2020, large numbers of IDPs have relocated to major cities and towns across Tigray, residing in planned and unplanned camps, collective centers, unfinished buildings, host communities, and makeshift settlements. An intention survey conducted by the

²²⁸ “*Hidmo* is a traditional housing system in Tigray, Northern Ethiopia, featuring stone walls and mud roofs; it is discussed in detail in chapter four of this thesis.”

²²⁹ Estimates indicate that between 600,000 and 1 million people died during the conflict, while the IOM/DTM reports that over 1 million homes were either fully or partially destroyed.

CCCM Cluster²³⁰ in Tigray in July 2021 found that 39.2% and 17.2% of IDPs in Shire and Mekelle, respectively, were living in host communities and collective centers. Local integration with host communities was identified as the most viable long-term solution for these displaced populations (CCCM Cluster et al., 2021).

Post-war deeds (post-November 2022)

Despite the peace agreement (CoHA)²³¹, normalization and *status quo ante* is not yet maintained. As IDPs are still not yet returned to their place of origin (though some returnee exercise by UNHCR) and different international medias disclosed that external forces are still committing atrocity in less accessible parts of Tigray.

On March 2022 according to peace agreement a new interim government administration (IGA) has established in Tigray and IGA²³² assemble a new cabinet member with composition from TPLF, TDF (higher leader commands), GSTS and diaspora communities, including opposition parties. The IGA cabinet also rearranged and restructured new cabinet structures to support the relief and recovery plan of Tigray. IGA has a transitional role with a mandate to lead and support the post war activities till the future political election.

At national and regional level, EDRMC and RDRMC (Ethiopia and Regional Disaster Risk Management Commission) are the appointed responsible bodies to coordinate emergency relief effort with support of donors and humanitarian agencies/partners. IGA is mandated to design and implement a post-crisis comprehensive Tigray Recovery and Reconstruction Plan (TRRP).²³³ The reconstruction and rehabilitation secretariat and social affairs and rehabilitation bureau are the newly established IGA cabinet structure responsible for emergency crisis management, IDPs/returnees management, rehabilitation and recovery. Yet, so far, no clear road map has been drawn as complex and fragile political situations are again challenging the Region.

²³⁰ Camp Coordination Camp Management (CCCM) is a technical function that coordinate the temporary assistance and protection activities to displaced persons living in camps or camp-like settings. CCCM's mission is to uphold basic human right to life with dignity.

²³¹ The agreement marks an important step in efforts to silence the guns and provides a solid foundation for the preservation of Ethiopia's sovereignty and territorial integrity, the restoration of services as well as healing and reconciliation.

²³² The regional Interim Government Administration (IGA is the) announced by the office of prime minister of Ethiopia on March 23,2023 following the CoHA.

²³³ The Tigray Recovery and Rehabilitation Program (TRRP) was designed to be implemented over a five-year period (2022–2027), focusing on addressing the immediate needs of conflict-affected communities. It also aims to support the post-conflict recovery of essential services and infrastructure, alongside longer-term institutional measures to enhance community resilience and promote sustainable investment. For further details, see The Federal Democratic Republic of Ethiopia (2022), *Response–Recovery–Resilience for Conflict-Affected Communities in Ethiopia (3R-4-CACE) Project: Project Operational Manual*; accordingly, support should adopt a medium- to long-term scope and scale aligned with a robust recovery and reconstruction plan (TRRP). However, the success of the TRRP is constrained by ongoing political instability, international influences, and donor fatigue.

Exploring the Project

In addition to the ongoing interventions under the Emergency Shelter and Non-Food Items (ESNFI) Cluster, the findings of the intention survey by CCCM cluster 2021, as well as the significant number IDPs residing within host communities, highlighted the need for context-specific and socially responsive programming in Tigray. The strong social ties between IDPs and host communities further underscored the importance of designing tailored shelter responses that address both physical needs and social dynamics.

In response to these contextual realities, a customized shelter strategy known as the “neighborhood approach” or “area-based approach” was introduced. Unlike conventional, standardized emergency shelter interventions, this innovative model—implemented in 2022—represents a shift toward integrated shelter and social policy programming. The pilot project was carried out by the IOM Ethiopia Mekelle sub-office.

Project context:

In Mekelle alone, more than 300,000 IDPs—a figure that fluctuates over time—have been residing in a range of settlement types, including planned camps, host communities, unfinished buildings, collective centers, tents, and makeshift shelters. According to the intention survey conducted by the Camp Coordination and Camp Management (CCCM) Cluster in Tigray in July 2021, approximately 20% of IDPs in Mekelle were living in collective centers. The survey further identified local integration with host communities as one of the durable solutions to protracted displacement (CCCM Cluster et al., 2021).

Against this backdrop, the neighborhood approach project was designed to strengthen social cohesion between IDPs and host families, mitigate protection-related risks, create livelihood and economic opportunities, and enhance access to essential services—such as facilitating the reopening of schools previously occupied by displaced populations. The overarching objective of the pilot intervention was to promote the social integration of IDPs into host communities. Under this model, host families voluntarily accommodated displaced households as extended family members, relatives, or friends, without expecting financial compensation. Shared living arrangements were anticipated to foster mutual support, care, and social solidarity.

The project targeted 300 IDP households (HHs), each hosted by a corresponding 300 host families. Additionally, 10% of vulnerable host households were included in the Non-Food Items (NFI) assistance component to ensure equity and reduce potential tensions. The intervention adopted a hybrid modality, combining in-kind assistance—primarily through NFI provision—with Cash-Based Interventions (CBI) to support both immediate needs and household-level recovery.

Milestone activities during the project implementation:

i. Engagement of stakeholders

From the onset, an active involvement of stockholders (IDPs, host communities, local authorities, humanitarian agencies, ESNFI cluster) paved way for a successful implementation of the pilot project. A local NGO called OSSHD (Organization of social services health and development), which has good experiences on awareness creation campaigns²³⁴, has been engaged with success. The NGO helped to create a grass root level awareness, getting feedback from IDPs and host communities starting from the launching of the project. A combined bottom-up and top-down approach was implemented to understand the stockholders' project-related expectations.

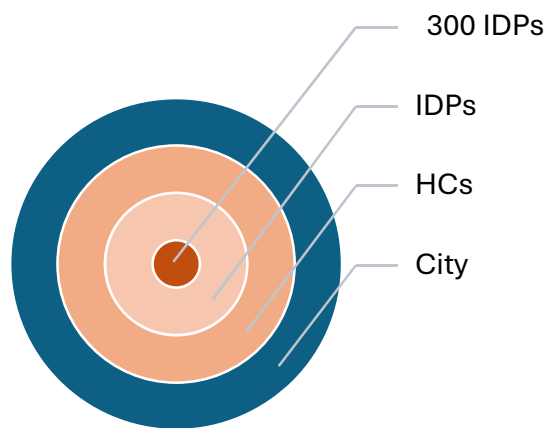


Figure 135: Hierarchy of project target: City, host communities' and IDPs (abstraction by author, 2023)

The involvement of local authorities at the city, sub-city, and tabia/kebele levels was instrumental in clarifying the nature of the response, identifying gaps in needs and interventions, and determining which host communities were most appropriate for participation. Consequently, local authorities—particularly the heads of the sub-city Bureau of Labor and Social Affairs (BoLSA)—endorsed a proportional allocation of beneficiary quotas across the seven sub-cities. In addition, consultations were conducted with IDP representatives and community leaders to guide the targeting and selection of beneficiaries, verify processes, manage expectations, and communicate the overall principles and values underpinning this innovative approach.

ii. Intention and housing typology surveys

Intention surveys were conducted for both IDPs and host families to inform the project's planning and targeting. For IDPs, the survey explored their preferences regarding host family households, their intended duration of stay, and their overall plans for remaining in the community. For host families, the survey

²³⁴ OSSHD has been engaged during the crisis and post war as local partner for CCCM in different sites.

assessed willingness to accommodate IDPs, household characteristics, available accommodation capacity, and the expected duration of hosting. In both cases, data collection was carried out through door-to-door interviews.

Additionally, separate focus group discussions (FGDs) were conducted at the neighborhood level with IDPs and host community members. These discussions aimed to identify ways to improve existing shelter conditions and enhance the living standards of IDPs, while also fostering mutual understanding and positive social interactions between IDPs and host households. During the door-to-door interviews with host families, detailed information was collected on the physical and functional conditions of their housing, including any modifications made to accommodate displaced households and improve hospitality.

iii. Conception of housing typology:

Based on the findings from the intention surveys and housing typology assessments, several key considerations were identified to guide spatial, shelter, and settlement interventions:

- IDPs living in collective centers and host families often occupied congested spaces, highlighting the need for alternative and innovative shelter solutions.
- Indigenous construction knowledge and vernacular architecture, locally known as ‘Hidmo’ (ዘድግ), characterized by thick stone walls and flat mud roofs, provides an important model for designing new open or enclosed spaces. These traditional techniques can inform the development of gardens, climate-resilient structures, and energy-efficient environments. Consequently, maintenance or expansion of host family dwellings became a core component of the area-based project, while also serving as an operational test to make existing building codes more responsive to heritage preservation.
- Conditional Cash-Based Interventions (CBI) were preferred due to their flexibility and potential for integration with other shelter kits and tools.
- Strong social and familial ties between IDPs and host households supported reintegration efforts and fostered social cohesion within communities.

Building on the insights from the intention surveys, household site visits, and housing typology assessments, a preliminary sketch of housing types was developed to identify the key spatial interventions required. These assessments informed the design of three targeted intervention scenarios—expansion, renovation, and rehabilitation of damaged shelters—each corresponding to the most prevalent housing typologies among IDPs and host families.²³⁵

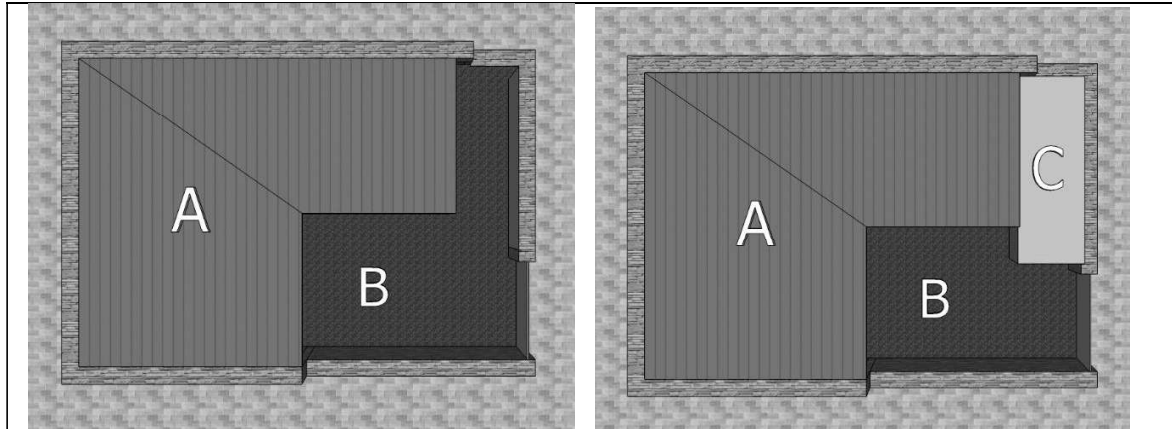
²³⁵ In certain cases, the rehabilitation of damaged shelters can anticipate renovation and expansion interventions in an incremental process of improving housing conditions and enhancing the value of housing and settlement stock.

To operationalize the identified intervention scenarios, each was translated into a corresponding “option shelter kit”²³⁶, which integrates findings from door-to-door household surveys with technical guidance and consultation from the IOM Shelter unit and ESNFI sub-national cluster. The shelter kits provide a practical framework for implementing interventions while enabling the estimation of short-, medium-, and long-term benefits, including additional space creation, structural reinforcement, and overall enhancement and upgrading of living conditions. In this way, the empirical datasets and field-based assessments were transformed into context-sensitive and actionable shelter solutions within the project. Although the intervention was initially conceived at the household level, its scope progressively expanded to selected neighborhoods and eventually to the broader urban settlement scale, reflecting its wider implications for spatial organization, service provision, and community-level planning.

Table 28: Area-Based Approach Shelter and Settlement Responses: Three Intervention Scenarios

<p>Box 3: Three shelter and settlement intervention scenarios developed under the ABA pilot project.</p> <p>Scenario/Kit-1: Provision of additional livable space</p> <p>This scenario involves creating additional living space for IDPs through two primary modalities:</p> <p>Extension for new shelter construction:</p> <p>New shelters can be developed by extending the existing host family house, allowing for cost savings on walls (up to three sides) and plastering by utilizing common walls of the existing structure or neighboring buildings. In-kind repair materials can be used to facilitate the expansion. Available setback areas, green spaces, or open plots within the property can serve as locations for these new shelters. According to local residential building regulations, the ratio of built-up area to open or green space should be 60/40, which supports optimal placement and allows for private circulation and easy movement. In line with Sphere standards, each person requires at least 3.5 m² of living space; for an average Tigrayan household of five members, the minimum additional shelter area should be 17.5 m². These structures are intended as temporary accommodations and can be constructed as horizontal extensions of the existing core house.</p> <p>Expansion of existing house/shelter:</p> <p>This involves increasing the living space of the current shelter using structural techniques aligned with local building regulations. Stone fences surrounding 2–3 sides of the house can be incorporated as part of the extension, reducing construction costs. Expansion serves to decrease overcrowding among IDPs residing with host families. Based on door-to-door surveys and spatial assessments, approximately 25% of targeted households (75 HHs) expressed interest in this modality and were included in Scenario/Kit-1. The kit provides necessary construction materials, including CGI sheets, wooden poles, capes, and structural nails, to support the expansion process.</p>

²³⁶ The shelter tool kit is specifically designed for distribution after a disaster in which the shelter capacities of the population have been affected. In this case parallelly use the term NA kit or shelter kit.



a) Existing host families house

b) Existing host families house with new shelter

New expansion (optional development):

Legend:

A: Existing residential building (host families)

B: Open space (mainly green area)

C: New shelter expansion (IDP)

Local building regulations and codes:

- Residential buildings: 60% built-up area, 40% open space

Space for the intervention:

- Setback area, open/green space

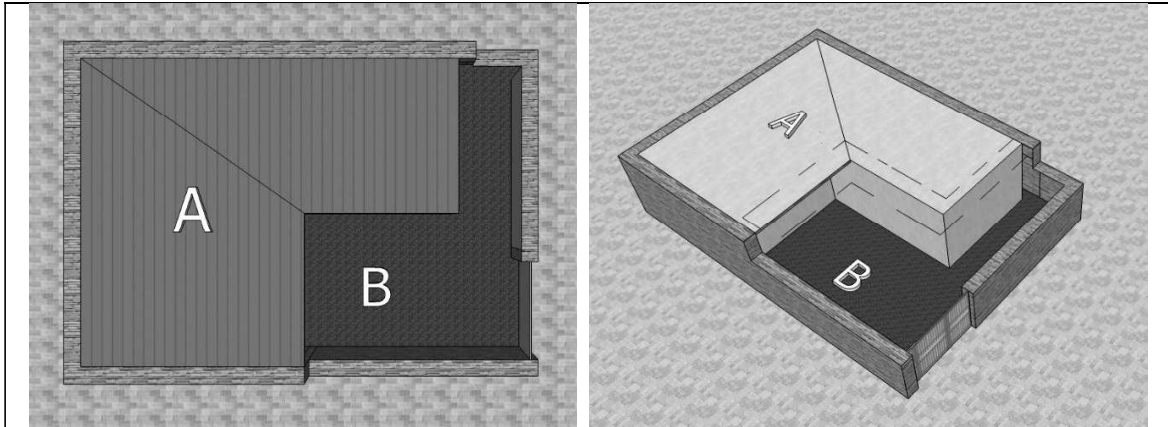
Advantages:

- Cost savings through shared walls for the new shelter and easy access

Scenario/Kit-2: Reinforcement of livable space

This scenario focuses on **renovating existing shelters** by conducting major maintenance on the IDPs' current or proposed structures and replacing or repairing key shelter components. Interventions include fixing non-structural elements such as roofs, doors, and windows to improve habitability, safety and privacy. Based on door-to-door surveys and spatial assessments, approximately 45% of the targeted households (135 HHs) fall under Scenario/Kit-2.

The kit for this scenario provides the necessary materials to carry out the renovations, including CGI sheets, wooden poles, cement, capes, structural nails, T-hinges, and lock systems for doors and windows. This approach strengthens the existing shelters, enhances living conditions, and ensures safer, more durable accommodations for IDPs.



a) Existing host families house

b) Renovated existing host family house components

Legend:

A: Existing residential building (host families and IDP living together)

B: Open space (mainly green area)

Building components for the intervention:

- Roofing, wall, door/s, and window/s replacement

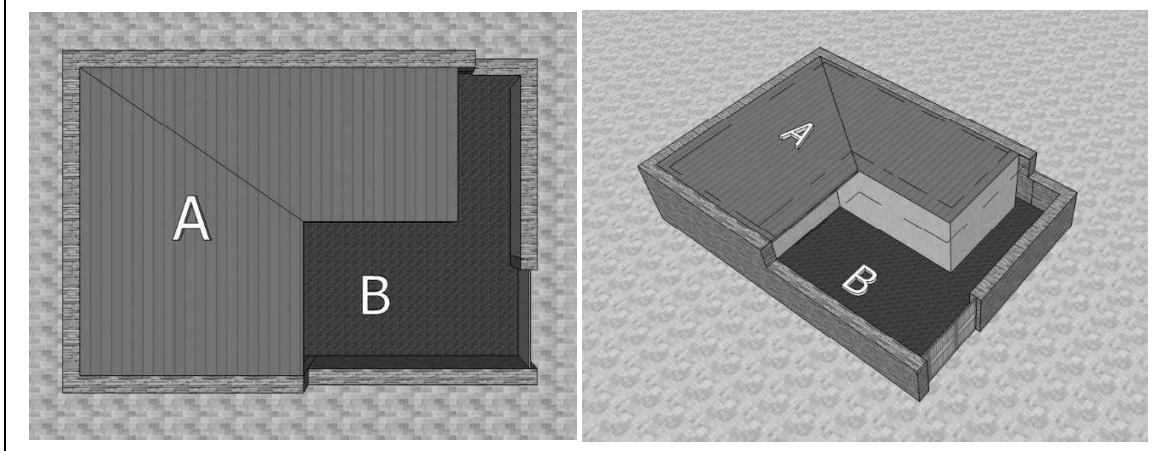
Advantages:

- No additional construction is required, and existing structural components are assumed intact; however, if crowding is high, protective concerns may arise

Scenario/Kit-3: Enhancement of livable space

This scenario focuses on the **rehabilitation of damaged shelters**, aiming to improve the livable space of IDPs by addressing worn-out or exhausted areas of their current dwellings. Interventions under this scenario include minor repairs, upgrading, and restoration activities, such as painting, plastering, and plumbing, to enhance overall habitability. Based on door-to-door surveys and spatial assessments, approximately 30% of the targeted households (90 HHs) were identified as beneficiaries for Scenario/Kit-3.

The kit for this scenario provides materials including cement and nails, complemented by a **Cash-Based Intervention (CBI)** of USD 75 per household, intended to cover labor costs for the repair works. This approach ensures that shelters are restored to a safe and functional condition while supporting local labor and promoting household engagement in the rehabilitation process.



<p>a) Existing host families house</p> <p>Legend:</p> <p><i>A: Existing residential building (host families and IDP living together)</i></p> <p><i>B: Open space (mainly green area)</i></p> <p>Intervention:</p> <ul style="list-style-type: none"> • It varies but typically includes plastering, painting, plumbing work etc. <p>Advantages:</p> <ul style="list-style-type: none"> • Similar to renovation 	<p>b) Rehabilitation of existing host family house</p>
--	--

iv. HLP verification, beneficiary sensitization and grouping:

Housing, Land, and Property (HLP) rights were systematically verified for each participating host family to ensure tenure security and prevent potential disputes. Only host households possessing valid Tenure Security Documents (TSD) were deemed eligible to accommodate IDPs, thereby minimizing risks related to eviction, competing claims, or conflicts of interest. This verification process was essential to safeguarding both beneficiaries and the integrity of the intervention.

To enhance awareness of HLP considerations and strengthen community support mechanisms, sensitization sessions were conducted with beneficiaries. IDPs were organized into groups of 10–15 households to facilitate communication, mutual accountability, and collective engagement. Within these groups, households were encouraged to support one another throughout the shelter implementation process, including the management and distribution of shelter kits. This group-based approach promoted shared responsibility, transparency, and community cohesion during project implementation.

v. Distribution of kits and cash assistance:

Shelter kits and cash assistance were distributed in two phases, complemented by a one-time conditional cash disbursement. In the first phase, households received partial repair kits sufficient to complete approximately 50% of the planned works, primarily enabling the erection of basic structures in expansion or extension cases. The second phase, including the remaining in-kind materials and Cash-Based Intervention (CBI), was provided conditionally upon verification of agreed construction milestones by all group members. This phased approach promoted accountability, quality control, and collective responsibility among beneficiaries.



Figure 136: Shelter kits and cash distribution in Mekelle city (Source: IOM Mekelle, 2022)

vi. Shelter construction:

Following the receipt of repair kits and cash assistance, beneficiary households proceeded with shelter construction and rehabilitation. Implementation modalities varied: some households undertook self-construction of emergency shelters, others collaborated in small groups based on proximity to provide mutual support, while some hired skilled laborers—such as carpenters or masons—using the cash assistance provided. This flexible approach allowed households to select the most appropriate construction method based on their capacity, resources, and local context.



Figure 137: Outcomes of ABA shelter and settlement intervention (Source: IOM Mekelle, 2022)

vii. Supervision and monitoring:

During shelter construction, IOM shelter technicians conducted monitoring to verify progress and ensure that each household group was utilizing the provided resources effectively and efficiently. Door-to-door assessments were carried out to offer technical support, identify challenges, and provide guidance throughout the implementation process, ensuring quality and timely completion of the interventions.

viii. Post-distribution and monitoring (PDM):

The final milestone of the project involved assessing the immediate outcomes of the shelter and settlement interventions. PDM, conducted a month after the second phase of kits and cash distribution, revealed that approximately 40% of total beneficiaries had completed the construction of their shelters within host family homes were living integrated with the host communities. This assessment provided critical insights into the effectiveness of the interventions and the degree of beneficiary engagement.²³⁷

Challenges and proposed solutions

The pilot project was not without challenges. A majority limitation lies in the fact that most humanitarian of tools, approaches, policies, and practices are originally designed for camp and rural contexts, yet often applied in urban settings, paradox that characterizes the field of Humanitarian urbanism (HU). Although many interventions have been adapted to urban areas, they still require further refinement to be fully effective in urban humanitarian responses. The Neighborhood Approach (NA) pilot in Mekelle sought to bridge this rural-urban gap despite significant constraints, including embargoes, blockages, and siege conditions that severely disrupted communication, public services (such as banking), and government operations for two years. consequently, CBI amount was reduced by 60%. Several specific challenges arose during the pilot:

- Limited shelter options: Households (HHs) initially preferred tailored shelter solutions and kits. However, to ensure the pilot project could be scaled, only three kit scenarios were developed.
- Restricted materials: The three kit scenarios relied solely on industrial materials (nails, CGI sheets, cement, etc.), as local materials could not be procured due to the blockade. The blockade also caused prices for available materials to increase, often doubling costs—a further paradox.
- Budget variation: Budgets for each kit scenario were based on assessed needs. Type 1 (expansion of space) was 18% more expensive than the other two options, requiring intensive social sensitization from the outset to minimize potential conflicts during distribution.
- Communication and dispersed households: The scattered location of host family homes created bottlenecks for registration and monitoring. The team addressed this by clustering beneficiaries according to spatial proximity.
- Administrative restructuring: Reshuffling and restructuring of sub-city administrations disrupted institutional memory. The team mitigated this by maintaining close collaboration with incumbent officials.

²³⁷ PDM is a 'post distribution exercises. It assesses location and timing of specific shelter kit distribution throughout humanitarian organizations and collect beneficiaries' feedback. The 40% execution shows only the initial PDM not the general project outcome.

Lessons learned: key insights

- **Post-distribution monitoring (PDM):** A PDM was conducted in September 2022, providing a more comprehensive understanding of the project and valuable lessons from its implementation. PDM functioned effectively as part of the overall evaluation framework. It was carried out by the shelter unit that had managed the distribution of materials, tools, and resources. However, as a MEAL exercise, it would have been preferable to involve independent experts to ensure greater objectivity.
- **Community cohesion and solidarity:** Feedback from local authorities, internally displaced persons (IDPs), and host communities indicates that the project fostered solidarity and strengthened social cohesion. If implemented on a larger scale, the project could help reduce overcrowding in schools and collective centers, allowing these facilities to return to normal operations.
- **Context-driven decision-making:** The project benefited from a strong understanding of the dynamics between IDPs and host communities. All major decisions were based on initial data collection, with necessary adjustments made along the way. This context-sensitive approach proved critical to the project's success.
- **Sectoral integration:** The project was not initially linked with other sectors such as WASH, health, protection, or CCCM. For future scaling, integrating these sectors would be strategic. A CCCM ABA²³⁸ could potentially coordinate multi-sectoral interventions more effectively.
- **Protection and gender considerations:** Efforts to pair IDP households with host families allowed for careful attention to protection, gender mainstreaming, and oversight. This ensured that the project adhered to the “Do No Harm” principle and was implemented responsibly.
- **Replication and scaling:** Following positive outcomes and sustained advocacy by the implementing partner, new donors launched a similar ABA in 2024 in Adigrat town, demonstrating the potential for replication and scaling of the approach.

Hints to evaluate NA pilot project: Ten ABA principles and key elements

A pilot project supporting IDPs living out of camps with host communities presents both opportunities and challenges. As an urban shelter and settlement intervention, it facilitates the sharing of basic services among IDPs, host families, and municipal authorities. Implemented as an Area-Based Approach (ABA) project, its evaluation using ABA principles offers valuable insights for further study, discussion, and lessons applicable to similar future projects.

²³⁸ CCCM ABA is an activity, and skill sets in applying area-based approaches in humanitarian responses in order to address some of the pertinent challenges in camp-like settings as well as dispersed contexts.

Area-Based or Neighborhood approach (ABA/NA) do help the transition from relief to recovery²³⁹; it works with existing structures and can be scaled up (Sanderson & Sitko, 2017). Five key elements of ABA do deserve attention, namely:

1. People-centered, as meaningful engagement with affected population is essential.
2. Focus on defined area, such as a neighborhood.
3. Take time, spanning relief to recovery.
4. Can be scaled-up to other areas, which emphasizes the need for local ownership.
5. Rely on strong collaboration between sectors and key-actors.

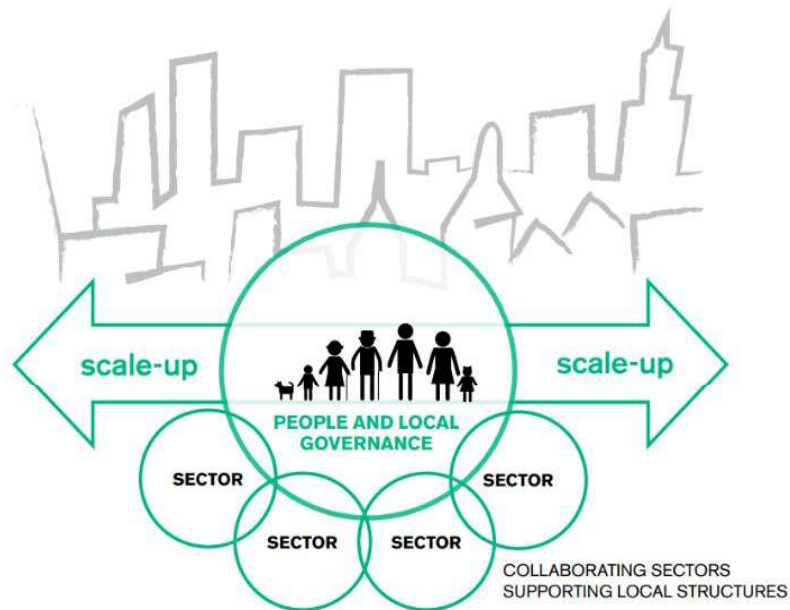


Figure 138: ABA multi-sector collaboration (Sanderson & Sitko, 2017)

Within a context-driven project management cycle, the ten principles are typically applied by humanitarian agencies in response to naturally triggered urban disasters. In this study, however, the neighborhood pilot project was also evaluated using the criteria proposed by Sanderson and Sitko (Sanderson & Sitko, 2017).²⁴⁰ The following section examines in detail the three categories of principles and criteria, as applied across the three phases of the project cycle.

²³⁹ Effectiveness in post-conflict transition processes could favor the inclusion of these approaches in the Tigray Recovery and Reconstruction Program (TRRP). If this has not happened to date, it is largely due to the political and administrative uncertainty that hinders real recovery.

²⁴⁰ This combination could allow a robustness analysis of the different classes of criteria, improving the evaluation designs themselves.

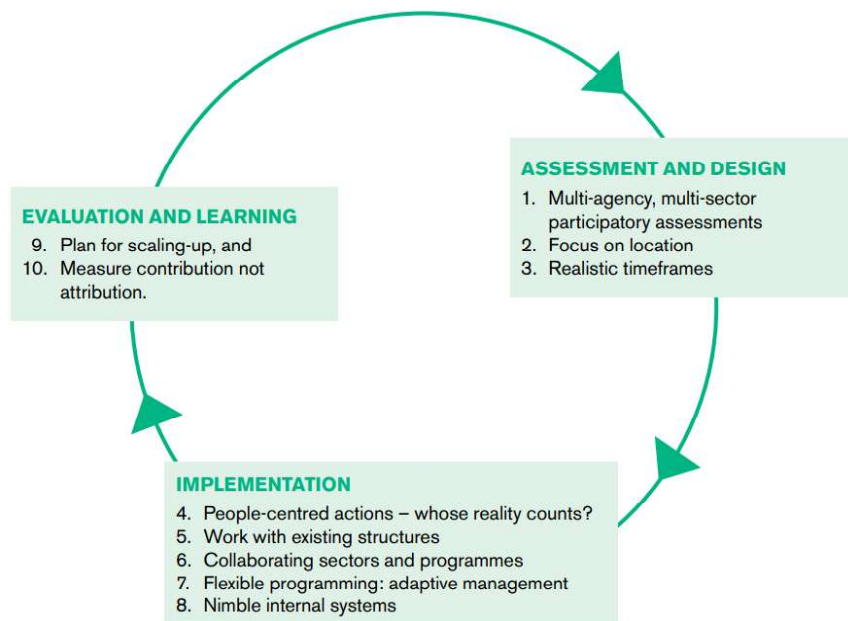


Figure 139: Core principles and criteria applied to Urban ABA in post-disaster context(Sanderson & Sitko, 2017)

i. *Multi-agency, multi-sector participatory assessments*

A sector-based vulnerability analysis and targeting approaches are ill-suited to complex urban crises, where needs are interrelated. A population’s needs for shelter, WASH, health, food security, and livelihoods do not exist in isolation from one another. Rather, needs interact with shape vulnerability and must thus be met with a multi-sectoral approach to guide targeting (Patel et al., 2017).

The best known multi-sectoral/multi-agency assessment approach is probably the ISAC’s Multi Cluster/Sector Initial Rapid Assessment (MIRA), which is intended to be undertaken within the first two weeks of a disaster. Its aim is to enable humanitarian actors to “develop a joint strategic plan, mobilize resources and monitor the situation and the response” (IASC, 2012a). There are five stages of MIRA process: (1) initiation; (2) secondary data analysis; (3) community level assessments; (4) analysis; (5) dissemination.

In the case of Neighborhood approach followed in Mekelle, during the onset the project proposal was heavily relay on CCCM and protection cluster (with the help of partners) Household intention survey, conducted in July 2021, revealed that integration with host communities can be a long-term durable solution (CCCM Cluster et al., 2021). In related IDP in urban area host communities specific to shelter sector, an assessment and intention survey conducted in seven sub-cities of Mekelle by IOM shelter unit with the support of OSSHD (local NGO) and local authority BoLSA (bureau of labor and social affairs) office. The assessment is done including intention survey for both IDPs and host families along with housing typology assessment. Direct observation of housing typology, interview and FGD have used for IDPs and host

families. Key informant interview (KII) and FGD have been conducted for local authorities. All the data collection for both communities is based on MIRA advised method and the data were both qualitative and quantitative. The NA project is people-centered, and beneficiaries participate in setting problems and issues rather than heavily depends on the NGOs. On the basis of that, tools and standards (type, nature, focus area and alike) have been properly assessed for multi agencies.

ii. *Focus on location*

An essential element of an ABA/NA concerns prioritizing a geographic location, such as a neighborhood, market or a serious of street as the starting point for intervention. Too often, during emergency and recovery operations the context of the people's lives is missed (Clermont et al., 2011). Identifying the right location in which to work is therefore critical, and ought to be undertaken in close consultation with concerned communities, involved actors and government authorities (indeed, governments may allocate areas where agencies are to work). Based on the outcome of multi-agency/multi-sector assessments, social needs and demands can be easily identified. Consultation within and between cluster²⁴¹ is also essential (inter-cluster). The following identification factors might be considered:

- Previous engagement in an area, to link post-disaster recovery with pre-disaster neighborhood engagement (pre-post view).
- Links with partners organizations, who may have worked previously in the area.
- Playing to respective strength. An organization focused on sheltering can be the pivot for other sectors (pivotal approach).
- Possibilities for long-term engagement, building relationships and aiming to strengthen local governance.

The selection of Mekelle as a suitable location for ABA/NA project does meets many requirements. It was an ideal location for urban area humanitarian responses during and after war and recovery time for four folds: i. it accommodates the highest number of IDPs according to IOM-DTM data; ii. it is the second largest city in Ethiopia and regional capital and biggest city in Tigray; iii. It hosts many NGOs and UN agency partners; iv. local government and regional (interim government) function well with relatively long-term engagement.

iii. *Realistic timeframe*

Beyond immediate life-saving actions following a disaster, the belief that aid needs to be hurried is largely a myth. A study by Anderson et al. (2012) of experiences of people to humanitarian relief and recovery

²⁴¹ Inter-Cluster Coordination Group (ICCG) brings together cluster coordinators and co-coordinators as well as other key stakeholders under the overall strategic direction of the HC/HCT to coordinate implementation of the Humanitarian Programme Cycle.

operations found that what people needed was less speed and more consideration. Many feel that too much is given too fast, and a very few people call for more aid. Virtually everyone says they want ‘smarter aid’ (Anderson et al., 2012).

Similarly, IMPACT and United Cities and Local Government (IMPACT & UCLG, 2016) recommended for the future urban responses that: the current humanitarian architecture is built around sector-specific planning, short-term funding and program cycles and national level coordination. This is not appropriate in the highly complex and dynamic environments witnessed in urban crises, where humanitarian best practices point instead to holistic, longer-term action and higher levels of engagement with sub-national actors. Therefore, many relief and recovery responses should not be rushed—an issue that contrasts, as noted, with the tight timeframes that aid organizations, donors, and sometimes national government, may impose, and which may be odds with the realities of the pace of recovery needed for success to be achieved.

NA/ABA are people centered activities (see principle 4) and rely as far as possible on people determining their own recovery. Needless to say, this approach takes time. Such activities, if they are to be successful, may fall outside strict timeframe of some donors, whose windows for relief and recovery operations can be short. NA piloting project in Mekelle has funded by Ethiopian Humanitarian Fund (EHF)/UNOCHA and the project scope was one year (proposal to execution and PDM conducted in 2022). If project timeframes are too short, and there is little scope to extend, then aid provision should be used as investment towards long-term recovery actions. They will live long after the aid programme has ended and have the chance of being scaled up (see principle 9). As a result of the success, and despite short-term of the pilot activities, NA project has been able to be scaled up into Adigrat town with BHA/USAID. Therefore, donor and project aim was integration of IDPs and HC in a long-term vision.

iv. People-centered actions: whose reality counts?

Adherence to what are commonly known as people-centered approaches or actions involves:

- Supporting affected population in their own recovery progress.
- Adopting a consultative, facilitative approach.
- Taking the time to listen (through participatory assessment); and
- Using tools such as those common in action planning (see principle 7)

The importance of such an approach is identified in the 2014 core humanitarian standard, namely standard four: the response is based on participation. In summary, the more people are engaging themselves in determining their own outcomes, the better the results. A question of ‘whose reality counts?’ relates to interventions undertaken by external agencies on local populations, and is intended to consider aims, desires and aspirations of affected people first and from that, to implement programmes that are relevant first and foremost to people.

During NA piloting activities in Mekelle in the year of 2022, the shelter responses about distribution, construction and improvement of shelter was managed by IDPs (beneficiaries) themselves by arranging a group of 10 HH families based on spatial proximity within the seven sub cities.

v. *Work with existing structures*

A common critique of humanitarian response and recovery programming is the creation of parallel structure. For example, setting up medical services that ignore existing societal structures within an affected location may undermine existing health care service delivery (Clermont et al., 2011).

For interventions to be effective and resilient after the program conclusion, activities must engage with existing structures. Even if these are weak-otherwise, such structures may be weakened even further. Structure here are taken to mean services provided by government, and also utilities such as water supply, electricity, and sewerage. A study conducted by ALNAP (Active Learning Network for Accountability and Performance) concluded that, if long-term recovery is to be sustained, then working with government structures is a necessity, not a choice. Activities to be undertaken (in association with principle 2 and 3 on location and timeframes respectively) include:

- Consulting with government structure, in particular city authorities.
- Engaging with effective members of civil society, such as national NGOs and faith-based groups.
- Taking time to understand existing dynamics and structures, such as local legislations.

The role of agencies therefore is to adhere local structures and approaches-even if it seems useless and takes longer. In some instances, more difficult. Such an approach may also mean a shift in roles, away from direct service provision towards consultative and advisory attitudes. This is especially the case in urban areas, which are characterized by concentrations of skills. A similar view in The Sphere guidelines note: ‘depending on the capacity of the local authorities, the humanitarian’s role may be more about facilitation and enabling than direct services provision’ (Mountfield, 2016).

The approach adopted for engaging with local actors such as city authorities, national NGOs, business and other local actors is a vital one. There are different styles of engagement, relating ‘importance of getting the job done’ with ‘importance of the relationship’. If successful ABAs involve local ownership in scale-up and sustainability, then investing in building relationships is vital for building ‘accommodation’ and ‘consensus’, even if this takes time. The trade-off between interaction and effectiveness is a crucial issue, as indicated in figure below.

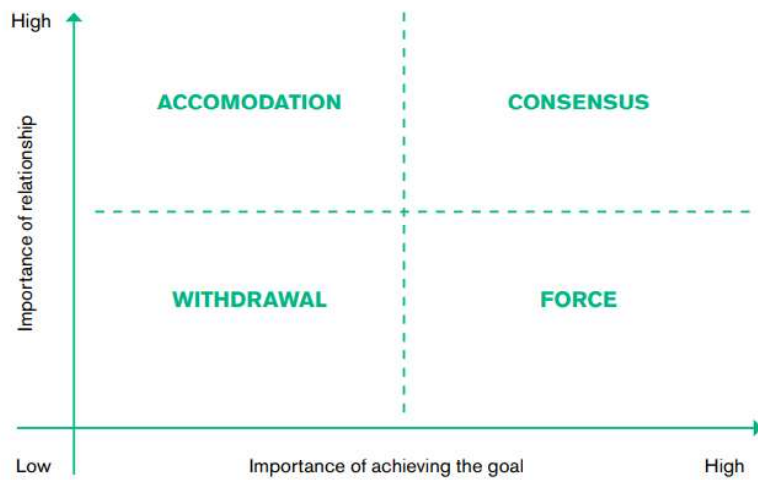


Figure 140: Type of engagement (Suri, 2016)

vi. *Collaborating sectors and programs*

Intersectoral collaboration is essential to deliver a more coherent and unified response. As the office for the Coordination of Humanitarian Affairs, OCHA (2005) notes: ‘no single humanitarian agency can cover all humanitarian needs; collaboration is not an option, it is a necessity’. In urban areas, with overlapping and complex needs, collaboration is strategically relevant (OCHA, 2005).

While cluster system has led to improved coordination in humanitarian action, there are also deficiencies. They include weak coordination between operational actors; lack of sufficient engagement with local structures; insufficient engagement with local and national government (Humphries, 2013). These challenges are especially compounded in urban areas. As a result, ISAC has even challenged the very validity of cluster approach in urban recovery operations: ‘the current cluster system is structured around sectors of expertise and sectorial coordination, while in a context of urban crises there might be a need to identify and respond holistically to multi-sectorial needs in a given territory, requiring stronger inter-cluster linkages and coordination at city-level’(IASC, 2018a).The IRC (2015) agrees on that: ‘The traditional cluster system does not lend itself to the complexity of needs, services and systems across an urban landscape with humanitarian agencies struggling to deal with the complexity, density and built environment of towns and cities or able to take full advantage of the potential a city has to offer’(IRC, 2015).

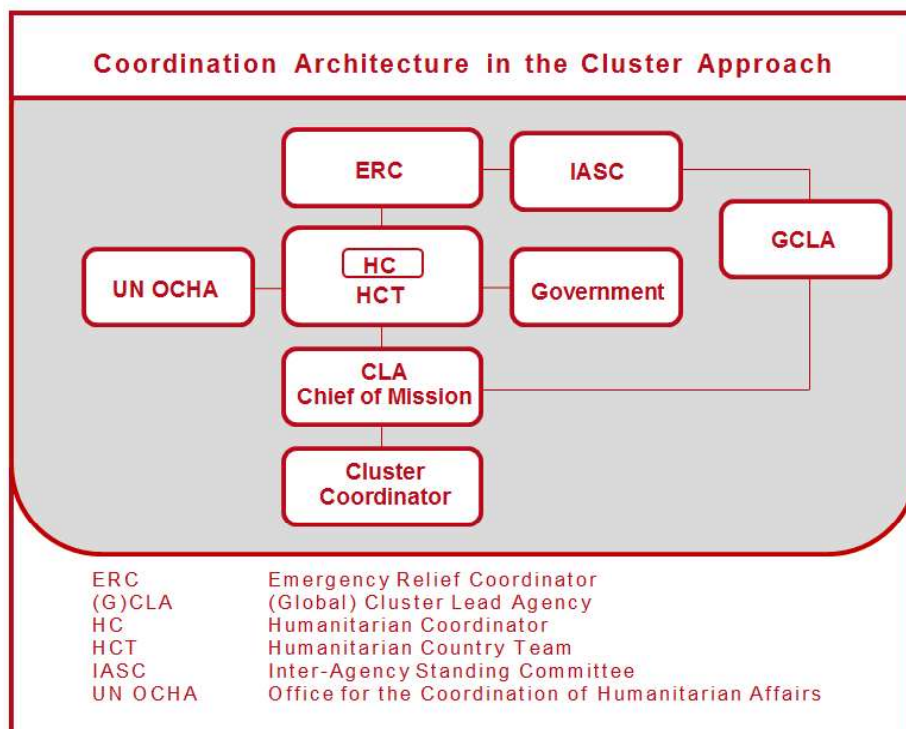


Figure 141: Humanitarian coordination architecture

As to ABA/NA it is essential, both within and between sectors, to ensure a coordinated and collaborative approach. The risk of not doing so implies less effectiveness and efficiency in implementation. According to the humanitarian architecture ESNFI national and subnational coordinating and supporting the project from the start of the implementation. Key actions therefore include:

- Drawing lessons from Humanitarian Reform Agenda (OCHA, 2005), strong and predictable leadership is required. Ideally this is provided by local structures.
- According to ISAC working document(IASC, 2018a), adopting a city-level inter-cluster working group (led by city authorities wherever possible) that ‘would support stronger coordination among sectors and with local actors.’
- Organizations ceding control to other, for instance one agency undertaken operations in a particular area, and other agencies provide inputs under the agency’s management, in order to provide clarity of whom to engage with, from the point of view of the local population.
- Identifying representative local structures with which collaborating organizations can engage.

vii. *Flexible programming: adaptive management and log framing*

A long-recognized hindrance to effective programming in aid responses relates to tools, funding flows and administrative requirements that are insufficiently flexible (Wild et al., 2017). This is particularly the case in urban recovery operations, where needs and requirements may rapidly change (Sanderson et al., 2012). Programming tools and approaches therefore need to be flexible. To these ends, adaptive management, ‘a programming approach that combines appropriate analysis, structured flexibility, and iterative improvements in the face of contextual and casual complexity’ may provide one such direction (Chambers & Ramalingam, 2016).

Tools such as logical framework analysis (logframe) are well suited to ABAs. When used correctly, they provide a clear project focus (the purpose), clarity of accountability (the indicators) and a testing of potential project risks (the assumptions). Logframes however are all-too-often misused (or their intention misunderstood), which can lead to reduced effectiveness and efficiency in implementation. Three common issues for the misuses of logframes that can affect ABA are:

- Logframes with a single sector purpose, which forces implementers at project level to focus exclusively on achieving that purpose. A single-sector purpose in a singular ‘metric of success’ which by definition forces a single-sector approach throughout a project, from inception to implementation and monitoring and final evaluation.
- Outputs and indicators that are inputs, for example, ‘1000 tents delivered’, which if not accompanied by other indicators that measure quality (for example, ‘degree of satisfaction of users’) lead to programmes with little incentive to monitor project benefits.
- Inflexible logframe usage, wherein implementing agencies cannot make adjustments to changing circumstances once a project is underway (and therefore not reflecting the quick-changing nature of urban programming). This issue touches on a wider usage of logframes when they become part of a contract between donor and implementer and are then at risk of becoming inflexible (unless an agreement is in place to regularly amend operational logframes).

Logframes therefore need to be flexible in their usage, which can be achieved through the careful crafting of purpose, outputs and indicators. In programming terms, this suggests a less tight control over day-to-day actions, with greater autonomy of actions in the hands of others.

Taking an action planning approach might be a further positive input. Action planning provides an established people-centered approach for working in urban low-income urban settings (Hamdi & Goethert, 1997). It was originated to reflect the complexity and fast-changing nature of urban life, where people themselves need support to determine their own actions. Action planning can be defined as ‘a framework guided by the belief that people are creative and capable and can and should do much of their own investigation, analysis and planning ... than outsiders (funders, experts, public officials) have a strategic

role to play as convenors, disseminators, catalysts, facilitators and policy formulators.... Creating opportunities for discovery and a context for work which can be understood by all' (Hamdi & Goethert, 1997) .

The main characteristics of action planning do relate to approaches to be adopted by implementers wherever appropriate. This is therefore not a checklist to be adhered to, but rather a set of attitudes about how to engage in urban complexity. Namely:

- Problem-based and opportunity driven, to give clarity to actions to be undertaken.
- Based on achievable actions, which is important to build confidence that recovery can take place.
- Reliant on local knowledge and skills, emphasizing local ownership.
- Non-reliant on complete information, using the principle of 'optimal ignorance' to avoid the notion that everything needs to be known before anything can happen.
- Embrace serendipity, given the importance of local connections, and alike.
- Actions are incremental rather than comprehensive-this is particularly important given the short funding cycles often associated with post-disaster recovery.
- Focus on starting points rather than end states, reflecting the complexity of urban programming, where initially envisaged approaches may not be appropriate as the project progresses.
- Fast, but not rushed, to ensure momentum for recovery.
- Visible, tangible outputs, to encourage replication elsewhere.

viii. Nimble internal systems

The internal systems of implementing organizations also need to adapt to the realities of urban programming, if interventions are to be successful. For an urban ABA/NA to have the best chance of success, the internal systems of agencies, such as human resources (HR) and finance, need to be aligned to the purpose and to the overall goal of the program. One way to achieve this is to involve HR and finance staff at the earliest stages of the design of an ABA. What can lead to a smoother functioning of support services during the implementation of a programme with agreed clarity (between programme and non-programme staff) on the overall aims. Another important key action is to ensure competent and appropriately skilled management that engages successfully with local priorities and concerns. As the NA project implemented when the implementation location was under blockage and siege and with less access opportunity to financial institutions and communication services.

ix. Scaling up

Scaling-up mean the replication of actions to other areas in a city or elsewhere, including the potential adoption of approaches into a wider policy level. A successful ABA should take into account from the very start how the programme will be scaled up to other locations and within wider city actions as well as

continuing to develop in its own right. In order to increase the chances of scale-up, the following actions need to be considered at the outset of an actions:

- Ensure local ownership as far as possible (principle 4)
- Work within local structures and municipal planning process (principle 5)
- In deciding on locations, discuss with other implementing organizations how an uneven approach can be avoided.
- Ensure area-based project does not work against wider municipal urban planning and development by coordinating with the local government²⁴².

Scaling-up is rarely discussed in post-disaster recovery programme. Given the projectized approach of most humanitarian aid responses, there are challenges to scale up, they include (UNDP, 2013).

- Insufficient analysis of social, cultural and economic conditions and relationships, leading to projects with a narrow focus that are hard to replicate.
- Project duration which may be short and not aligned to the timetables of other organizations.
- Short-term and/or unpredictable funding.
- Lack of local ownership.

Successfully, the pilot project able to scale up into another town called Adigrat and implemented a years after.

x. *Measure contribution not attribution*

An opportunity for ABA evaluations - to foster greater collaboration and more holistically-based approaches—is to shift from single-agency measuring attribute (correlating the activities of one project to community benefits), to multi-agency measuring of contribution (how a project may have helped as part of a wider effort) for determining if a programme’s success fits better the ABA ethos.

Evaluations of agency activities almost always seek to measure attribute, i.e. correlating the activities of one project to communities net benefits. ABAs however are intended to be cross-sectoral, holistic and oriented towards engaging in processes and people as discussed when dealing with multi-case study approach. To these ends, there is an opportunity to measure an initiative’s contribution to wider outcomes, not only those constrained by a particular project. This suits ABAs, since ‘the activities of an individual agency, and the effects of those activities, will not normally occur in isolation but rather as part of a multi-layered, complex response by both local and external actors (Few et al., 2014).

²⁴² That opens a new discussion window, in particular on responsive planning.

Discussion items

Nowadays area-based approach (ABA) is attracting humanitarian actors in shelter and settlement sector and discussed among the partners to respond for Urban IDPs. As evidenced by this study, ABA gave an insight on how each responses looks like in terms of participation of sectors and stockholders. The ABA in Mekelle provided a pioneer case that practiced innovate and alternative interventions in emergency shelter and settlement. In comparing to other emergency shelter (ES) programmes, ABA needs longer time and high engagement of stockholders for implementation, with defined target area rather than considering affected HH only. ABA as a pilot project has been implemented with great professional taking care and good lessons could learn for other projects specially for protracted displacement policies. Yet, as a pilot project, it has also some draw back on implementation and application of the ten ABA principles.

The project evaluation is based on project implementation process and ten ABA principles suggested by (Sanderson & Sitko, 2017). The implementation process, from inception to the close up, followed the project management cycle integrating technicality aspects of shelter and settlement. The three scenarios (namely expansion, renovation or rehabilitation of shelter) have further developed into kit-options and cash-based intervention (CBI). The intervention increases the intent to live in cohesion and facilitates the integration of IDPs with host families by proving of new livable space or reinforcement and enhancement of existing spaces. Furthermore, the provision of shelter enables host communities to absorb at least one family of IDPs. In the urban services it creates economic opportunities and enable access to services such as school reopening and reduce protection related risk.

The holistic approach implementation of the above mentioned ten principles is nevertheless less applied in the pilot project and less known by shelter experts. As a matter of fact, the project lacks to focus on multi-sectoral responses: rather, it only become an alternative response for shelter and settlement sector. It only focuses on a given target location implemented by a single humanitarian partner. The vulnerable IDPs are the center of the project. Though they live with in host families, the response gives both win-win solution as the temporary benefit is to the IDP, but in a long term it advantages also the host communities. The implementing partner IOM (as inter-governmental organization) had the opportunity to work with existing government structure, soliciting funds for scaling up similar projects.

As to evaluation, the project implementation process tries to address and respect all important humanitarian aspects for shelter issues (distribution and construction) and protection issues (HLP right and eviction). Cluster approach for shelter and other sector responses (which tends to limit the sectors in a sort of 'silo') requires to be expanded to multisector and multi-agency dimensions.

Unlike other emergency shelter (ES) responses, ABA needs to consider and investigate the complexity of urban responses. Within them, the engagement of municipalities and their planning tools (master and detail plans, building codes and alike) is crucial in the target area. ABA is considered as humanitarian emergency

response. Yet, in cases of protracted displacement, the project aims of transferring the provided support to host families (if IDP return happens) could link the project to recovery and development phases. Generally, ABA approach is not uniformly applicable as it changes according to the context and the individual household need. On that basis, we can say that there's not one model that will fit all contexts. A plausible way to coordinate complex settings is then to take the specific details about the particulate event (Knox Clarke P. & Campbell L., 2016).

Unlike IDPs in collective centers and camps, which predominantly use shelter as place making, IDPs in urban areas are rather in need of permanent settlement, livelihood, and job. IDPs than could benefit from the urban service delivery system, increasing integration, social cohesion and adopting smooth durable solutions.

2.5.2. Scaling Up the Area-Based (Neighborhood) Approach Project in Adigrat

The concept of 'scale' is employed across various scientific disciplines, each attributing slightly different meanings to it. Broadly, it refers to the spatial, temporal, quantitative, or analytical dimensions through which scientists observe, measure, and study phenomena, often conceptualized in terms of hierarchy (Gibson et al., 2000). In geography and spatial analysis, scale denotes the dimensional relationship between a cartographic representation and physical reality. In the context of this study, scale is understood as a biunivocal translation between two practices or contexts, serving as a conceptual tool to compare and analyze different settlement patterns as responses to emergencies.²⁴³

To operationalize the concept of scale in practice, projects often adopt strategies commonly referred to as 'scaling up'. Scaling up involves expanding the reach and impact of interventions to deliver benefits more widely, efficiently, equitably, and sustainably (IIRR, 2000). (Hartmann & Linn, 2008) define upscaling as "expanding, adapting, and sustaining successful policies, programs, or projects in different places and over time to reach a greater number of people." According to the scale-up taxonomy adopted by (Uvin & Miller, 1996) and (Korten, 1980) four primary types of scaling-up processes can be identified: qualitative, functional, political, and organizational.

²⁴³ Conversation with D Patassini (research tutor), Iuav University of Venice (February 2025).

Table 29: Scale-up categories and implementation routes (Source: author's compilation from literature, 2025)

Type of Scale-Up	Path/Method	Description / Example
Qualitative	Spread	Increasing numbers of people spontaneously adhere to the organization and its programs
	Replication	A successful program (methodology & mode of organization) is repeated elsewhere
	Nurture	A well-staffed, well-funded external agency uses incentives to support local initiatives on a larger scale
	Horizontal aggregation	Multiple organizations or programs combine resources or merge
	Integration	Program is integrated into existing structures, particularly government systems, after proving effective
Functional	Horizontal (sectoral) integration	Unrelated new activities are added to existing programs, or new programs are undertaken by the same organization
	Vertical (factoral) integration	Components related to the same operational chain are added
Political	Information & mobilization	Members or local communities are encouraged to participate politically
	Networking	Temporary collaboration between political organizations on shared issues
	Vertical aggregation	Federative structures are created to influence policymaking
	Direct entry into Politics	Grassroots organizations or leaders create/join political parties
Organizational	Diversify funding sources	Seek multiple funding channels to ensure stability
	Increase self-financing	Consultancy, sub-contracting, fee-based services, etc.
	Promote skill development	Train staff to improve capacity and expertise
	Organizational learning	Develop procedures/structures that allow learning and adaptation
	Create institutional variety	Diversify internal and external organizational structures
	Maintain participation & accountability	Ensure stakeholders stay involved and accountable

Cooley and Kohl (2006) propose a framework for scaling up innovations, distinguishing three primary organizational paths: expansion, replication, and spontaneous diffusion (Cooley & Kohl, 2006).

- Expansion refers to scaling up within the original organization, either by extending services to new locations or by increasing the number of beneficiaries served.

- Replication occurs when other organizations adopt and implement the original model or intervention in new contexts.
- Spontaneous diffusion describes the informal spread of ideas or practices without coordinated efforts, often through networks or word-of-mouth. These categories illustrate different strategies for broadening the reach and impact of interventions.

In the context of humanitarian responses, the terms *scale* or *scaling up* are used in a variety of ways, encompassing both development-oriented and post-crisis emergency interventions. This variability has contributed to a relatively limited body of literature that specifically addresses scaling up in humanitarian emergencies, which may differ in concept and methodology from development-focused approaches. Key contributions to this field include works by WHO & ExpandNet, Edwards and Hulme, and Uvin (Edwards & Hulme, 2002; Uvin, 1995; World Health Organization (WHO) & ExpandNet, 2010).

Additionally, the United Nations Development Programme (UNDP, 2013) provides guidance on scaling up development programmes, outlining three distinct scenarios for implementation, as illustrated in the accompanying figure.

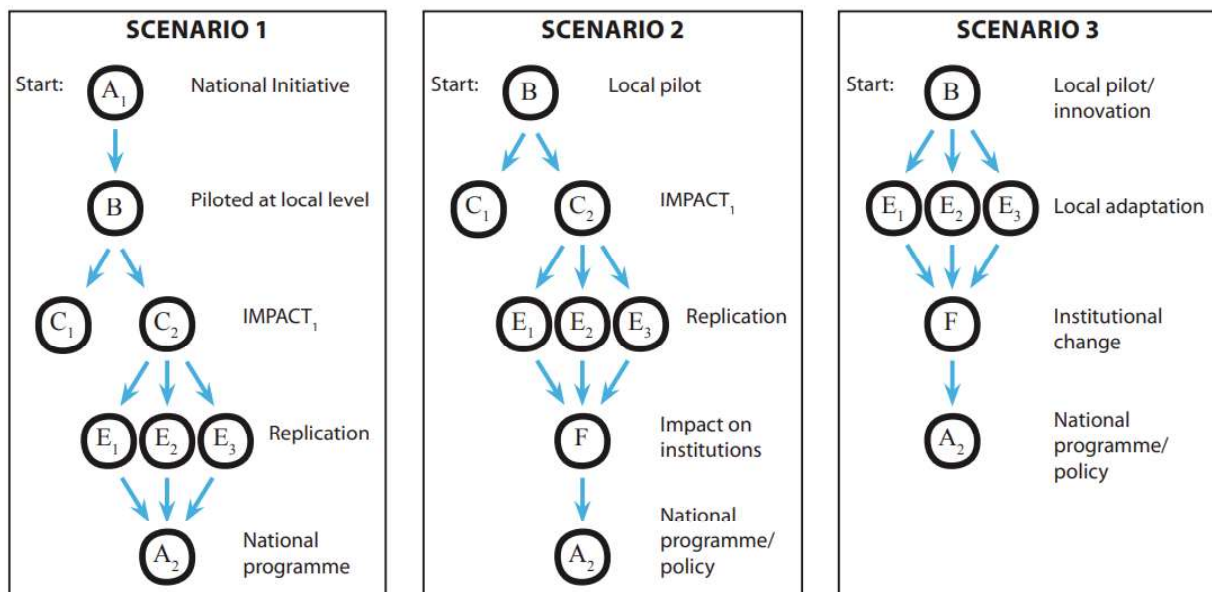


Figure 142: Scenario for scaling up (UNDP, 2013)

Literature reviews and previous studies indicate that there are multiple definitions, types, and phases associated with the concept of scaling up. Despite this diversity, most definitions share a central idea: scaling up represents a process of extending a pilot intervention to new projects or contexts through various

approaches.²⁴⁴ The table below provides a summary of the evolution of interpretations, meanings, and types of scaling-up processes.

Table 30: Literature review of definitions and types of scaling up

Sources	Definition and/or type of scale
Korten (1980)	scaling up process as three successive stages— effectiveness (developing a solution that works), efficiency (finding a way to deliver the solution at an affordable cost), and expansion (developing a way to provide a solution on a larger scale)
Berg (1987)	organizationally, management-wise, and financially
Clark (1991)	three types of scaling-up: project replication, building grassroots movements, and influencing policy reform. The first two are linked to expansion.
Hyden (1992)	differentiates between scaling-up organizationally and functionally or activity-wise.
Howes and Sattar (1992)	"intensification" refer to addition of new activities to existing programs.
USAID, 1992	scale-up as expansion of membership or target group
Fisher (1993)	scaling-up as a process of influencing policy and the term "scaling out" to describe expansion
IIRR (2000)	scaling up as effort to bring more quality benefits to more people over a wider geographic area more quickly, more equitably and more lastingly.
IIRR (2001)	scaling-up refers to vertical and horizontal interactions
Uvin 1995	four different types of scaling up process are differentiated- qualitative, functional, political and organizational
Consultative group on International Agricultural Research (CGIAR), 2000	scaling up refers to efforts to bring more quality benefits to more people over a wider geographic area more quickly, more equitably and more lastingly.
World Bank 2003	Scaling-up: efficiently increase socioeconomic impact from a small to a large scale of coverage.
Hartmann and Linn (2008)	Scaling up means expanding, adapting and sustaining successful projects, programs or policies in different places and over time to reach a greater number of people (originally proposed by the World Bank, but explicitly endorsed by the authors).

Following the war, approximately eight out of ten internally displaced persons (IDPs) are currently residing within host communities, the majority of them in urban areas. This context underscores the importance of scaling up neighborhood-based approaches that support shelter and settlement interventions, with the aim of fostering improved integration between displaced and host households.

The Neighborhood Approach (NA) project represents an innovative response targeting IDPs accommodated within host family homes. The intervention combines in-kind shelter construction kits with cash support for skilled labor. Its objectives include strengthening social cohesion between IDPs and host families, reducing protection risks, generating local economic opportunities, and restoring access to essential services—such as reopening schools previously occupied by displaced populations. More broadly,

²⁴⁴ Combinations of patterns, pathways and scenarios might draw a variety of scaling up practices (Conversation with D Patassini (research tutor), Iuav University of Venice - February 2025).

the project seeks to facilitate the integration of IDPs into host communities. In this context, host families traditionally accommodate displaced relatives or acquaintances without financial compensation, reflecting established socio-cultural practices of mutual support and shared living.

In 2022 and 2024, the IOM Ethiopia implemented both pilot and scaled-up Area-Based Approach (ABA) shelter and settlement projects in the Tigray region, specifically in Mekelle and Adigrat. This section presents a comparative analysis of these interventions, examining the transition from pilot to scale-up and identifying the associated types and pathways of scaling. The analysis evaluates project design, implementation processes, management arrangements, and performance outcomes, with particular attention to humanitarian shelter responses for urban IDPs living within host communities—an often underexplored population in displacement research.

Neighborhood approach (NA) project: Adigrat

The Neighborhood Approach (NA) project was initially implemented as a pilot intervention in Mekelle city by the IOM Ethiopia, with funding from the Ethiopian Humanitarian Fund (EHF). The pilot phase was completed within one year, concluding in 2022. Building on this experience, the project was subsequently scaled up in Adigrat town, implemented by the same organization but funded by the Bureau for Humanitarian Assistance (BHA/USAID, currently suspended), and completed within one year in 2024. Both the pilot and scaled-up interventions followed a structured project life cycle—comprising initiation, planning, implementation, monitoring, and closure—which is relatively less practice for emergency shelter projects implemented during periods of active conflict and immediate relief or early recovery.

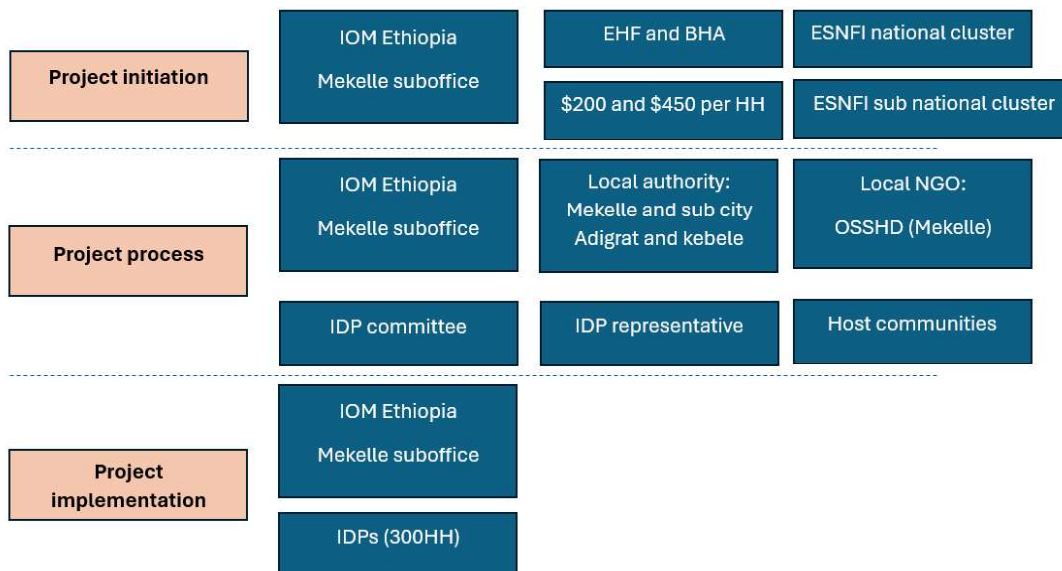


Figure 143: Project structure and implementation flow with stockholders mapping (illustration by: author, 2024)

Unlike conventional emergency shelter interventions, which are typically standardized and rapidly deployed in response mode, the NA project in Adigrat followed a more rigorous and context-sensitive approach. Its implementation included a comprehensive feasibility assessment, house-to-house verification and technical inspections, and systematic identification of needs, ultimately resulting in a tailored household-level shelter response.

The implementation process was characterized by the active engagement of multiple stakeholders, including local authorities—primarily the municipality and, in Adigrat, the then Bureau of Labour and Social Affairs—alongside host community members, IDP representatives, and a gender-balanced selection committee. The level of participation, committee composition, and local administrative structures varied between the city and town contexts. These stakeholders played a critical role in supporting the project through awareness-raising activities and by providing essential information to IDPs and host communities regarding the project’s objectives, response modalities, eligibility criteria, distribution of shelter kits, construction processes, and monitoring and supervision mechanisms.

Table 31: Basic information of comparative case study (Source: author, 2024)

Project Information	Mekelle (Pilot Project)	Adigrat (Scale-Up Project)
Project Title	Neighborhood Approach Piloting Project	Scale-Up of Neighborhood Approach Project
Location	Mekelle	Adigrat
GPS Coordinates	13°29'N, 39°28'E	14°16'N, 39°27'E
Country	Ethiopia	Ethiopia
Region	Tigray	Tigray
Zone	Mekelle Special Zone	Eastern Zone
Sub-city / Kebele	7 Sub-cities	6 Kebeles
Implementing Partner	IOM	IOM
Donor	EHF	BHA
Initial Budget	USD 60,000 (USD 200 per HH)	USD 135,000 (USD 450 per HH)
Number of Beneficiaries	300 Households	300 Households
Project Start Date	January 2022	January 2024
Project End Date	December 2022	December 2024
Target Population	Urban IDPs	Urban IDPs
IDPs' Place of Origin	Western Tigray	All zones except Western Tigray



Figure 144: Map of Mekelle and Adigrat in Tigray region, Ethiopia (Source: UNHCR via AP)

A comparative case study approach involves examining two or more cases to generate explanations or draw analytical generalizations. In this section, the cases were selected based on the innovative nature of the response: the pilot Neighborhood Approach project implemented in Mekelle and its subsequent scale-up in Adigrat. Although both projects targeted the same number of beneficiaries (300 IDP households), they differ in geographic and administrative context. Mekelle serves as the capital city of the Tigray Regional State, whereas Adigrat is a town and the administrative center of the Eastern Zone of Tigray.

The case study method explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time through detailed, in-depth data collection using multiple sources, reports and case themes (Creswell, 2014; Yin, 2018). The objective of the comparative analysis in this research is to identify similarities and differences in key variables, examine the relationships among them, and assess patterns of events and outcomes. Within the analytical framework adopted in this study, comparison focuses on project management processes and the core principles of the Area-Based Approach (ABA), including assessment and design, implementation and evaluation, and learning mechanisms.

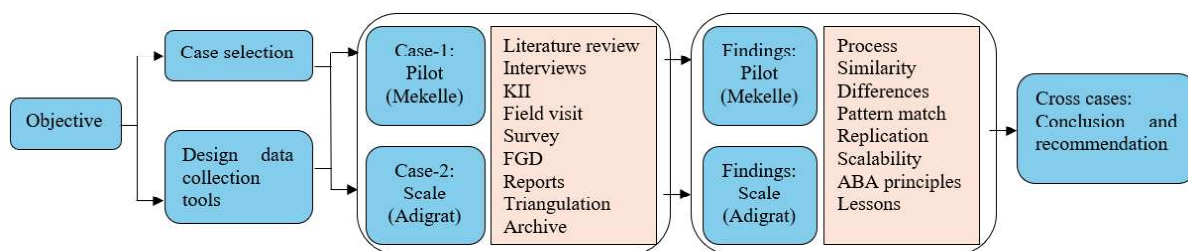


Figure 145: Analytical paths in comparative case studies (Source: author, 2024)

Cross-case analysis

During the emergency and post-war period, the need for alternative shelter and settlement solutions, such as the NA project, is immense in Tigray, as a significant portion of IDPs live within host communities. The transition from a pilot project to a scaled-up approach in various geographic areas by the same organization represents an expansion strategy (Cooley & Kohl, 2006). Each project supports 300 households (more than 2,700 individuals), consisting of urban IDPs and their paired host families.

The pilot project (Mekelle)

The pilot project was implemented across seven sub cities of Mekelle and targeted 300 IDPs, comprising over 1,500 individuals. Among the surveyed households, 175 were female-headed. Participants' ages ranged from 18 to 75 years, with an average of 47 years, and the average household size was five members. All households shared a dwelling with host families. In terms of housing characteristics, 76% of the floors were constructed of cement or concrete, 50% of the walls were made of stone, and 90% of the roofs were covered with CGI sheets.

Mekelle is administratively divided into seven sub cities: Adihaki, Ayder, Hadinet, Hawelti, Kedamay Weyane, Semen, and Quiha. These sub cities contain a total of 33 kebeles (the smallest administrative unit in a town, below sub-city or woreda level). According to Key Informant Interviews (KII), the 300 beneficiary households were proportionally distributed across the seven sub cities and kebeles based on the number of IDPs, in consultation with local authorities. Ayder sub-city hosts the largest number of IDPs, followed by Adihaki and Quiha, accounting for 20% of the total beneficiaries due to its high IDP population and large geographic area. All respondents (100%) indicated that the most durable solution for prolonged displacement is to return to their places of origin and initiate recovery efforts, despite the fact that 40% of the region remains inaccessible. The sex disaggregation in households and individuals is shown in the table below.

Table 31: Gender-Disaggregated HH and individual (the pilot project Mekelle)

Indicators	Male	Female	Total
Households (HH) head	125	175	300
Individuals/total family size	718	805	1523

The shelter response strategies included both in-kind kits and cash assistance. The in-kind kits comprised corrugated galvanized iron (CGI) sheets, cement, poles, nails for structural and roofing purposes, as well as locking systems and hinges for doors and windows. Cash support for labor was determined based on each household's (HH) Bill of Quantities (BoQ) but was structured around three response scenarios.

According to the survey of 300 households, 25% required the construction of an additional shelter within the host family's dwelling, 45% already had shelter within the host family's home but needed renovations such as replacing roofs, doors, or windows, and the remaining 30% shared a house with host families but required rehabilitation of worn-out components. These three scenarios were designed based on a house-to-house survey and tailored into kits according to the available space on the host family's plot and the building materials available. Post-Distribution Monitoring (PDM) conducted in September 2022, one month after the distribution of shelter kits, sampled 20% of households and found that 40% had completed the shelter construction. However, no further monitoring was conducted to assess the outcomes for the entire population.

The pilot project's implementation and design were innovative and demonstrated potential for scaling up. Project documents—including working manuals, Standard Operating Procedures (SOPs), distribution reports, final project reports, and lessons learned sessions—alongside presentations by the implementing partner, provided a foundation for broader replication and scaling of the initiative.

The scaleup project (Adigrat)

Similar to other towns in Tigray, most IDPs in Adigrat town were accommodated in collective centers, including primary and secondary schools, within host communities across six kebeles, and in a planned camp known as the Ex-UNMEE (United Nations Mission in Ethiopia and Eritrea) camp. Following the 2022 pilot project in Mekelle, the IOM conducted the first scale-up of the ABA project in Adigrat, located approximately 120 km north of Mekelle. The scale-up began with a feasibility study and followed the same project management framework used in the pilot project.

The project targeted 300 IDP households, totaling around 1,200 individuals, all of whom were living with host families. Survey participants ranged in age from 18 to 100 years, with an average age of 59, and the average household size was four members. A house-to-house survey was conducted to assess housing typology, plot sizes, and required shelter interventions. About 70% of the IDPs were residing in host family homes, with plot sizes ranging from 175 to 250 square meters. The houses were predominantly constructed with stone walls, concrete floors, and corrugated galvanized iron (CGI) roofs. As in the pilot project, all respondents (100%) indicated that the most durable solution for prolonged displacement was to return to their places of origin and initiate recovery efforts. The sex disaggregation of households and individuals is shown in the table below.

Table 32: Gender-Disaggregated HH and individual (the scaleup project Adigrat)

Indicators	Male	Female	Total
Households head	161	139	300
Individuals/total family size	590	610	1200

Adigrat is divided into six *kebele*. The allocation of the 300 households (HH) was based on the number of IDPs and the size of each *kebele*. *Kebele* 04 received 30% of the beneficiaries, the highest allocation, followed by *kebele* 05. Adigrat's local authorities, the IDPs' representative committee, and the selection committee were actively involved in implementing the project from the outset.

Both the pilot and scale-up projects used similar response types/methods, which included in-kind assistance and cash support. The in-kind shelter kits contained CGI (corrugated galvanized iron), cement, nails (for structural and roofing purposes), hinges (for doors and windows), and locking systems (for doors and windows). Cash support for labor was determined based on the individual household's Bill of Quantities (BoQ). Unlike the pilot project, the scale-up project included an additional sector focused on WASH (water, sanitation, and hygiene), with components such as dignity kits and latrine slab cover. Tailored responses were provided for each household to ensure that the interventions were unique and context-specific, in contrast to the pilot project, which primarily focused on three scenarios: expansion, renovation, and rehabilitation.

Commonalities and Variations

The scale-up project in Adigrat built on lessons from the Mekelle pilot, including multisector approaches (shelter, settlement, WASH) and household-tailored responses, though challenges remained in beneficiary selection, given the wide geographic spread of IDPs. Scaling up was multidimensional, involving qualitative, functional, political, and organizational pathways, with strategies such as expansion, replication, and horizontal integration facilitating implementation. Both projects applied ABA principles, leveraged sociocultural family ties, and used vernacular building methods while adhering to local regulations (Sanderson & Sitko, 2017). The study provides practical insights for humanitarian partners and policymakers, highlighting structured scale-up processes and key similarities and differences between pilot and scale-up projects. While limited to two cases, the findings offer valuable lessons for urban post-crisis shelter and settlement responses, with potential for broader application in future research.

Comparative analysis examines the similarities found in different situations or cases that share common elements, while also highlighting the differences between them.

Table 33: Shared characteristics among cases (Source: author, 2024)

Aspect	Details
Project Objective	To provide alternative emergency shelter and settlement solutions for IDPs hosted by, or sharing accommodation with, host communities in urban areas.
Target Population	Urban IDPs living with host families or within host communities.
Implementation Tools	Feasibility study, project plan and schedule, intention surveys, meetings, official correspondence, notices, formats and templates, and scenario/kit development. In the scale-up project, Google Maps was additionally used to georeference each household, facilitating monitoring and supervision.
Project Structure	Stakeholders included the implementing partner, donor, ESNFI cluster (national and subnational), IDPs (beneficiaries, representative committee, and selection committee), local authorities (municipality, sub-city, and kebele), and host communities. In the pilot phase, the local NGO OSSHD supported grassroots awareness creation and sensitization on the project's scope and response types.
Shelter Response Type / Methodology	In-kind shelter kits and cash-based interventions (CBI) for skilled labor.
Project Management Process	Key milestones included: <ul style="list-style-type: none"> • Engagement with local authorities, IDPs, and host communities • Intention and housing typology surveys • Design of household-specific response typologies • Housing, Land, and Property (HLP) verification, beneficiary sensitization, and grouping • Distribution of kits and cash • Post-distribution monitoring (PDM) • Shelter construction • Supervision and monitoring
Challenges	Operational delays due to procurement issues, inflation of construction materials, and inconsistent support from local authorities.

Table 34: Divergent characteristics across cases (Source: author, 2024)

ABA Principles & Project Management Process	Pilot Project – Mekelle	Scale-Up Project – Adigrat
Multi-agency and Multi-sector Participation	One main partner (IOM), one local partner (OSSHD), single sector (shelter and settlement)	One partner (IOM), multi-sector (shelter, settlement, and WASH)
Focus on Location	Area-based/neighborhood response rather than individual IDPs	Area-based/neighborhood response rather than individual IDPs
Nature and Type of Responses	Cluster-based scenarios for new shelter construction, renovation, and rehabilitation	Tailored, household-specific responses including new construction, renovation, and rehabilitation

In-kind Shelter Response	Based on three predefined scenarios	Based on individual household Bill of Quantities (BoQ)
Cash Response	Unconditional, one-time cash for skilled labor	Two-phase cash support: (i) unconditional cash transfers, (ii) conditional cash transfers linked to shelter construction performance
Use of Local Building Materials	Stone and hollow concrete blocks (HCB)	Stone, hollow concrete blocks (HCB), and mud blocks
Settlement Type	IDPs in planned settlements with host families and community plots	IDPs in both planned and informal settlements in urban and peri-urban areas
Impact of IDP Returnee Exercises	No returnee exercises conducted during the 2022 blockade and siege	Two rounds of returnee exercises conducted by partners and the government, affecting the project
Inclusion and Exclusion Criteria	Only IDPs from inaccessible areas, primarily West Tigray	No strict inclusion/exclusion criteria
Selection and Targeting of Beneficiaries	Focus on vulnerable IDPs	Includes IDPs from both accessible and inaccessible areas, including vulnerable populations



Figure 146: Mud block shelter constructed by an IDP on a host family's plot in Adigrat (Source: author, 2024)



Figure 147: CGI shelter constructed by an IDP household on a host family's plot in Mekelle (Source: author, 2022)

Chapter Three: Post-war housing reconstruction

This section focuses on post-war housing reconstruction effort, guided by assessments of damage, losses, and needs, and coordinated through the combined efforts of local governments, humanitarian organizations, and communities, using the available resources and logistical capacities.

3.1. War-induced housing damage, loss, and humanitarian needs

Principle 2: All refugee and displaced persons have the right to have restored to them any housing, land or property (HLP) of which they were arbitrarily or unlawfully deprived.²⁴⁵

The Pinheiro Principles

The Tigray region, and Ethiopia more broadly, remains one of the least urbanized areas in Sub-Saharan Africa. Currently, approximately 27% of Tigray's population resides in urban areas, with an annual urbanization rate estimated between 4% and 5%. However, urban growth in the region has largely occurred in the absence of formal planning, leading to the widespread development of informal settlements. Prior to the outbreak of war in November 2020, the provision of public infrastructure and basic services was already insufficient to meet the demands of the growing population of the region.

Housing patterns differ between rural and urban areas. In rural communities, vernacular *hidmo* housing typologies remain predominant, while urban housing is generally constructed using conventional building materials. Despite this distinction, urban areas face a considerable housing deficit, although precise and reliable data on the scale of the shortage are limited. The pressure on the existing housing stock is particularly pronounced in major urban centers such as Mekelle, Shire, and other zonal towns.

The housing sector was among the most severely affected social sectors during the war. Yet, housing recovery and reconstruction constitute a cornerstone of broader post-conflict recovery efforts, as the restoration of livelihoods is extremely difficult without first ensuring adequate shelter.²⁴⁶ Both rural and urban housing stock suffered extensive damage as a result of bombardment, shelling, drone attacks, and deliberate burning (arson). Consequently, there is substantial demand for housing among war-affected

²⁴⁵ The Pinheiro Principles are a set of international guidelines that outline the rights of refugees and internally displaced persons (IDPs) to housing, land, and property (HLP) restitution after displacement.

²⁴⁶ Post-war housing need involve the provision of emergency shelters, basic core units, and scalable progressive shelters to accommodate varying stages of resettlement and reconstruction.

communities, including returnees and IDPs, although the nature and scale of shelter needs vary significantly across these groups.

Similar to other social sectors—such as education, health, and social services—the housing sector sustained extensive destruction and damage during the conflict. This situation underscores the urgent need for comprehensive shelter and reconstruction interventions as a central component of the broader recovery process, while also highlighting the increased housing demand driven by large-scale population displacement.

“... As a result of the conflict, many houses, shops, and private stores were burned or damaged.” Schools, health centers, shops and other buildings were looted.²⁴⁷ A report by The Associated Press (AP) January 9, 2021.

In December 2022, the Government of Ethiopia, with the support of the World Bank and other development partners, released a Damage and Needs Assessment (DaNA)²⁴⁸ covering the period from the onset of the Tigray war in November 2020 to December 2021. The assessment followed an international standard methodology developed jointly by the European Union, the World Bank Group, and the United Nations. Its objective was to provide a comprehensive inventory of the damages, economic losses, and the recovery and reconstruction needs resulting from the war in the Tigray region. In addition, the findings of the DaNA serve as a critical input for informing the broader recovery and reconstruction planning process.

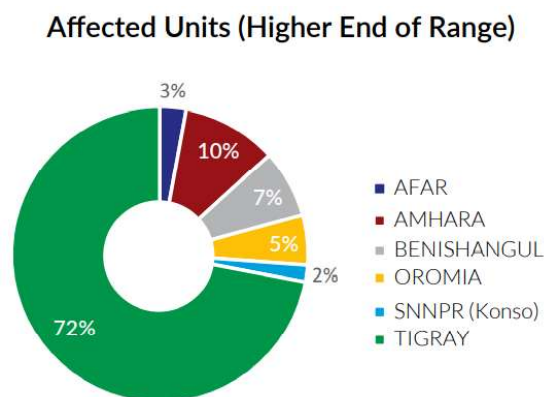


Figure 148: Maximum estimated number of housing units impacted (both damaged and destroyed) in Ethiopia

²⁴⁷ https://apnews.com/article/abiy-ahmed-africa-ethiopia-united-nations-kenya-a2894a53c2b85cda6a86cdd2d6c64f11?utm_source

²⁴⁸ The Ethiopia Damage and Needs Assessment - Volume A – December 2022 report was prepared by the Government of Ethiopia with technical assistance from the World Bank and development partners. The DaNA aims to (i) provide a broad-brush estimate of the effect of the ongoing war on the social, infrastructure, and productive sectors as well as cross-cutting sectors (such as environment, disaster risk management, governance, gender) and the macroeconomic and poverty impacts, and (ii) to inform the formulation of a resilient recovery framework, including the design of appropriate implementation arrangements and institutional framework, a resource mobilization strategy, and financial mechanisms to manage and fund the recovery. However, the assessment is limited to the time frame between November 2020 to December 31, 2021. Security and inaccessibility was another challenge during the data assessment. DaNA data till the November 2022 has found in fragmented way from different humanitarian organizations as well as clusters coordination offices.

The assessment revealed the severe impact of the conflict on Tigray’s housing sector. According to the DaNA (2022), the region recorded the highest number of destroyed housing units in the country, as well as the largest proportion of total affected housing units—including both damaged and destroyed structures—accounting for 72 percent of the national total. The region also reported the highest share of damaged units alone (54 percent) and destroyed units alone (80 percent) compared to other regions, highlighting the urgent need for targeted shelter and reconstruction interventions.

Based on an estimated average of 223,321 housing units that were damaged or destroyed in the Tigray region, the total cost of the destruction is approximately USD 1,849.72 million, calculated using an exchange rate of 1 USD to 49.19 Ethiopian Birr (ETB). This assessment reflects damage up to December 2021, with additional losses continuing until the onset of the peace agreement in early November 2022 (World Bank, 2022).

Table 35: War-induced damage per units in Tigray, Ethiopia (World Bank, 2022)

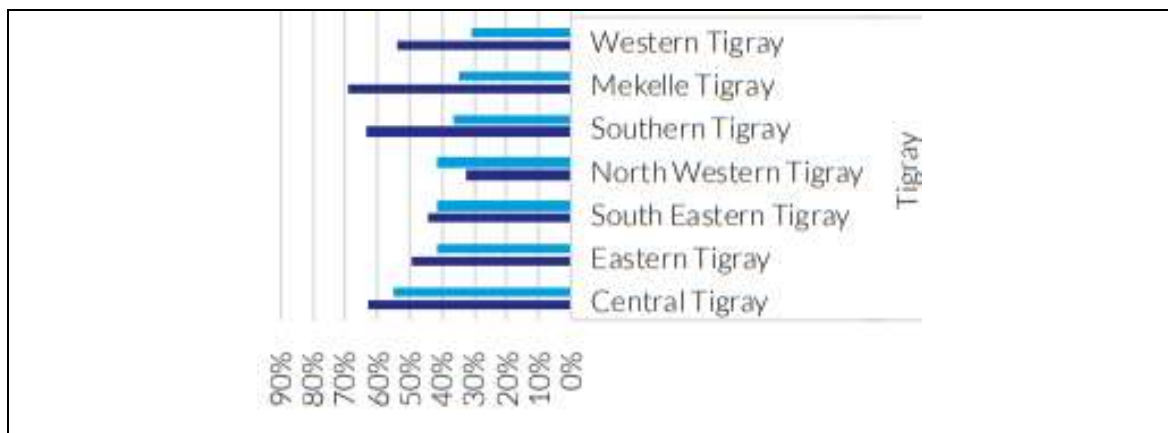
Region	Minimum estimate (no. of units)			Maximum estimate (no. of units)			Average estimate (no. of units)		
	Damaged units	Destroyed units	Affected units	Damaged units	Destroyed units	Affected units	Damaged units	Destroyed units	Affected units
Afar	1,457	3,447	4,904	4,828	11,422	16,249	3,142	7,435	10,577
Amhara	40,930	17,807	58,737	40,930	17,807	58,737	40,930	17,807	58,737
Benishangul-Gumuz	21,116	21,116	42,232	21,116	21,116	42,232	21,116	21,116	42,232
Oromia	5,615	12,735	18,350	9,439	21,409	30,848	7,527	17,072	24,599
SNNPR (Konso)	398	9,991	10,389	398	9,991	10,389	398	9,991	10,389
Tigray	8,528	30,502	39,030	89,060	318,552	407,613	48,794	174,527	223,321
Total	78,044	95,599	173,642	165,771	400,297	566,068	121,907	247,948	369,855
% of total	45	55	100	29	71	100	33	67	100

Table 36: Damage in cost in Tigray, Ethiopia (World Bank, 2022)

Region	Affected units (number of units)			Damage Costs (US\$, millions)		
	Damaged units	Destroyed units	Total units	Damage Costs (US\$, millions)	Destroyed costs (US\$, millions)	Total Costs (US\$, millions)
Afar	3,142	7,435	10,577	11.98	53.63	65.61
Amhara	40,930	17,807	58,737	177.26	140.11	317.37
Benishangul-Gumuz	21,116	21,116	42,232	42.96	79.05	122.00
Oromia	7,527	17,072	24,599	22.27	146.79	169.05
SNNPR (Konso)	398	9,991	10,389	1.82	29.64	31.46
Tigray	48,794	174,527	223,321	236.72	1,613.00	1,849.72
Total	121,907	247,948	369,855	493.00	2062.21	2,555.21

According to IOM’s Displacement Tracking Matrix (DTM)²⁴⁹, approximately 1.0 million houses in Tigray have been affected to varying degrees of damage. In contrast, the Damage and Needs Assessment (DaNA) of the FDRE, which covers the period up to December 31, 2021, estimated about 0.4 million houses as damaged or destroyed, with nearly 78 percent completely destroyed beyond repair. The region’s housing stock is largely composed of traditional vernacular dwellings called Hidmo, featuring thick stone walls and flat mud roofs. Urban and semi-urban areas also include detached houses, *Tukul* houses, villas, and a small number of low-rise residential buildings. Damage has occurred across all zones, with traditional houses accounting for the majority of affected structures. Comprehensive estimates of total economic losses²⁵⁰ in the housing sector are currently unavailable, leaving the full economic impact unquantified.

These significant housing damage translate into substantial economic losses for households across Tigray, though the magnitude varies by zone. At the onset of the conflict, households near Mekelle experienced the greatest losses nearly to 70 percent of their pre-2020 income in 2020, compared with an estimate of about 33 percent of income lost by households in North Western Tigray in that period. Though income losses remained high in region’s zones in 2021 more broadly—ranging from 30 percent in Western Tigray to 55 percent in Central Tigray. The prolonged blockade, siege, and embargo imposed during the two-year conflict further exacerbated these hardships, highlighting the combined effect of physical destruction and economic disruption on households.



²⁴⁹ The Displacement Tracking Matrix (DTM), developed by the IOM, is a system designed to monitor displacement and population mobility in contexts of crisis. It gathers and analyzes data to provide timely information on the movement, location, demographics, and needs of displaced populations. In the context of the Tigray conflict, the DTM has been instrumental in estimating the scale of housing damage and displacement, informing humanitarian planning and response efforts.

²⁵⁰ Data to determine economic losses were unavailable. Discussions with the regional authorities reveal, however, that there have been losses related to jobs, rental income, and transfer taxes because of the conflict.

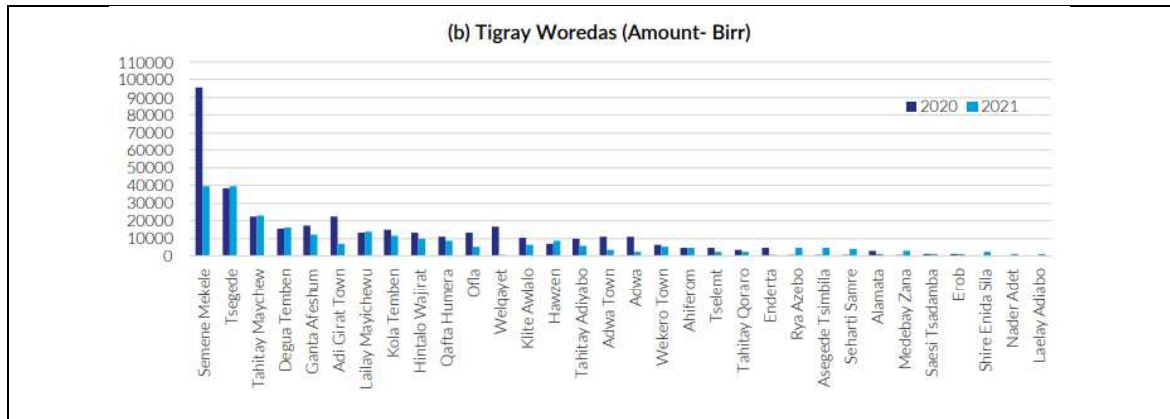


Figure 149: Estimated Household Income Losses in Tigray (% of Pre-2020 Income), by Zone and Woreda (World Bank, 2022)

Recovery and reconstruction needs (Need)

War recovery and reconstruction need includes investment for repairs to damaged housing units and reconstruction of destroyed housing units. The total recovery cost includes 19 percent which related to repair of damaged units and 81 percent for the reconstruction of new units in line with the build back better (BBB)²⁵¹ principles. As for the time frame for interventions, it is recommended that support for 50 percent of repairs is made available immediately (months 0–5) and the remaining 50 percent is made available over months 6–24. With respect to rebuilding costs, the government can consider self-construction schemes (assumed to make up 30 percent of total costs), prioritizing these in months 6–24, mixed with other government and private sector-led construction (assumed to make up 70 percent of total costs) in years 3–5 (Government of Ethiopia, 2022).

The estimated recovery and reconstruction needs, based on identified investment requirements, amount to USD 1,759.60 million. This figure is slightly lower than the total estimated cost of damage and destruction, which stands at USD 1,849.72 million.

²⁵¹ Build Back Better (BBB) refers to the use of the recovery, rehabilitation, and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction (DRR) measures into the restoration of physical infrastructure, social systems, and livelihoods (United Nations Office for Disaster Risk Reduction, 2015).

Investment needs (based on average unit cost for housing) (US\$, millions)				
Afar	6.79	27.66	48.69	83.15
Amhara	94.77	140.76	107.30	342.83
Benishangul-Gumuz	22.40	76.88	127.12	226.39
Oromia	12.01	56.06	102.77	170.85
SNNPR (Konso)	0.98	26.76	60.15	87.88
Tigray	125.36	578.02	1,056.22	1,759.60
Subtotal	262.32	906.14	1,502.25	2,670.70
Total	263.44	906.15	1,502.25	2,671.84

Figure 150: Estimated Costs (US\$) of Total Needs for Housing Sector, by Recovery Phase and Region (World Bank, 2022)

Addressing housing recovery and reconstruction in post-war Tigray requires an area-based, multi-sectoral, participatory, and inclusive approach. Currently, housing reconstruction efforts—primarily led by NGOs with support and engagement from government authorities—are underway in various parts of the region. Priority is given to meeting the immediate housing needs of rural war affected communities, IDPs and returnees, guided by the core house provision principles of post-war recovery and reconstruction. These efforts are focused in secure and accessible areas of Tigray. Reconstruction programs consider various levels of housing damage, including partial, severe, and complete destruction.

One of the main approaches adopted is self-construction schemes, wherein beneficiaries are provided with financial assistance and/or construction materials (in-kind and cash support) and take responsibility for managing the reconstruction process—either by hiring labor or through their own efforts. In such programs, governments and humanitarian partners typically establish minimum construction standards to ensure quality, safety, and resilience in the rebuilt structures.

Box 4: Key DaNA terms

Damage: Total or partial destruction of physical assets existing in the affected area. Damage incurred as a result of the conflict and is measured in physical units (e.g., square meters of housing, kilometers of roads, etc.). In addition to infrastructure/ buildings, the assets/contents from within those buildings and infrastructures, such as furnishings and equipment, farm machinery and tools etc., should be quantified. Looted items are also included under damages.

Losses: Temporary changes in the economic flows arising from the conflict. Losses occur from the start of the conflict until economic recovery and reconstruction have been achieved, often lasting over many years. Typical losses include the temporary decline in output and higher production costs in the productive sectors of agriculture, livestock, fishery, industry, trade and tourism; lower revenues and higher cost of operation in services (education, health, electricity, water supply and sanitation, transport,

and communications), and the expenditures for humanitarian assistance. Losses are expressed in current monetary values.

Reconstruction and Recovery Needs: Reconstruction and recovery needs refer to the actions and financing required to restore the conflict affected areas to prewar levels, including reconstruction of damaged assets, restoration of services as well as actions to support residents in affected areas, catalyze the economy, build livelihoods, and strengthen public administration and governance.

Building back better (BBB): Relates to measures that the government decides should be integrated into rehabilitation and reconstruction of damaged assets, including improved functionality, energy efficiency, universal access, disaster and climate resilience, and critical modernization measures, including right-sizing and right-siting of infrastructure and services. This costing is added in the needs calculation, and each sector uses appropriate standards and costing assumptions such as additional cost to improve standards (for example, energy efficiency), surge pricing, higher insurance/security costs, and what the current status is.

To assess the extent of damage to housing and estimate associated losses and needs, it is essential first to understand the types of housing units that existed prior to the conflict. A comprehensive understanding of pre-war housing typologies—including their construction materials, structural characteristics, and occupancy patterns—provides a baseline against which the scale of destruction, displacement, and reconstruction requirements can be evaluated. Such analysis is critical for designing effective post-conflict recovery strategies and targeting interventions that address both immediate shelter needs and long-term housing solutions.

Types of housing unit (before the war)

- **Hidmo House (Traditional House):** A predominant housing type across rural villages in Tigray, found throughout all zones and exhibiting a variety of typological variations.
- **CIS House (Corrugated Iron Sheet House):** A type of shelter constructed primarily from corrugated iron sheets, commonly used in different settings.
- **HCB House (Hollow Concrete Block House):** A permanent housing type constructed using hollow concrete blocks, commonly found in urban and peri-urban areas. These houses offer greater durability and structural stability compared to traditional or temporary shelters.
- **Apartment:** A multi-unit residential building that accommodates several households within separate units. Apartments are typically found in urban areas and provide more formal, permanent housing compared to single-family or traditional dwellings.

- *Tukul* House: A traditional round or circular dwelling, typically with a thatched roof and constructed using locally available materials such as mud, wood, and straw. Tukul houses are common in rural areas and reflect indigenous building practices adapted to local climate and cultural norms.
- Mud House (Very Rare): A dwelling constructed primarily from mud or earth, often reinforced with natural materials such as straw or wood. This housing type is uncommon in the region and represents one of the more traditional and less durable forms of shelter.

Type of damage:

Before undertaking post-war reconstruction, it is crucial to establish the context and categorize the types of damage sustained and the cases. Understanding these damage types is fundamental for designing and implementing effective recovery and reconstruction strategies. In Tigray, housing damage caused by the war includes intentional destruction, looting and vandalism, as well as collateral damage.

Damage resulting from armed conflict can be broadly categorized into three types:

- Direct damage: includes an immediate physical destruction of an assets and infrastructure caused by war-related activities such bombardment, shelling, drone attacks, looting, or arson. this includes destruction of houses.
- Indirect damage: this involves the consequences effects that result from the disruption of services and infrastructure.
- Indirect remote losses: this is a spillover effects or loss experienced in areas not directly affected by conflict but impacted economic, social or services linkages.

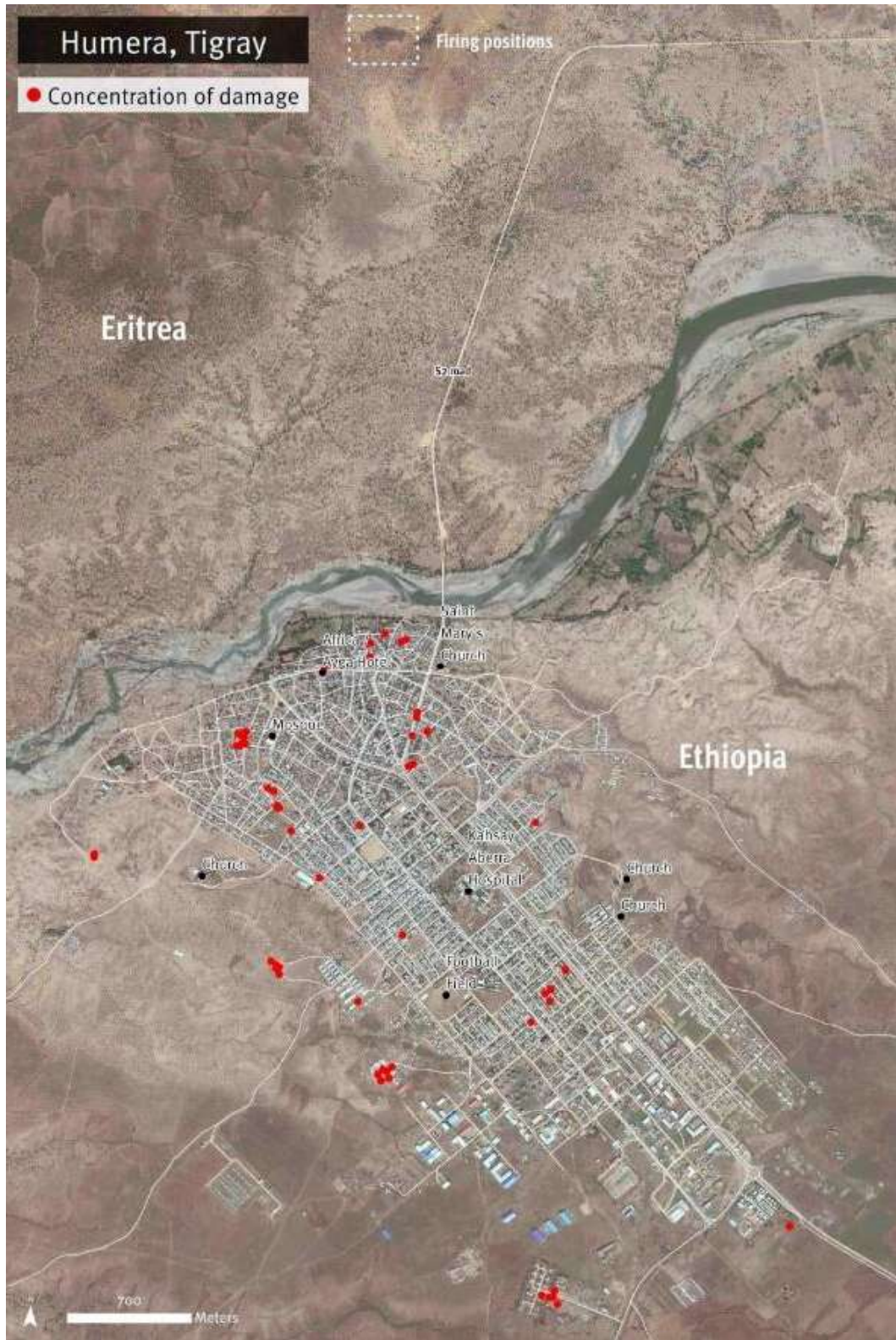


Figure 151: Buildings damaged in humera town, Tigray, Ethiopia (Damage analysis by Human Rights Watch)



Figure 152: Location of attacks striking on or near civilian structures documented by Human Rights Watch in Shire, Tigray region, Ethiopia. 2021



Figure 153: Damaged to wall of condominium building in Shire, Tigray, 2020²⁵²

²⁵² The above three photo sourced from Human Rights Watch, “Ethiopia: Unlawful Shelling of Tigray Urban Areas.”

3.2. Housing reconstruction

Between 2020 and 2022, the Tigray region experienced extensive destruction of housing—particularly in rural areas—due to the armed conflict. One of the core mandates of the Ethiopian Disaster Risk Management Commission (EDRMC) is to assess the situation, identify appropriate response mechanisms, and mobilize resources and assistance accordingly. The EDRMC operates in close coordination with humanitarian partners and local government authorities to ensure effective response efforts, both in sudden-onset emergencies and in protracted crises. At the regional level, the Tigray Disaster Risk Management Commission (TDRMC) plays a key role in coordinating recovery initiatives, including those focused on housing reconstruction and rehabilitation.

Post-war housing and shelter reconstruction programs in Tigray follow a top-down, hierarchical structure, cascading from the national to the local level. The National Shelter Cluster, in coordination with UN humanitarian partners, is primarily responsible for developing program strategies, projects, and prioritizing response locations. Non-Governmental Organizations (NGOs) play a key role in translating these strategies into detailed implementation plans. They work in active partnership with the Tigray/Regional Disaster Risk Management Commission (DRMC), Civil Society Organizations (CSOs), and affected communities throughout the implementation phase.

Five years after the outbreak of the war, both the central and local governments still lack a clear and comprehensive plan for post-war housing reconstruction in Tigray. No dedicated policy framework or special attention provided to address the scale of housing needs in the region. To date, there are no official figures available on the number of houses reconstructed or repaired at regional level. In practice, humanitarian shelter partners remain the primary actors engaged in housing reconstruction efforts, particularly in the rural areas of Tigray, where needs are most acute.

Greater attention from government bodies has been directed toward the rebuilding and reconstruction of essential public services, such as health, education and WASH facilities, rather than housing. These interventions are primarily implemented by UNOPS with funding from the World Bank, as part of the Responses-Recovery-Resilience for Conflict-Affected Communities in Ethiopia (3R4CACE) program.²⁵³ The initiative aims to restore basic service delivery in conflict-affected areas, with a focus on institutional infrastructure, while housing reconstruction remains under-prioritized in government-led recovery strategies.

<https://www.hrw.org/news/2021/02/11/ethiopia-unlawful-shelling-tigray-urban-areas>

²⁵³ The Response, Recovery, Resilience for Conflict-Affected Communities in Ethiopia (3R4CACE) is a government-led initiative funded by the World Bank, aimed at restoring essential services and building resilience in areas affected by conflict, particularly in regions like Tigray. The program is implemented through various UN agencies, with UNOPS focusing on the rehabilitation of infrastructure—such as schools, health centers, and water and sanitation facilities—while UNFPA leads interventions related to gender-based violence (GBV) prevention and survivor support. At regional level the TRRP implemented 2022-2027.

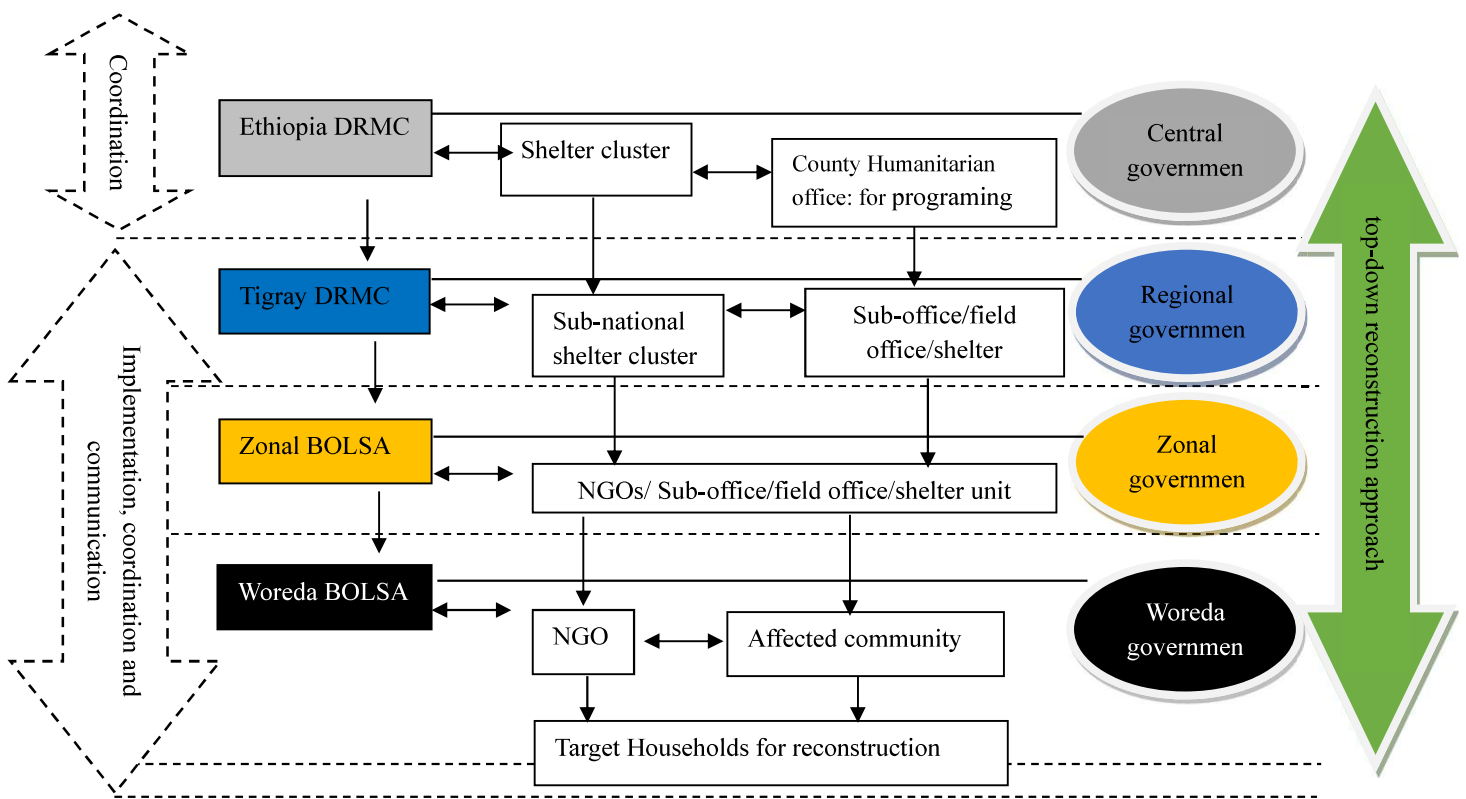


Figure 154: Post-war housing reconstruction: management and institutional framework in Tigray (Source: author,2024)

3.3. Housing reconstruction programs: three approaches

Shelter repair kits (SRK) interventions

Humanitarian shelter agencies provide shelter and housing reconstruction programs using various approaches. One of the widely used programs in post-war recovery contexts is the provision of SRK. In Tigray, efforts to reconstruct war-damaged houses is supported and led by non-governmental organizations (NGOs) through the implementation of SRK-based reconstruction programs.

SRKs are intended for emergency repairs rather than full-scale reconstruction and do not substitute for property compensation or legal restitution. Their primary purpose is to enable the repair of the core structure of war-damaged housing, thereby providing safe, secure, and dignified shelter for returnees and other war-affected households, protecting them from weather elements and preventing further deterioration of dwellings. According to the *Ethiopia ES/NFI cluster National Guidelines for shelter repair in return context (Version-5)*, proper targeting and verification process for SRK support prioritize both returnees and non-displaced households. The SRK response promotes a community-driven approach and uses assistance modalities that are climate-appropriate and environmentally responsible (Ethiopia ES/NFI, 2025).

Table 37: Shelter reconstruction based on community-driven, climate-appropriate, and environmentally responsible (Ethiopia ES/NFI, 2025)

<p>Community Participation & Engagement Strong community engagement is key to effective shelter response.</p> <ul style="list-style-type: none"> • Involve affected populations at all stages to build trust. • Work through local structures (e.g. community leaders, women’s groups, religious leaders). • Coordinate with authorities to align efforts and avoid duplication. • Ensure inclusive consultations (women, persons with disabilities, marginalized groups). • Use local skills and knowledge to support ownership and sustainability. 	<p>Modality of Assistance: Cash or In-Kind Choosing the right assistance method depends on context, market conditions, and safety.</p> <ul style="list-style-type: none"> • Use cash where local markets are functional and accessible. • Use in-kind where markets are weak or security is a concern. • Conduct market assessments and monitor prices. • Use phased disbursement to ensure proper use and progress. • Consider vouchers or vendor agreements to control quality and reduce misuse.
<p>Grouping households improves cooperation, resource sharing, and monitoring in conflict-affected areas.</p> <ul style="list-style-type: none"> • Form groups of 5–10 households based on proximity and needs. • Encourage shared use of tools, materials, and labor for efficiency. • Support vulnerable members within each group. • Set basic group conditions (e.g., complete Phase One before Phase Two). 	<p>Use of Local Materials and Labor Using local, climate-appropriate materials and labor makes shelter repair more sustainable and cost-effective.</p> <ul style="list-style-type: none"> • Use traditional, locally available materials (e.g., mud, stone, treated eucalyptus). • Source materials responsibly to protect the environment. • Employ local labor to boost the economy and share skills. • Promote community support for vulnerable households lacking repair capacity.

Based on the Ethiopia ES/NFI cluster National Guidelines for shelter repair in return context (Version-5)

SRK deliver responses for damaged house as a result of the war. In SRK projects, shelter damage assessment and verification are key milestone steps that guide the type of responses provided. SRK offers support for houses classified as fully damaged, partially damaged and minor damaged. According to the Ethiopian ES/NFI cluster, SRK responses are guided by specific damage characterization and prioritization, with verification and assessment conducted uniformly in line with cluster standards.

A. Minor damages – minor damages on the roof or walls due to artillery shell fragments or similar causes damaging a small portion of the wall or roof.

B. Partially damages - are shelters or home with safe structure but with incomplete or partially missing roofs and/or walls that compromises safety, dignity, or habitability. It includes minor to moderate damage;

the main structure is safe - the home is repairable without demolition and reconstruction. May also apply to homes that have undergone repair already, but with insufficient materials.

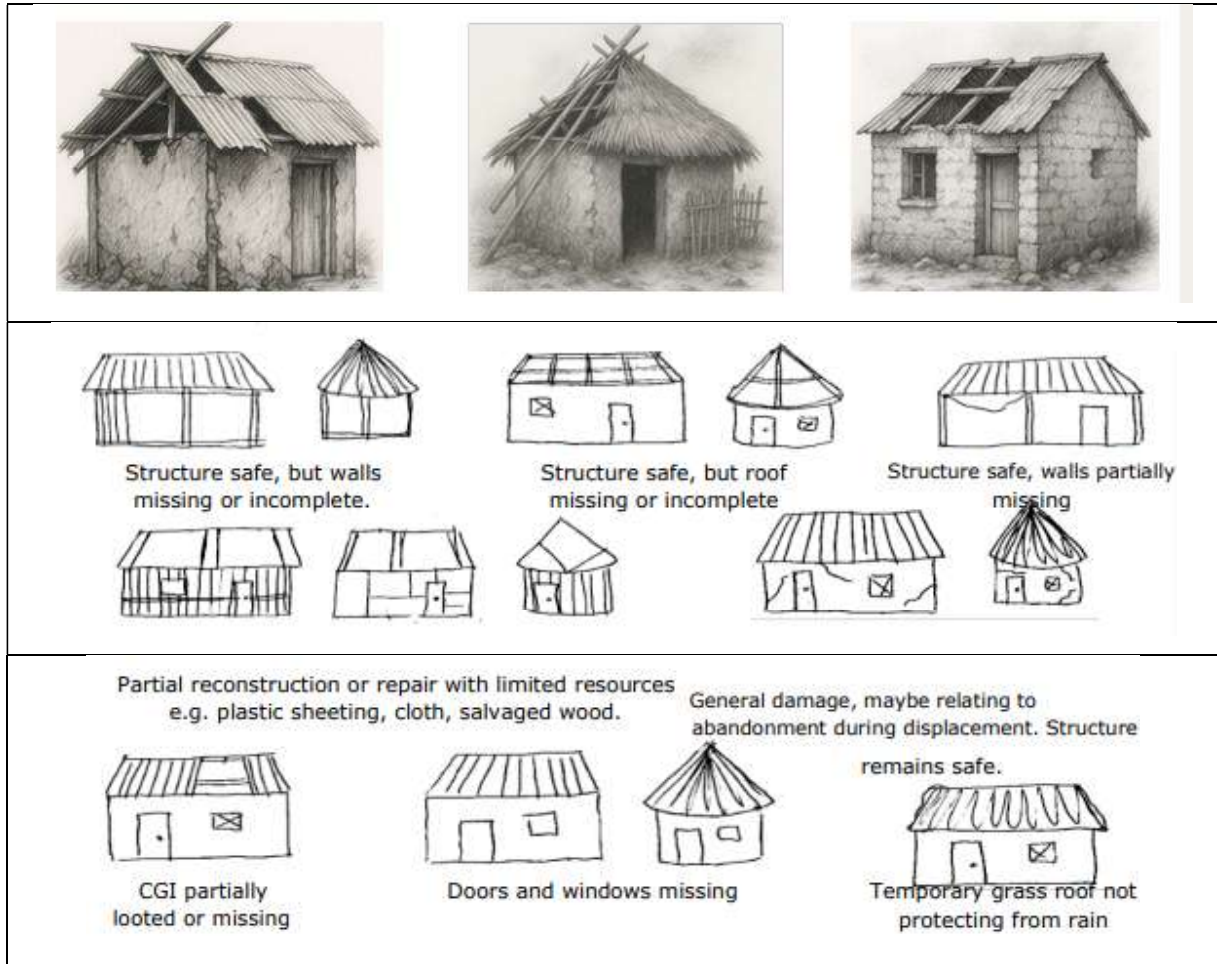


Figure 155: Partial damage house (Ethiopia ES/NFI, 2025)

C. Fully damages – are shelters that are completely burned down, structure mostly missing, home leaning which is unsafe to occupy and a house that lost structural soundness and requiring reconstruction. Complete destruction, near total loss of structure, more than 50% damage and requires demolition and reconstruction. Shelter that are visibly leaning, cracked, or at imminent risk of collapse are also considered damaged.



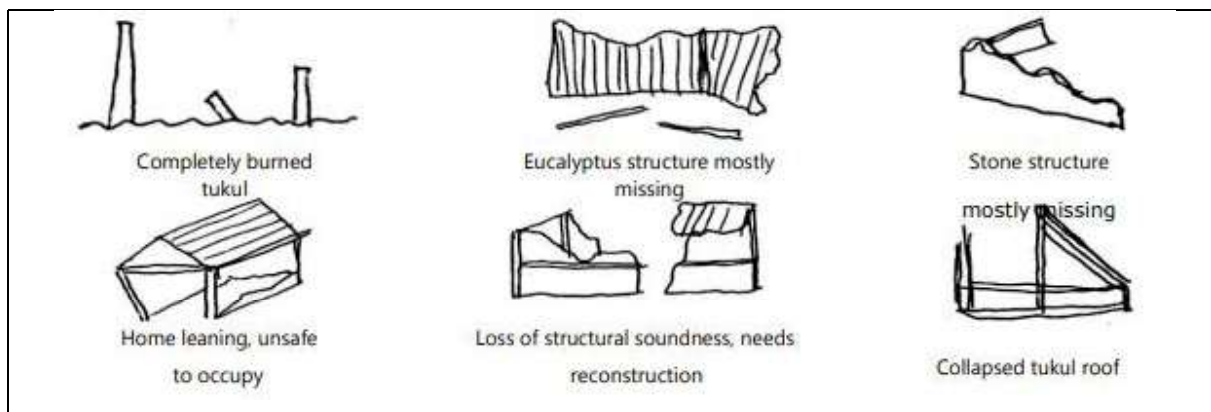


Figure 156: Fully damage house (Ethiopia ES/NFI, 2025)

Core house interventions

A core house is a permanent, incremental housing solution widely adopted in post-conflict and post-disaster reconstruction contexts. Unlike emergency shelters, which provide temporary protection through tents, tarpaulins, or shelter repair kits, core housing is designed as a durable structure that can be progressively expanded by beneficiary households over time (United Nations Office for Disaster Risk Reduction, 2015). Typically, a core house consists of a structurally sound foundation, walls, roofing, and one or two finished rooms, enabling households to incrementally enlarge or complete the dwelling as financial and material resources become available (IFRC, 2013). Within the housing recovery continuum, core housing occupies an intermediate position between transitional shelter solutions and full permanent reconstruction. It is particularly suitable in situations of total or near-total housing destruction, where immediate full reconstruction may be financially or logistically unfeasible (Sphere Association, 2018). By incorporating the “build back better” principle, this approach aims to enhance resilience while facilitating gradual recovery (United Nations Office for Disaster Risk Reduction, 2015).

In rural areas, core housing interventions emphasize community participation and the use of local construction technologies and materials. In many cases, stone masonry—widely used in traditional construction in the region—has been applied in the establishment of primary core units, demonstrating appropriate structural performance consistent with local building practices. However, certain features of core housing differ from traditional Hidmo houses. Notably, while traditional Hidmo structures typically use thick stone walls and flat mud roofs, many humanitarian-supported core houses have replaced flat earthen roofs with corrugated galvanized iron (CGI) sheets provided by NGOs. This modification reflects efforts to improve durability and reduce maintenance requirements, although it represents a departure from traditional architectural forms.

Core shelters, also referred to as one-room shelters, are designed as durable, incremental housing units intended to transition into permanent homes over time. They typically include a foundation and basic services that meet minimum habitability standards, providing one or two structurally sound rooms while

allowing for future expansion as household resources permit (IFRC, 2013). In the southern part of Tigray, World Vision Ethiopia (WVE) implemented a core shelter program for returnees and conflict-affected households, providing durable and upgradeable units that enhanced safety, residential stability, and early-stage recovery within the affected communities.

Progressive house interventions

Progressive shelters are semi-permanent housing solutions designed to be upgraded into permanent homes as part of long-term recovery. These shelters are constructed on sites appropriate for long-term use and incorporate design features that allow households to expand and strengthen their homes over time, thus bridging the gap between immediate humanitarian response and fully durable housing. Such incremental strategies support sustainable settlement patterns and alignment with local development systems, rather than returning displaced populations to repeated cycles of emergency sheltering.

Progressive house interventions provide a structured pathway from emergency shelters to durable housing, combining phased construction, community participation, and integration with broader settlement systems. They involve incremental improvements to housing, beginning with foundational or core shelters and enabling gradual upgrades into more permanent, resilient structures. This incremental approach is recognized in humanitarian shelter research as a means of bridging temporary and long-term housing solutions, addressing resource, time, and reconstruction constraints.

These interventions can be implemented by NGOs and shelter clusters as a flexible, community-centered approach that enables displaced households to transition from temporary accommodation to long-term housing while incrementally improving safety, durability, and integration with local settlement systems. Humanitarian coordination mechanisms like the Shelter Cluster include transitional and incremental shelter strategies as part of the continuum from emergency relief to durable solutions.

However, adoption of progressive house interventions is often limited in case of large affected population of Tigray, due to factors such as high costs, longer implementation timelines, and lower prioritization during acute emergencies. In many crisis responses, agencies focus resources on short-term emergency sheltering, leaving incremental and longer-term upgrading strategies under-resourced despite evidence that step-by-step processes support recovery and reconstruction pathways.

3.4. NGO-led housing reconstruction experiences

Numerous studies have investigated multi-stakeholder coordination in post-disaster housing reconstruction, identifying four principal approaches: government-led, donor- or NGO-led, market-driven, and owner-driven strategies.

i. Government-Driven approaches:

These involve centralized planning and implementation by the state or public authorities, which control the allocation of resources. Resource availability is therefore principally determined by governmental agencies and official bodies.

ii. Donor Driven (NGO-led) approaches:

Here, international donors or NGOs initiate and fund reconstruction efforts, often targeting specific communities or regions. Reconstruction is managed by external agencies rather than by the affected households themselves.

iii. Market-Driven approaches:

These rely on private-sector participation: the rules, dynamics, and resources of the construction market largely determine the availability and distribution of housing reconstruction options. In this model, private companies deliver construction services, and market mechanisms guide housing supply.

iv. Owner-Driven approaches:

This approach empowers affected households to reconstruct their own homes, generally with financial and/or technical support from aid agencies. The households themselves take responsibility for design, construction, or repair, often ensuring that the rebuilt housing responds to their needs, preferences, and context.

In the post-war context of Tigray, housing recovery has been primarily coordinated by the government, with financial and technical support largely provided by international donors, UN agencies and NGOs. Programs such as the Response-Recovery-Resilience for Conflict-Affected Communities in Ethiopia (3R4CACE), financed by the World Bank and implemented by UNOPS together with regional authorities, exemplify this model; reconstruction of health and education infrastructure has relied heavily on donor resources (UN Ethiopia, 2024; UNOPS, 2024). Local NGOs continue to support displaced and vulnerable populations, addressing both immediate needs and livelihoods, further demonstrating the donor- or NGO-driven dimension of recovery. Despite these efforts, there has been minimal involvement from academic institutions and very limited engagement of the private sector, suggesting that post-war reconstruction remains largely reliant on public coordination and external humanitarian support, rather than on locally led or market-driven initiatives (VNG International, 2024). This reliance underscores both the scale of damage and the critical role of international actors in facilitating recovery and reconstruction in Tigray.

Housing reconstruction in Tigray is primarily carried out by non-governmental organizations (NGOs) and humanitarian shelter partners, working in coordination with and under the guidance of local administrative authorities. While these actors initially concentrated on delivering emergency shelter (ES) during the early stages of the conflict, their role has progressively evolved in the post-war period. Their current interventions include recovery and reconstruction efforts aimed at supporting war-affected populations, such as IDPs,

returnees, and host communities. Evidence from various studies (Jha et al., 2010; Sanderson et al., 2012; UNDP, 2021) indicates that owner-driven reconstruction approaches tend to result in higher levels of beneficiary satisfaction, better quality and cultural appropriateness compared to donor-driven models. Hence most of NGO-led approach implemented with the active participation of beneficiary as they contribute labor and local materials such as soil, water, sand and pool in case the support is not enough. In this subsection presents three case studies of housing reconstruction led by NGOs from different areas of Tigray, showcasing exemplary practices and lessons learned. For housing reconstruction different partner uses different package of kits distribution and cash for labor, However, with coordination of ES/NFI cluster (shelter cluster) the housing reconstruction via SRK tried to be harmonized and uniform across the Region to avoid conflict of interest. However, household receive support according their damage extent and the replacement BoQ done accordingly.

Selection and description of case studies:

Post-war housing recovery and reconstruction efforts in Tigray mostly demonstrated through shelter repair kits (SRK) projects, implemented by humanitarian shelter partners. SRK is primarily used to support the reconstruction of core housing structures in damaged homes. However, the scale of these interventions remains very limited compared to the vast housing needs across the region.

This study presents an analysis of three case studies involving shelter repair kits (SRK) projects, implemented as part of post-war housing reconstruction efforts in various locations across in Tigray. The case studies were selected based on both similarities and variations in the following key criteria:

- The areas experienced a high level of housing destruction as a result of the war;
- Completed reconstruction projects
- Projects situated in geographically diverse locations.
- Each project implemented with the support of NGO
- The reconstruction process involved active community participation
- All projects demonstrated strong performance implemented
- Household target are returnees or war affected communities
- Consider the cultural norms for shelters/housing and design with durable solutions in mind.

Table 38: Case study of NGO-led housing reconstruction

Reconstruction program/project	Hawzen	Gulo-mekada	Bora
Case of damage	War	War	War
Location	Easten Zone	Easten Zone	South Zone
Project completion	Completed	Completed	Completed
Years since damage*	Five	Five	Five
Implementing agency	IOM	IOM	IOM
Donor**	CERF	CERF	ECHO
Year of reconstruction	2023	2023	2024

* Since the Tigray conflict has gone through repeated phases of fighting, much of the destruction has occurred continuously since 2020 ** The Central Emergency Response Fund (CERF) is a UN fund that quickly provides humanitarian financing in emergencies, while ECHO is the EU's humanitarian arm supporting emergency relief and disaster response worldwide.

The cycle of project management for NGO-led housing reconstruction process through the Shelter Repair Kits (SRK) and /or core house unit tabulated below:

Table 39: Stapes in NGO-led housing reconstruction in Tigray as recommended by ESNFI cluster

Milestones	Main activities	Stockholders
Project launching	<ul style="list-style-type: none"> • Initiating and kickoff • Stakeholder identification & engagement 	<ul style="list-style-type: none"> • Donors • Implementing partner
Project feasibility assessment	<ul style="list-style-type: none"> • Evaluating whether a project is viable, practical, and worth pursuing in the target area. • Consider also security and accessibility issues • Select target locations (specific Kebelles) in consultation with the zonal BOSAR and local authorities wereda (district). • Assess sample damaged houses and draft BoQ for procurement purposes. 	<ul style="list-style-type: none"> • Implementing partner • Local administration (BOLSA/ BOSAR)
Registration and targeting	<ul style="list-style-type: none"> • Set eligibility/criteria for HH registration and targeting • Receiving preliminary list of beneficiaries 	<ul style="list-style-type: none"> • Implementing partner • Local administration (BOLSA/ BOSAR)
Verification	<ul style="list-style-type: none"> • Door-to-door assessment • Actual Boq for damaged HH • Housing, Land, and Property (HLP) assessment 	<ul style="list-style-type: none"> • Implementing partner • Local administration (BOLSA/ BOSAR)

	<ul style="list-style-type: none"> • HH damage level categorization 	
Distribution of kits and tools	<ul style="list-style-type: none"> • Based on damage level assign the amount of kits and distribution • Training carpenters 	<ul style="list-style-type: none"> • Implementing partner • Local administration (BOLSA/ BOSAR)
Cash transfer (one or two terms)	<ul style="list-style-type: none"> • Varity amount based on damage level • One unconditional and second continual cash for labour 	<ul style="list-style-type: none"> • Implementing partner • Financial institutions
Post-Distribution Monitoring (PDM)	<ul style="list-style-type: none"> • Evaluating the distribution process 	<ul style="list-style-type: none"> • Implementing partner
Monitoring, Evaluation, Accountability, and Learning (MEAL)	<ul style="list-style-type: none"> • Overall assessment of the project process and its impact, performance 	<ul style="list-style-type: none"> • External unit

Using the example of the three weredas (districts) of Hawzen, Gulomekada, and Bora, this sub-section highlights the experience of NGO-led housing reconstruction in a post-war context. The intervention followed a top-down reconstruction approach, providing small-scale, limited responses in the face of widespread housing reconstruction. While the reconstruction projects were technically and project-management-process successful, their overall impact was limited due to the budget constraints and less involvement of the community, resulting in low coverage relative to the scale of the need.

NGO-led housing reconstruction requires thorough collaboration and continuous dialogue with district (woreda) authorities, including regular support and project monitoring, particularly during periods when NGO technical staff are not on site. From the outset, local authorities participate in identifying potential beneficiaries, ensuring that interventions align with community needs. NGOs are responsible for project design and bring the necessary financial resources and technical capacity to implement reconstruction effectively.

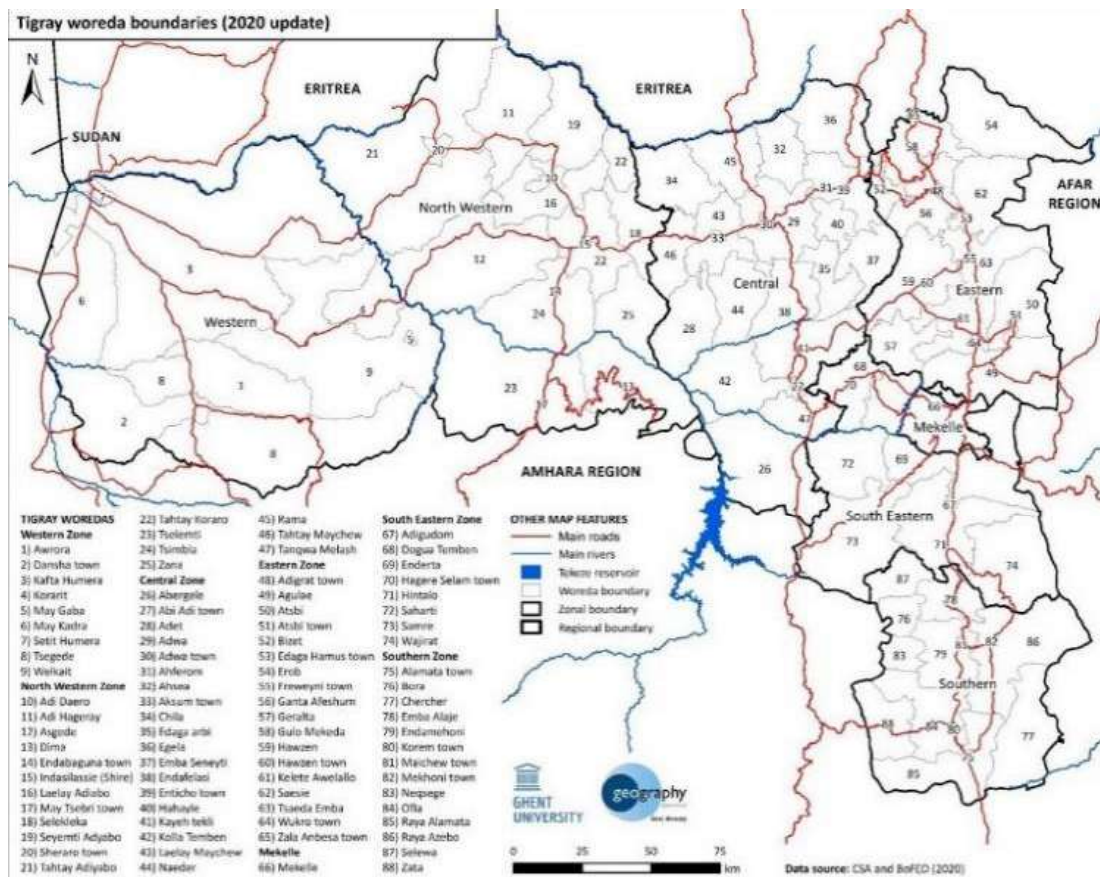


Figure 157: Map of Tigray Regional State Administration showing updated Wereda (district), boundaries, 2020 (Annys et al., 2021)

3.4.1. Case study_1: Hawzen

Pre-war context

Hawzen wereda, located in the Eastern Zone of Tigray and the town of Hazen lies approximately 105 kilometers from Mekele, the regional capital. The wereda is administratively divided into 23 tabiyas, which are sub-districts under the jurisdiction of the wereda-level government. Hawzen was a focal point during the two-year war, serving as a frontline for multiple waves of warfare.

The primary livelihood of the wereda population is agriculture, while various forms of trade and small-scale commerce are common in the town center. In terms of housing, stone construction is the dominant typology. In the urban areas, houses built with hollow concrete blocks (HCB) are increasing. However, in the rural villages of the wereda, the traditional stone house known as Hidmo remains prevalent. This vernacular structure is typically composed of thick stone walls and a flat mud roof, often featuring a cluster of interconnected thick wall rooms with central courtyard. The wereda is widely recognized as a tourist destination, renowned for its extraordinary rock-hewn churches nestled within a striking natural landscape. The Gheralta mountain range serves as the primary location for these historic churches, making it a cultural and religious landmark in the region.



Figure 158: Typical Hidmo house in the area (Source: Patassini D., 2024)

Post-war reconstruction

In the aftermath of the war, Hawzen emerged as one of the epicenters of the war, suffering extensive destruction of housing and significant asset loss due to bombardment, artillery fire, shelling, and deliberate burning (arson). The two-year war in Tigray impacted all areas of the region, and Hawzen wereda was no exception, experiencing widespread damage to housing and a severe deterioration in decent living conditions. Due to the high level of destruction, Hawzen was identified as a priority area for housing reconstruction by the Shelter Cluster, in coordination with local government authorities. Both international and local non-governmental organizations (NGOs) have undertaken multiple rounds of reconstruction interventions, aiming to restore adequate shelter and improve the living conditions of war-affected populations, and returnees.



War damage in rural house in Maikado, Hawzen

War damage in urban house in Hawzen town

Figure 159: War-Inflicted Housing Damage, Hawzen (Source: author 2022)

Following successive waves of war, affected and vulnerable communities began returning to their home villages and initiating self-led rehabilitation efforts. In response, local administrative bodies actively engaged with various humanitarian organizations to seek support. Many war-affected households were living in partially damaged homes, while others temporarily merged with extended family members or neighbors due to the lack of adequate shelter. The housing reconstruction efforts have been coordinated by the Wereda Bureau of Labor and Social Affairs (BOLSA)²⁵⁴, the office mandated with overseeing and facilitating humanitarian aid activities within the wereda in collaboration with social workers, professionals, among others.

The IOM and Catholic Relief Services (CRS) are among the key humanitarian organizations supporting shelter reconstruction efforts in the area through the Shelter Repair Kits (SRK) program. In 2022, IOM supported the reconstruction of 450 damaged households, followed by assistance to an additional 175 households in 2023. Similarly, CRS provided support for the reconstruction of 135 households. In addition, Heal Our People (HOP)—a local non-governmental organization established in the aftermath of the war—contributed to the reconstruction of 284 households. Across all these initiatives, the support primarily focused on the provision of essential industrial construction materials, including corrugated galvanized iron (CGI) sheets, hand tool kits, roofing and structural nails, and various types of hinges. The actual construction work is primarily undertaken by the affected households themselves. In some cases, they hire skilled carpenters to complete specific tasks such as roofing, supported by cash assistance provided specifically for labor costs.

The housing reconstruction effort is based on the minimum reconstruction and repair kits by the humanitarian organization for a core one shelter house. Capacity building on technical training and awareness creation is also part of the support to success of the projects. However, the actual reconstruction work is carried out by the community members themselves, who have generally possessed strong technical knowledge of traditional housing construction mainly every household has a good mason and know the traditional construction system. Based on geographic proximity grouping also done for HH to facilitate the reconstruction and share hand tools and support each other. Effort made to preserve local architectural practice, with main modification to replace traditional flat mud roof with corrugated galvanized iron (CGI) sheets, provided as part of the support package. Prior the final delivery of the assistance, coordination with local authorities ensured proper registration for targeting, HH verification and check the alignment of the specific support with the housing damage need and conditions of reconstruction efforts.

For instance, the verification process and the Bill of Quantities (BoQ) prepared for each damaged household are based on the Sphere Standard, which recommends a minimum shelter area of 3.5 square meters per

²⁵⁴ BOLSA primarily provides support in overall coordination and the selection of beneficiaries.

person. Accordingly, taking into account the average household size in Tigray—approximately five members—the core housing design and corresponding material assistance estimates are based on a total area of 17.5 square meters. However, affected communities could build bigger house by adding their own resources or money.

The humanitarian shelter assistance for housing reconstruction varies in both form and monetary value, depending on the extent of damage—categorized as minor, partial, severe, or complete. Though shelter cluster effort to harmonized across different target areas. Based on the response models of the three NGOs considered, support ranges from a minimum of 5 to a maximum of 25-30 corrugated galvanized iron (CGI with G-35) sheets. Correspondingly, cash assistance is also provided, with amounts varying between USD 25 and USD 50. This financial support is delivered through a standardized and widely accepted cash-based intervention (CBI) mechanism, primarily via bank transfers to beneficiaries' accounts in two phases based on condition.

Short- and long-term impact

Following the implementation of the above reconstruction program, along with field visit, interviews and monitoring results, it was observed that most households benefiting from the initiative experienced improved and diversified livelihoods. Housing standards also showed significant progress, transitioning from traditional flat mud-roofed structures to more conventional roofing styles. However, concerns remain regarding the long-term environmental sustainability of these new housing materials. Beneficiaries generally perceived their housing and overall living standards as improved compared to pre-war conditions, particularly when contrasted with those who did not receive support. The reconstructed homes not only offered safety, dignity, and security but also provided a foundation for restarting decent livelihoods. In the aftermath of the reconstruction, other humanitarian actors have also begun supporting livelihood programs, responding to the resettlement of beneficiaries in their newly built homes.

The SRK program defines the initial reconstructed unit as a "core house," intended to serve as a foundational structure that can be progressively expanded horizontally by the household over time. This incremental approach allows families to adapt their homes based on evolving needs, including changes in family size, availability of financial and material resources, and livelihood requirements. In the rural area where the majority of the war-related damage occurred households often rely on mixed farming systems that involve the keeping of livestock and the use of surrounding land for agricultural purposes. These rural livelihoods necessitate additional space of the core house constructed by the SRK for activities such as kitchen, animal shelter, and storage of agricultural inputs. Therefore, the flexibility to horizontally expand the core house is critical not only for improving living conditions but also for supporting long-term livelihood sustainability.



Figure 160: Hidmo housing reconstruction: flat roof replacement shade and open gable CGI roof (Source: author 2022 and 2024)

3.4.2. Case study_2: Gulomekada

Pre-war context

Gulomekada wereda or district, is located in the Eastern Zone of Tigray approximately 135km northeast of Mekelle, the capital city of Tigray region. It has 9 Kebele or tabyas namely: Fatsi, Ambeste Fkada, Shewit Lemlem, Mezabr, Sebeya Ketema, Sebeya Getser, Marta, Addis Tesfa and Adis Alem. The wereda covers a total area of 703.2 square kilometers and characterized by a landscape plateaus and mountains. It shares its northern border with Eritrea and has experienced multiple waves of war, including recent war from 2020-2022 as well as the Ethiopia-Eritrea war 1998-2000.

Towns such as Zalambessa, Fatsi, and Sebeya are part of the district, with Fatsi currently serving as the administrative center of the district. Zalambessa, the last urban area along the border with Eritrea, experienced widespread destruction during the 1998–2000 Ethiopia–Eritrea war, as it was one of the epicenters of the conflict. The city was almost entirely damaged, destroyed, and collapsed, representing a severe case of both domicide²⁵⁵ and urbicide²⁵⁶. More recently, following the 2020–2022 Tigray conflict, Zalambessa remains largely inaccessible due to ongoing security concerns.²⁵⁷

Agriculture is the predominant means of livelihood, and has mixed farming system both crop production and animal husbandry. In urban areas supporting the lives of local people alongside various forms of trade and small-scale commerce, although there is no surplus food production. The cactus pear, locally known as

²⁵⁵ Domicide is the deliberate killing of home by human agency, including acts that damage, destroy, or deny the ability to inhabit a dwelling (Porteous & Smith, 2001).

²⁵⁶ Urbicide is the deliberate killing of the city, not just buildings, but the urban condition as a space of heterogeneity, difference, and coexistence (Coward, 2013).

²⁵⁷ According to a report published by an online newspaper called *The Reporter* on September 21, 2024, the security situation in the district was described as follows: “Eritrean forces must leave Zalambessa” – Getachew Reda Residents of the Gulomahda and Irob woredas of Tigray’s Eastern Zone on the border with Eritrea have echoed their frustrations with occupying Eritrean security forces whom they say are working to expand the territory under their control and issue national identity cards to residents in these areas. Parts of northern Tigray, including Zalambessa, which is located in Gulomahda Woreda, have been under the control of Eritrean forces since the war. The Ethiopian National Defense Forces (ENDF) had been deployed in the vicinity of these areas as a buffer since the end of the war, but these forces withdrew last month, according to a Tigray Interim Administration (TIA) official who spoke anonymously.

'Beles', is widely found in the area and plays a significant ecological, economic, and cultural role in the district. Especially during the rainy season, it serves as a staple food for a large portion of the population, helping to improve food security during times of scarcity.

In terms of housing, the Hidmo house is the predominant typology in rural areas. In contrast, urban areas commonly feature houses constructed with stone or hollow concrete block (HCB) walls and corrugated galvanized iron (CGI) sheet roofs. The Hidmo house typology is similar to those found in other parts of the Eastern Zone.



Figure 161: War-Inflicted Housing Damage, Gulomekeda (Source: authore,2024)

Post-war reconstruction

Gulomekeda Wereda, located along the border with Eritrea, has been particularly vulnerable to conflict due to its strategic position. Its proximity to the border has repeatedly placed it on the frontlines, exposing it to intense bombardment, artillery fire, shelling, and instances of deliberate burning of houses (arson). The area has frequently served as a base for military operations, including the construction of blockades and forts by warring parties. As a result, widespread housing destruction has a persistent issue. Given the scale of the damage, Gulomekeda was identified as a priority area for shelter interventions by humanitarian organizations in the post-war recovery and reconstruction period.

The housing reconstruction efforts led by NGOs primarily target war-affected communities, with a particular focus on returnees and host households. However, it is important to acknowledge that local communities were the initial responders to the recovery process, especially since formal reconstruction activities began only two years after the end of the war. Houses with varying levels of damage are considered for reconstruction; however, in situations of limited funding or quota, priority is typically given to homes with severe structural damage.

The overall reconstruction process is coordinated through the Shelter Cluster and is supported by local administrative bodies on the ground, particularly during the targeting, beneficiary selection, and verification phases. Local authorities are responsible for conducting the initial housing damage assessments, which are

then shared with the Shelter Cluster and/or NGO shelter partners. Based on these assessments, reconstruction efforts are implemented in line with the specific project design and implementation frameworks of standard.

The housing reconstruction efforts targeted both returnee households and non-displaced households whose homes were damaged during the conflict. To enhance the effectiveness of the intervention, the project applied a set of selection criteria aimed at maximizing impact and ensuring feasibility. These criteria included: the security status and accessibility of the kebeles; the extent of housing damage; household size, prioritizing larger families; the presence of vulnerable individuals; limited self-repair capacity of the household; lack of support from other humanitarian partners; and the ability to complete reconstruction within a short timeframe. Additionally, areas at low risk of renewed looting or conflict were prioritized to safeguard the sustainability of recovery efforts.

Shelter partners such as the IOM and CRS, through its local partner ADCS, have supported housing reconstruction for returnees in the area through the Shelter Repair Kits (SRK) program. In 2023, IOM facilitated the reconstruction of 383 households, while CRS/ADCS supported an additional 445 households identified as high-priority cases within the woreda. The assistance package primarily includes technical training, in-kind provision of industrial materials under the SRK framework, and cash support for labor costs. For instance, the assistance provided by IOM was categorized into three levels based on the extent of damage, ranging from Level 1 (severe damage) to Level 3 (minor damage). Beneficiaries were also informed about the varying types of support available for each category in order to manage expectations and prevent the emergence of unrealistic demands or misunderstandings among community members.

Level 1			Level 2			Level 3		
Cash	Birr	6,000	Cash	Birr	4,000	Cash	Birr	2,000
CGI	Pcs	25	CGI	Pcs	16	CGI	Pcs	8
Doom headed Nail	Kg	3	Doom headed Nail	Kg	3	Doom headed Nail	Kg	3
Structural headed Nail (Q-10)	Kg	2	Structural headed Nail (Q-10)	Kg	2	Structural headed Nail (Q-10)	Kg	2
Structural headed Nail (Q-12)	Kg	2	Structural headed Nail (Q-12)	Kg	2	Structural headed Nail (Q-12)	Kg	2
Hinge 4"	Pcs	2	Hinge 4"	Pcs	2	Hinge 4"	Pcs	2
Hinge 3"	Pcs	2	Hinge 3"	Pcs	2	Hinge 3"	Pcs	2
Door Lock	Pcs	2	Door Lock	Pcs	2	Door Lock	Pcs	2
Window Lock	Pcs	1	Window Lock	Pcs	1	Window Lock	Pcs	1

Figure 162: Shelter Repair kits (SRK) aligned with damage severity levels based on ESNFI cluster

The reconstruction approach is based on providing a minimum-standard core shelter unit, designed to accommodate a single household. Following the distribution of in-kind shelter industrial materials and two rounds of cash assistance, community members take responsibility for the actual construction of their homes. As in other parts of Tigray, local communities possess traditional skills in building thick stone walls, and thus, the primary area requiring external support is typically carpentry work for roofing. Moreover, the reconstruction process benefits from strong community-based mutual support systems. Households often

assist one another during construction, reflecting a longstanding cultural practice in which neighbors and extended families contribute labor and resources to support house building. This tradition of communal construction was widespread even before the conflict and has continued to play a vital role in post-war recovery.

Mr. Z, a household head in the district, noted that in Tigray—particularly in this area—traditional housing construction has long been a collective community effort, supported by neighbors and extended families. Construction is typically carried out in a group-based or communal manner, where members of the community come together to assist one household. Once the construction of one home is completed, the group often continues to support other vulnerable families in need. This practice of mutual aid and collective labor is a deeply rooted and common tradition in the region.

Despite the valuable contributions of NGOs to the housing reconstruction effort, the process has not been without challenges. Out of the nine kebeles (tabias) in the district, only a seven— Ambest Fikada, Shewit Lemelem, Fatsi, Mezabr, Ketema Sebeya, Hadush Tesfa and Geter Sebeya —are considered relatively secure and accessible. In contrast, serious security concerns persist in other parts of Gulomekeda, significantly hindering implementation of housing reconstruction. One of the most pressing issues is the presence of unexploded ordnance (UXO).²⁵⁸ Additional constraints include the dispersed settlement pattern of households, which complicates logistics, and cases where homes have been entirely destroyed (100% damage). In such instances, the level of assistance provided is often insufficient, primarily due to budget limitations and high market price escalation.

The community contributions made by beneficiaries—both in cash and in kind—toward the limited assistance provided by NGOs become particularly apparent when they seek to expand the core housing unit into a larger structure. This expansion is typically undertaken using the same wall construction method, supplemented by traditional yet improved materials, such as conventional corrugated galvanized iron (CGI) roofing sheets, along with standard doors and windows.

²⁵⁸ Unexploded Ordnance (UXO) remains a serious threat in Tigray, with tragic incidents continuing to occur. In 2023, for example, children reportedly lost their lives in Mezabr Tabia, Gulomikeda Woreda, due to accidental exposure to UXO. BBC also reported on November 2, 2024, A 16-year-old had just stepped on a piece of ordnance that left the bones and flesh on his left leg smashed, torn and bleeding - he was in agony." The explosion threw me away backwards. There was blood everywhere. People heard the sound and came rushing," he told the BBC World Service.

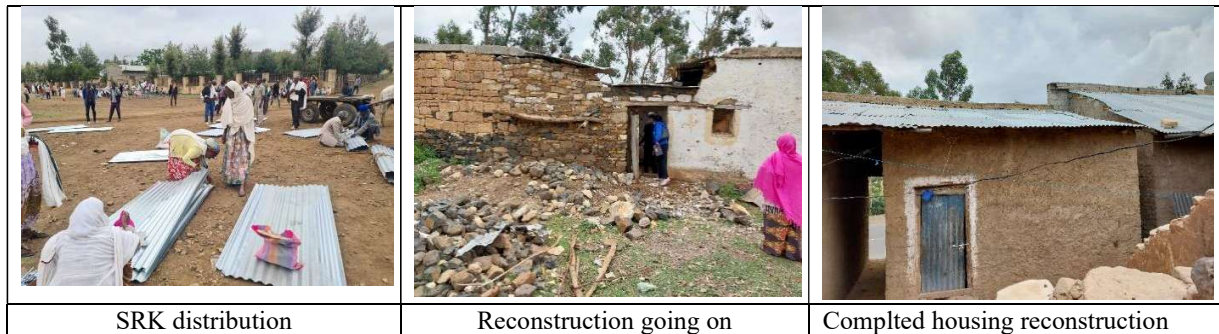


Figure 163: Housing reconstruction process and practices in Gulomekeda (Source: author, 2024)

3.4.3. Case study_3: Bora

Pre-war context

Bora is a woreda (district) located in the Southern Zone of the Tigray Region in northern Ethiopia. The town of Bora, which serves as the administrative center, lies approximately 100 kilometers south of Mekelle, the capital of the Tigray Region. The district comprises five kebelles (tabiyas), including Frewat, Wareb, Liham, Kelma, and Mebel. It has also a population of 8,215 living in the five kebelles.

Similar to other areas in the region, the district's predominant means of livelihood is a mixed farming system that combines crop production with animal husbandry. Traditional gold mine is also another source of income. In urban areas such as Bora town, the local population also engages in trade and small-scale commercial activities as additional sources of income. However, the district is frequently affected by food insecurity, largely due to its mountainous terrain, which poses significant challenges to agricultural productivity.

During field visits, one encounters the district's authentic two-story traditional vernacular 'Hidmo' houses; however, such structures—particularly two-story buildings, conical forms, and circular-plan dwellings—have become increasingly rare. These houses are typically constructed with thick stone walls and were originally roofed with thatch. In recent years, traditional thatching has been largely replaced by corrugated galvanized iron (CGI) sheets, reflecting a broader trend toward the modernization of Hidmo architecture across the region. Furthermore, the recent conflict has had a devastating impact on this traditional housing typology, resulting in widespread damage and destruction, and creating an urgent need for large-scale reconstruction and preservation efforts.

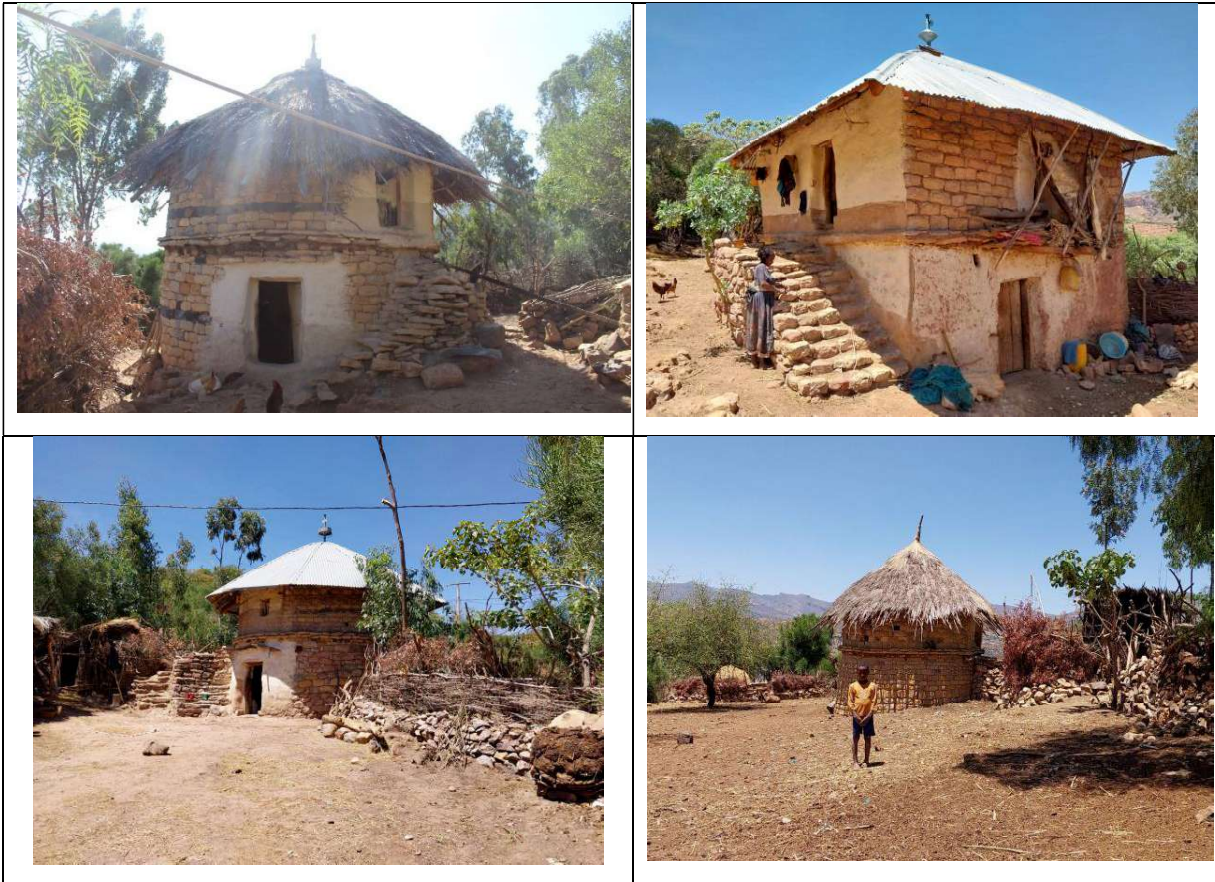


Figure 164: Traditional and authentic vernacular architecture in Bora area, South Tigray (Source: author, 2024)

Post-war reconstruction

During the recent Tigray war, Bora suffered extensive destruction, both in terms of infrastructure and civilian life. Its proximity to the Amhara Region and mountainous terrain contributed to its strategic vulnerability and the severity of the violence experienced. A report by the published-on March 19, 2021 by *Los Angeles Times*, titled “*In an Out-of-Sight War, a Massacre Comes to Light,*” documented the Bora massacre, highlighting instances of extrajudicial killings and the targeting of civilians. The article brought international attention to the atrocities committed in the area, underscoring the human cost of the conflict. According to the local BOLSA office in the district, a total of 291 houses has been reported as damaged, of which 120 are completely destroyed or burned, 70 partial damaged whereas 101 are simple damage. Out of the five kebelles (tabiyas), Fre-Sewat and Waereb are the most affected areas in the wereda. Additionally, the Wereda BOLSA report indicates that 1,178 internally displaced households (IDPs)—comprising 578 female-headed and 600 male-headed households—have arrived in the area from various parts of Tigray. These individuals are currently residing within the host community and at one designated IDP center, which accommodates 64 households. The majority of the displaced population originates from the western part of Tigray.

The district continues to face significant challenges due to the limited humanitarian assistance provided by aid organizations. These challenges are further exacerbated by persistent food insecurity and poor road accessibility, which hinder both emergency response and long-term recovery efforts. Despite the extensive damage sustained during the conflict, the district has been relatively under-prioritized in the allocation of humanitarian support. Much of the housing destruction is attributed to artillery shelling and widespread burning (arson), which have had a severe impact on the local population and infrastructure.

Housing reconstruction efforts in the district have targeted both returnee households and non-displaced residents whose homes were damaged during the conflict. Special attention and priority have been given to households that experienced complete destruction of their homes and to vulnerable groups. To coordinate these efforts, the local government established a task force in collaboration with the host community, aiming to provide targeted support to beneficiaries to help them restore their shelters and gain access to essential services.

As a result of the aforementioned circumstances, the district has received limited support from humanitarian shelter partners. The only active local NGO currently operating in the area is the Action for Social Development and Environmental Protection Organization (ASDEPO), which delivers multi-sectoral services in response to the widespread damage. Additionally, organizations such as the IOM provided support to the district in 2023, including interventions in the two remote and hard-to-reach kebeles of Kelma and Mebel. Despite the high demand for reconstruction, IOM was able to assist in the rebuilding of only 80 houses under the SRK project. This support was guided by technical assessments, in which damaged houses were categorized into three levels—Level 1 (severe damage), Level 2 (moderate damage), and Level 3 (minor damage)—to determine the appropriate level of assistance.

Community participation in the district's reconstruction efforts has been remarkably high, despite the process being primarily led by NGO support and coordinated by local authority. Women, in particular, have played a significant role—contributing both labor and organizational support, especially in coordinating the work and hiring of carpenters for roofing activities. However, chief carpenters with the necessary skills for roof reconstruction are scarce. As a result, families often experience delays as they wait for the limited number of available carpenters to assist with roof repairs. Women have played a significant role, particularly in wall plastering activities and interior decoration of the houses. Their involvement not only reflects traditional gendered labor roles in construction but also highlights the critical contribution of women to community-led recovery efforts in post-war settings.



Figure 165: Reconstruction of damaged house in Bora area, South Tigray (Source: author,2024)

3.5. Proposals for housing reconstruction in Tigray

The three case studies of post-war housing reconstruction in Tigray demonstrate that the process has been primarily led by non-governmental organizations (NGOs), in close coordination with local government structures at the regional, zonal, and wereda (district) levels. A defining feature of the current reconstruction trend is the active involvement of the community, particularly following the distribution of assistance. Most reconstruction programs and projects are designed at the national level—often within the country offices of humanitarian organizations—in collaboration with the Shelter Cluster and with input from the Disaster Risk Management Commissions (DRMCs), before being cascaded down to the local implementation level.

However, considering the broader context of housing damage—its severity, scale, and the urgent needs—alongside the ongoing post-war recovery and reconstruction efforts, which have predominantly followed a top-down approach with limited engagement of local governments and communities, there is a critical need for a well-designed, context-specific housing reconstruction model or typology. Such a model should be needs-based and community-driven, while also addressing the technical, financial, and logistical challenges unique to the Tigray region.

Community-Led reconstruction model

The people of Tigray are widely recognized for their industriousness, strong work ethic, and high degree of social organization. Traditional house construction in the region is deeply rooted in communal practices, where building a home is not viewed as an individual task but a collective effort. It is customary for

neighbors and community members to form small groups to assist in the construction process, reflecting a strong culture of mutual aid and social cohesion (Pankhurst, 1992; Turton, 2006). This practice highlights the embedded nature of social compact structures within Tigrayan society, where informal social systems operate similarly to organized social building associations, playing a visible and essential role in housing development (Markakis, 2011).²⁵⁹

When an individual begins constructing a home, it is customary for neighbors to offer support by organizing labor, collecting materials, preparing meals, and providing traditional local beverages for the workers. In preparation for the construction, the homeowner typically spends several months gathering essential materials such as stones and wood, while also ensuring that food and drinks are ready to accommodate and sustain those contributing to the effort.

The housing construction practices outlined above are rooted in the strong social ties of the Tigrayan people and reflect their deeply embedded social compact structures. This culturally significant tradition offers a valuable resource that can be leveraged to support and enhance post-war reconstruction efforts in Tigray. NGO-led housing reconstruction initiatives (shelter repair kits program) have faced criticism for employing a one-size-fits-all and top-down approach, where beneficiary participation is often limited to the post-distribution phase—such as receiving in-kind industrial materials, cash assistance, or basic capacity-building training—rather than being actively involved in the planning and decision-making processes. Empowering local communities from the outset of housing reconstruction programs and projects significantly increases the likelihood of their success. In the context of Tigray, community participatory, empowerment and leadership—through labor contributions, coordination, and the sourcing of local materials—plays a critical role in advancing reconstruction efforts. It is also essential to formally recognize and support the vital role of women in both housing and livelihood recovery. Leveraging existing community structures, such as parallel committees, and strengthening coordination efforts at the kebele level—while ensuring effective collaboration with NGOs and government agencies—can greatly enhance the efficiency and impact of the reconstruction process and challenges the conventional approach top-down decision making.

²⁵⁹ Traditional social institutions in Tigray promote community cooperation through collective labor-sharing practices. Neighbors and community members often assist one another in house construction, reflecting strong traditions of mutual aid, reciprocity, and social cohesion.



Figure 166: Wall plastering: women’s participation in post-war housing reconstruction in Bora town, South Tigray (Source: author,2024)

Skilled labor development and deployment

Housing reconstruction efforts led by NGOs primarily focus on the provision of in-kind support such as construction kits, tools, and cash assistance. However, the actual implementation of the reconstruction work is largely the responsibility of the beneficiaries themselves. To enhance local capacity, beneficiaries are grouped based on their geographic proximity and provided with technical training and support. These training sessions aim to equip community members with basic construction skills—including carpentry and roofing techniques—and to familiarize them with the use of the provided kits and hand tools. While beneficiaries often rely on skilled carpenters for complex tasks such as roofing, wall construction is typically carried out by local masons with the support of the community through participatory approaches. In remote areas such as *Kelma* and *Mebel* kebelles in the Bora region, mobile teams composed of skilled carpenters and technicians are deployed to facilitate the reconstruction process by IOM during the SRK project and the team incentives or subsidies for overseas of the housing reconstruction.



Figure 167: Capacity building for SRK beneficiaries in Bora district (Source: IOM Ethiopia,2023)

Technical damage assessment and categorization

Damage can be assessed through two main approaches. A preliminary or rapid damage assessment is typically conducted immediately after the incident by local authorities in collaboration with affected individuals. While this form of assessment may lack technical precision, it is useful for capturing initial information that can inform subsequent, more detailed technical assessments. Given that damage often results in the loss of economic benefits and other forms of hardship, this initial assessment should be linked to identifying immediate needs. Although not highly technical, rapid assessments are particularly valuable for facilitating early communication with humanitarian partners and for initiating aid requests. They may also include a rough classification of the level and type of damage, which helps to prioritize response efforts effectively. A preliminary or rapid damage assessment can also be conducted using experts, remotely through the use of GIS-based mapping and integrated assessment tools, which significantly enhance the effectiveness of planning and monitoring processes.

A detailed technical assessment is conducted once the post-war situation has stabilized. This type of assessment requires the involvement of qualified experts from relevant fields to generate in-depth, technically accurate information regarding the extent and nature of the damage, associated losses, and the reconstruction needs. It also integrates the principles of Build Back Better (BBB²⁶⁰) to promote resilience and sustainability in the recovery process. From a technical standpoint, the assessment involves evaluating the structural integrity of damaged houses, determining the feasibility of repairs, and preparing a Bill of Quantities (BoQ) for cost estimation. It also considers both short-term repairs and long-term reconstruction requirements. Damage categorization within detailed assessments is typically based on a combination of visual inspection and structural criteria, allowing for a more accurate classification of damage severity (intact-to-full collapsed) and prioritization of interventions.

Multi-tiered housing support packages to household-specific responses

Based on technical expertise, damage, loss, and needs assessments (DLNA) and corresponding categorization should ideally inform household-specific responses, rather than relying solely on broad grouping or generalized classifications. However, in NGO-led reconstruction initiatives—such as those involving the Shelter Repair Kit (SRK)—a multi-tiered response system based on levels of damage is often employed for logistical efficiency and to streamline project management. While this approach facilitates rapid implementation, it is important to recognize that the needs and appropriate responses for each household may vary significantly, even within the same damage category.

²⁶⁰ Build Back Better (BBB) is a guiding principle in post-disaster and post-conflict recovery that emphasizes not only restoring what was lost but also enhancing resilience, safety, and sustainability to reduce vulnerability to future hazards. This involves integrating risk reduction measures, improving construction standards, and strengthening institutional and infrastructural systems (United Nations Office for Disaster Risk Reduction, 2015)

Upgrading of local technology

The proposed housing reconstruction process should go beyond the mere physical rebuilding of structures; it must also aim to restore dignity, security, and livelihoods, particularly for rural communities in Tigray, where people's lives are deeply connected to their land and agricultural activities. By integrating community-led initiatives, providing targeted technical assistance, and ensuring coordinated humanitarian interventions, it is possible to implement a scalable and context-appropriate housing reconstruction program effectively. Without such a comprehensive and well-coordinated approach, the current NGO-led small-scale reconstruction efforts underway are likely to take several years to fully restore all damaged homes to safe and resilient conditions.

In this context, local traditional vernacular architectural techniques should be carefully examined and integrated into these reconstruction programs to accelerate overall construction efforts. This could involve upgrading flat mud roofing technology to address issues such as water leakage and the periodic maintenance requirements of mud roofs, while maintaining simplicity. Similarly, the use of stone walling and mud plastering could be adapted in flexible and practical ways, drawing inspiration from contemporary practices such as the Gheralta Lodge and the Nicolas Robinson School, which will be discussed in detail in a later chapter. By combining community-led initiatives with the strategic use of local vernacular technology, reconstruction efforts can be both efficient and culturally appropriate, ensuring that rebuilt housing meets both technical and social needs.

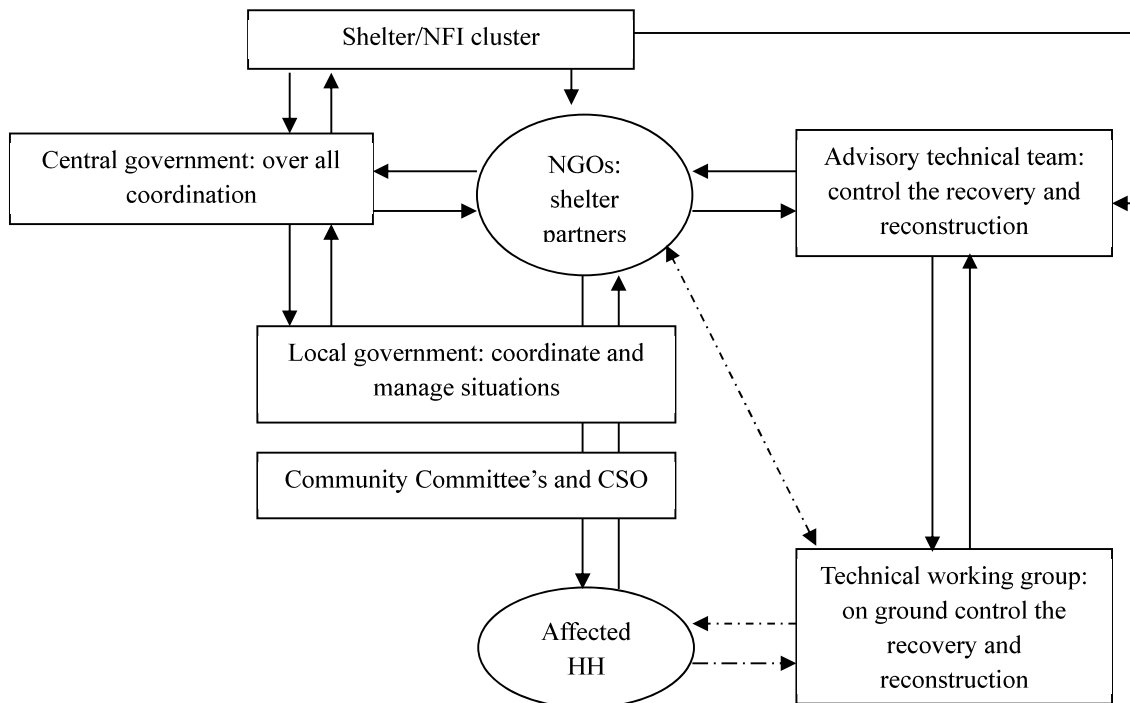


Figure 168: Post-War Housing Reconstruction Models for Rural Areas in Tigray (Source: author, 2025)

Chapter Four: Lessons from spontaneous adaptation and vernacular 'hidmo' architecture

This section focuses on spontaneous adaptation shelter and settlement during humanitarian emergency cycle, emphasizing the central role of vernacular architecture as responsive and context-driven approach to human habitation.

4.1. 'Hidmo' culture and practices

Vernacular architecture: Introduction

Vernacular architecture refers to buildings and environments that emerge from localized traditions, materials, and cultural practices, rather than from formal architectural design or professional planning. It is characterized by its reliance on indigenous knowledge, the use of locally available resources, and an intimate response to environmental, social, and economic contexts. These buildings are often designed and constructed by the inhabitants themselves or local craftspeople, reflecting the values, lifestyles, and climate-specific needs of the community. As Paul Oliver (1997) explains, vernacular architecture is “the architecture of the people, and by the people, but not for the people,” emphasizing its organic evolution within a particular cultural and geographic context. Far from being static or primitive, vernacular architecture is adaptive, efficient, and deeply sustainable, offering valuable insights for contemporary architectural practice in an era of climate and resource challenges (Oliver, 1997).

Bernard Rudofsky (1964) described Vernacular architecture as spontaneous, functional, and rooted in cultural tradition, emphasizing practicality and adaptation to the environment rather than aesthetic or theoretical ideals. He viewed it as an organic response to necessity and local conditions (Rudofsky, 1964). Amos Rapoport (1969) expanded this view by linking house forms to cultural and social factors like family, religion, and status, arguing that “form follows culture” and that buildings are physical expressions of how people live and think (Rapoport, 1969). John Mercer (1975) added an anthropological perspective, showing how traditional builders creatively use local resources to meet both environmental and cultural demands, reinforcing vernacular architecture as a reflection of necessity and tradition (Mercer, 1975) (Oliver, 1997, 2006) offered a comprehensive view, defining vernacular architecture as “of the people, by the people, but not for the people” in a professional sense. He stressed its sustainability, cultural relevance, and evolutionary nature, positioning it as a crucial model for addressing modern architectural and ecological challenges (Glassie, 2000; Oliver, 1997, 2006) emphasized the socio-cultural significance of vernacular buildings, treating them as “cultural texts” that embody the beliefs, identities, and histories of the communities that produce them (Glassie, 2000). Finally, Asquith and Vellinga (2006) argued for the ongoing relevance of

vernacular traditions, especially in sustainable and participatory design. They call for integrating vernacular knowledge into contemporary architectural education and practice (Asquith & Vellinga, 2006). Alexander et al, in a seminal book, *A Pattern Language: Towns, Buildings, Construction*, challenged modernist architectural norms by emphasizing timelessness, organic growth, and human-scale environments (Alexander et al., 1977).

Sustainable architecture is an approach to building design that aims to minimize the negative environmental impacts of construction and operation while maximizing energy efficiency, resource conservation, and occupant well-being. It incorporates principles such as the use of renewable energy, sustainable materials, passive design strategies, and the reduction of carbon emissions across the building's life cycle. Sustainable architecture is a process of designing buildings which are in harmony with the natural features and resources of the environment, and which are healthy for the occupants, reduce pollution and waste, and save energy. This design philosophy not only addresses environmental concerns but also considers economic viability and social equity, forming the foundation of what is often referred to as the triple bottom line: environmental, circular economic, and social sustainability.

Sustainable architecture refers to the practice of designing and constructing buildings that minimize environmental impact while enhancing human well-being and conserving natural resources. It emphasizes energy efficiency, renewable and local materials, waste reduction, and harmony with the surrounding environment. Sustainable architecture also considers a building's full life cycle—from construction to demolition—in order to reduce its ecological footprint. The aim is to meet present needs without compromising future generations. According to the *Whole Building Design Guide*, “sustainable architecture seeks to minimize the negative environmental impact of buildings through improved efficiency and moderation in the use of materials, energy, development space, and the ecosystem at large” (“Sustainable Design”) (WBDG, 2016).

Although some studies have examined the typology and materials used in the vernacular architecture of Tigray, there remains a significant gap in comprehensive research on the *Hidmo* house, the region's distinctive architectural form. Notably, there is a lack of analysis regarding the passive design strategies employed in *Hidmo* architecture. Research on its sustainability features and the integration of traditional design principles into modern architectural practice is particularly scarce and seldom implemented. Therefore, this paper seeks to address these gaps by highlighting the sustainable attributes of *Hidmo* architecture—specifically its passive design elements, community-oriented construction methods, and potential relevance to contemporary architectural practices. Special attention is given to the flat, thick mud roof design, with an emphasis on its life cycle cost and performance by identifying the housing typologies.

4.1.1. Vernacular architecture of Tigray: Hidmo technology

The vernacular architecture of Tigray is primarily known as *Hidmo*, a traditional style most commonly manifested in the construction of *Hidmo* houses. *Hidmo* is a predominant form of a traditional housing common in rural areas and historical urban centers of Tigray (Ethiopia) as well as in the highlands of neighboring country Eritrea. It is distinguished by its distinctive architectural features, including construction of thick stone masonry walls, wooden pillars and lintels and a flat roof that composed of a wooden ceiling covered with a mud. The term ‘*hidmo*’ literally comes from Tigrigna verb ‘*ha’deme*’ which means to cover with soil which reference to the main characteristics of earthen roof of the structure. This traditional building style reflects both the environmental adaptability and cultural heritage of the Tigray people that have sustained it for generations.

The distinctiveness of *Hidmo* construction technology lies in its use of locally available materials such as stone, wood, and earth, combined with indigenous building techniques that are well adapted to the regional climate. As technology is not a universal or fixed concept, but rather socially constructed, its meaning and form vary across cultures—serving specific functional, environmental, and cultural roles within particular communities (Bijker et al., 1987).

Construction of hidmo house (architecture):

The *hidmo* house construction has the following components.

Structural components:

Stone is the primary building material used for both foundations and walls. For the foundation, a particularly hard type of stone—commonly referred to as black stone (typically basalt or granite, which is abundant in most parts of Tigray)—is used with minimal mud mortar (locally called *chika*). For wall construction, stones like trachyte and sandstone are used, combined with a more substantial amount of *chika* mortar. The walls, typically 0.5 to 0.6 meters thick, function as structural elements that support the heavy dead load of the flat roof. This roof is made of wooden beams and an average of 0.2 meters of compacted mud.

Wooden pillars, traditionally called *andi* or *amdi*, are used to support the beams that carry the load of the flat mud roof. Depending on the size of the *hidmo* house, the number of wooden pillars ranges from one to three. These pillars are placed throughout the house without strict regard for symmetry. Their spacing appears to be determined more by the length and size of the beams used to support the roof than by design principles (Gebremedhin, 1971). Wood is also used for lintels, which support the load above openings such as doors and windows. Additionally, locking systems are crafted from wooden elements. The wooden pillars, lintels, and locking systems (*meshegor*) are typically made from locally available trees such as olive, *duma*, *Oka africana*, *Juniperus procera*, or sometimes *Eucalyptus*.

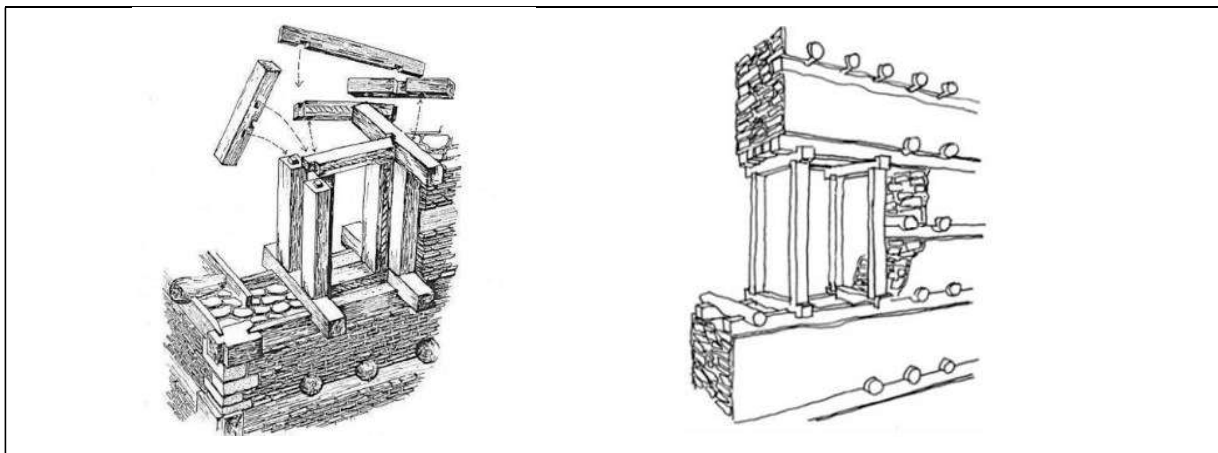
Construction method:

Wall construction in traditional Tigray architecture features a variety of systems. One method involves placing large, well-dressed stones at the corners and using smaller stones elsewhere—an approach common in the old Axum tradition and central Tigray (Gebremedhin, 1971). Another system consists of laying courses of similarly sized masonry joined with *chika* mortar, which is more typical in the Enderta area. A third method uses a mix of roughly dressed stones and small stones combined with mud mortar, often finished with internal plastering. *Chika* is a traditional building material made from selected local earth mixed with water, used between stone courses to bind them as it hardens. When applied for plastering or mortar, *chika* is commonly reinforced with straw, hay, and animal dung to improve its strength and cohesion. One notable yet less commonly employed in common house of a farmer is a traditional wall construction technique known in Tigray as "monkey head construction." This indigenous method is distinctive to the region and derives its name from the use of protruding, rounded wooden cross-members (dowels)—resembling "monkey heads"—which function to bind horizontal wooden layers between courses of stone within a wall. The technique was developed as a structural solution to enhance wall strength and stability, particularly in areas requiring frequent support. Long squared timbers and short round crosspieces are used in tandem to secure the masonry, making efficient use of locally available materials such as stone, wood, and mud. Historically, this construction method was prevalent during the Axumite period (1st to 7th century AD), primarily in elite residential buildings. With the advent of Christianity, the technique was adopted by the church, becoming a hallmark of ecclesiastical architecture. A prominent and well-preserved example of this construction style is the monastery of Debre Damo, which continues to serve as a living representation of Axumite architectural heritage unique to the Tigray region. The construction system is also making it Hidmo houses earthquake resilient.²⁶¹

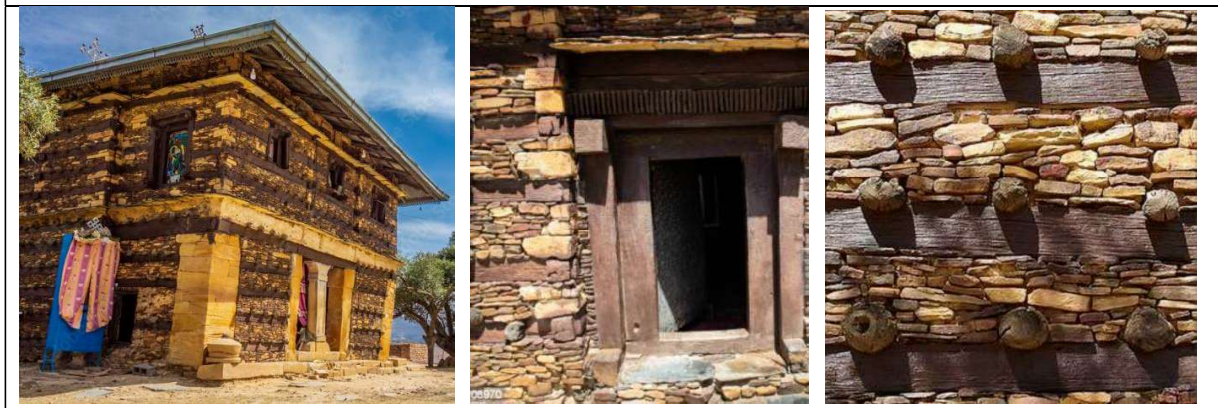
According to discussions with key informants—including professional architects and local residents—several reasons explain why monkey-head construction is rarely practiced by ordinary or non-elite groups. These include: (i) the complexity of the technique, which requires additional squared timber and the expertise of a master mason; (ii) the extended time required to complete the construction; and (iii) cultural considerations, such as the association of the method with religious architecture, leading to reluctance in adopting it for secular buildings. Phillipson (2000, 2004) also observed that a primary distinction between elite and non-elite structures lies in the use of wood. Non-elite houses generally lack wooden elements in their walls due to the cost and limited availability of timber. In contrast, wood is prominently featured in elite *hidmo* house walls, often visible from the exterior, creating a stark material and visual contrast with non-elite dwellings (Phillipson, 2000, 2004).

²⁶¹ The monkey head construction system is typically designed to resist earthquakes, with loads distributed through a separated framework composed of longitudinal square timbers and intersecting circular timbers.

The construction of a *hidmo* house requires a substantial amount of wood and stone. A large number of trees—typically between 50 and 100—are felled for a single structure. Wood is used not only for major components such as pillars, lintels, ceilings, doors, and locking systems, but also for smaller elements. Tree branches are used as intermediate layers in the roof, placed between the wooden ceiling and the mud layer, serving as filler material. This layer is often topped with a course of stone and slate, which functions as an eave. The *hidmo* roof not only consumes a significant quantity of wood and branches during initial construction but also demands additional timber during routine and periodic maintenance, as damaged poles and branches must be replaced regularly during preparation for rainy season.



Details of Monkey head construction techniques



Debre Damo monastery

Figure 169: Monkey head construction technique in Debre damo monastery, Tigray (Source: social media)

Wattle and daub:

The *hidmo* house ceiling and roof utilize traditional wattle and daub construction methods. Wattle and daub refer to a building technique in which a woven lattice of wooden strips (wattle) is coated with a sticky material (daub), typically made from a mixture of earth, clay, straw, and animal dung. In the case of *hidmo* houses, the ceiling exemplifies this method through the use of hand-carved wooden elements arranged in

geometric patterns—often resembling a fishbone motif—and supported by a framework that includes local materials. A bamboo-like grass known as *shembeko* is also used to form part of the ceiling layer. This wattle framework supports a dense layer of tree branches, which are essential for bearing the weight of the thick mud roof and serve as structural fillers. The combined use of organic materials and skilled craftsmanship makes the *hidmo* roof both resilient and environmentally adaptive.



Figure 170: Typical *Hidmo* ceiling in Aynalem, Mekelle (Source: Patassini D., 2023)

Building components in *hidmo* architecture:

The *hidmo* integrates key structural, enclosure, and interior features designed for both stability, durability aesthetic purposes and cultural expression.

- **Structural components of *hidmo***

Hidmo construction is fundamentally based on the combined use of stone and wood:

Foundation systems typically utilize large, robust stones such as granite or basalt, laid with minimal *chika* (mud) mortar. These foundations ensure load distribution and structural stability.

Main and secondary beams, known respectively as *gadem* and *serawit*, are formed from long timber logs that provide essential roof support.

Vertical posts (*andi*) are placed within the interior to support the weight of the flat earthen roof. The number of posts depends on the overall span and size of the dwelling.

Thick masonry walls, ranging from 0.5 to 0.6 meters in width, are assembled from a mix of shaped and unshaped stones, bonded together with *chika* mortar. These walls are essential for both structural support and thermal insulation.

Wooden lintels are installed above doors and windows to carry the load above the openings and help prevent structural degradation.

- **Enclosure (non-structural) components**

The enclosure elements of the *hidmo* highlight the efficient and sustainable use of organic building materials:

Roofing follows a traditional wattle and daub technique, using layers of tree branches and a bamboo-like grass called *shembeko* placed above a wooden ceiling. This is then covered with a thick (approximately 20 cm) mud layer, topped with stone or slate to form a protective eave.

Wall surfaces are plastered internally using enhanced *chika*—a blend of soil, straw, and organic matter—to create a smooth, durable finish.

Doors and windows are typically constructed from solid wood and often include handcrafted locking mechanisms. Openings are kept small to help regulate indoor temperatures and enhance security.

- **Interior (non-structural) components**

The interior organization of the *hidmo* supports everyday life while also fulfilling social and symbolic functions:

Medeb refers to an integrated raised platform used for sitting and sleeping, commonly built into the room’s wall system.

Nichi are built-in niches or alcoves within the walls used to store household or sacred items.

Closets are either carved directly into the wall or added as separate enclosed spaces, primarily for storing clothing or food supplies.

Flooring is crafted from a compacted mixture of soil and animal dung, which offers both insulation and long-lasting surface integrity.

Table 40: *Hidmo* house and building components

Traditional <i>Hidmo</i> and its building components		
1. Structural components	2. Enclosers	3. Elements of the interior
<ul style="list-style-type: none"> • Foundations-black stone • Logs as a main beam (<i>gadem</i>) and sub beam (<i>seravit</i>) • Vertical post (<i>andi</i>) • Walling (thick stone wall) • Lintel (wooden) 	<ul style="list-style-type: none"> • Flooring-mud and animal dung • Walling-stone • Roofing-mud • Door-wood • Window-wood 	<ul style="list-style-type: none"> • ‘Medeb’- sleeping and sitting • Nichi • Closet

Hidmo house typology

The *Hidmo* house exhibits various typologies depending on geographic location, the availability and type of building materials (primarily stone), construction techniques, socio-economic status, and microclimatic conditions. Its layout may be rectangular (rectilinear), circular, or a hybrid of both forms. *Hidmo* structures can be single or multi-story and may consist of a single building or multiple clustered buildings, based on the factors discussed and mentioned above.

Based on an extensive literature review, field visits to various parts of Tigray for selected case studies (multiple case studies), and key informant interviews (KII) with senior citizens (dwellers), builders and architects, a consistent pattern has been identified to support the development of a typology for *Hidmo* house architecture. By analyzing architectural design elements and principles—such as shape, form, and space—and considering the factors mentioned above, the following typologies have established.

In agreement with (Gebremedhin, 1971), a pioneer writer on vernacular architecture in Tigray in the book *Some traditional types of housing in Ethiopia, In P. Olive (Ed.), Shelter in Africa, pp.106-123*, Tigray house may be classified in two distinct topologies: farmer's house (the ordinary *hidmo* house) and chief's house. Nearly half a century after (Gebremedhin, 1971) seminal work, there remains a limited body of literature and academic studies on the classification and typology of *Hidmo* houses in Tigray. Following the regime and political ideology changes in 1991, Ethiopia has significantly changed its economy (from a centralized to mixed and market one) with a great impact on the traditional way of life, on building and construction activities and the urbanization patterns. In many rural areas there has been little change of housing conditions and style.

According Bekele 2019 study study on *hidmo* stone architecture tried to improve the typology classification based on extensive field visits. (J. S. Bekele, 2019) *hidmo* typology classification includes:

1. The typical *hidmo* house called Tigray farmer house which has two different varieties such as *Merebae* (pitched shed roof type) and *Sekela* (attic floor type)
2. Tigray chief house and
3. *Agudo (gojjo)* a special typology with its circular shape in its plan.

Hidmo houses in urban settlements (such as the old *kebele* 14 in Mekelle²⁶²) are in fact a hybrid design solution that combines the rural type with the chief house. According to the book *Urban Land Management in Ethiopia: The Case of Mekelle* by Igor Jogan and Domenico Patassini (1996), seven distinct residential building typologies were identified and analyzed within the urban context of Mekelle. Three key criteria are considered: construction cost, age of the building, and the construction technology employed (Jogan & Patassini, 1996).

- simple *chika*²⁶³ house - a single storey building with small dimension made of timber wall filled with mud or *chika* and traditionally the roof consists of timber beams over which various layers of *chika* are laid. Of late the use of CGI sheet is also very common.
- two rooms *chika* house – similar with one storey *chika* house

²⁶² Kebele 14 has undergone urban renewal and redevelopment, resulting in the damage of some traditional houses and elements of vernacular urbanism, including the alteration of its narrow alleyways, as well as changes in livelihoods and the relocation of residents.

²⁶³ *Chika* refers to both a construction material and a building technique, traditionally used in the poorer quarters of towns, and is also commonly found in the southern parts of Tigray.

- *hidmo* house – a single or double storey with a wall in cleaved, undressed stone which is laid unbonded, imparting a peculiar but pleasant appearance to this typology. The second storey has a lower floor ceiling and the roof is normally in *chika* supported by timber beams and panels, the later set in a herringbone pattern (a motif also used in more recent typologies).
- traditional stone wall house of Tigray region – a rectangular or circular, of one or two stories a large farm house with access flat roof which can be used for drying and keeping fodder or vegetables and used as a vantage point for the household dog.
- two-store stone wall house – distinguishes itself from other *hidmo* particularly in the use of dressed stone for building its wall, which are occasionally pointed as well. This type can also a single storey. The second storey is, unlike the *hidmo*, of equal floor to ceiling height to the first. The floors are in beaten earth or paved with stone slabs and roofing is in sheet metal.
- development of stone wall house – this has advanced compact spatial organization like a modern villa plan type with a separate living, kitchen and bedroom. The wall is typically stone and CGI sheet roofing.
- stone wall house block – a block of row houses, typically constructed from stone, is arranged in a linear configuration. The walls are built using local stone, while the roofs are commonly covered with corrugated galvanized iron (CGI) sheets.

Tigray Farmer’s House (typical *Hidmo*)

This type of *Hidmo* house is widely found in scattered rural settlements as well as in older urban areas across Tigray. It includes two main subtypes: *Merebae*, characterized by a pitched shed roof, and *Sekela*, which features an attic floor. In the eastern part of the region, particularly around the town of Adigrat, these homes are often constructed into the steep slopes of hills or mountains. Due to their integration with the natural landscape and the use of locally sourced materials, they are often difficult to detect—especially from a distance—as they blend seamlessly into their surroundings.

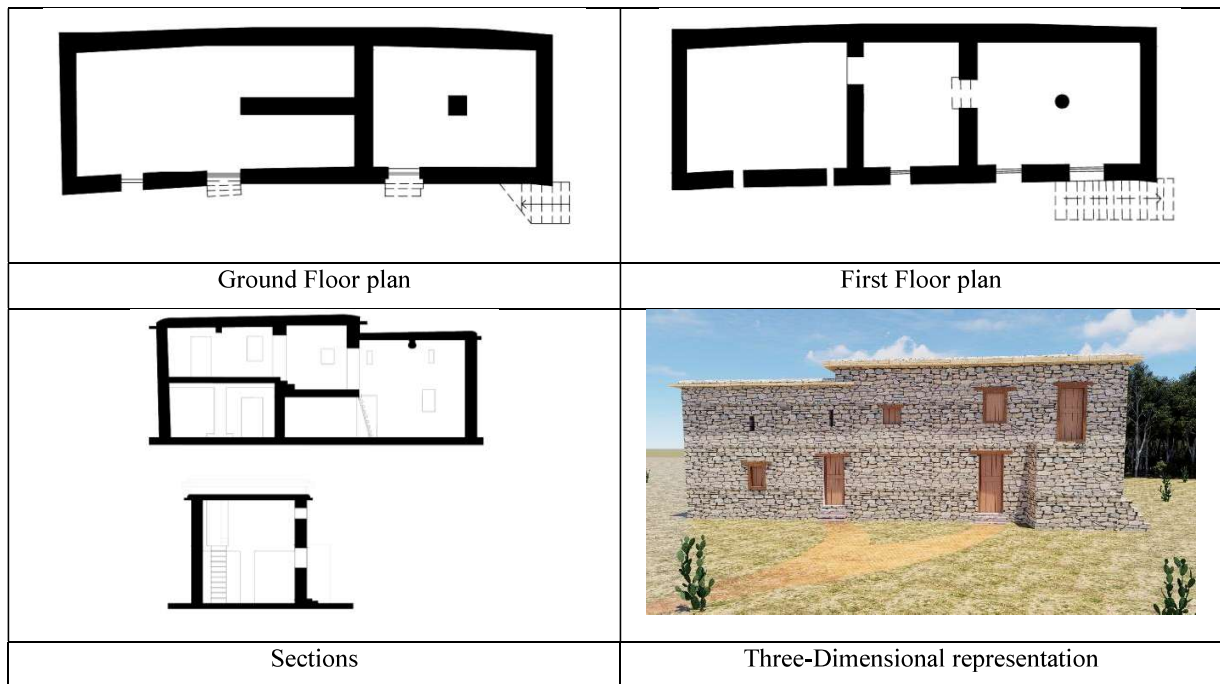


Figure 171: Two-story Hidmo house of a farmer in Tigray (illustration by the author, February 2026)

The other variety of *Hidmo* house, found throughout Tigray, differs from the first type in that it is clearly visible, even from a distance. Despite this distinction, both types share flat roofs constructed from compacted earth supported by a system of round wooden beams. These houses typically feature well-defined interior partitions. In the first variety (the farmer's house), partitions are often created by a series of interconnected grain stores (*kofo*). In contrast, the second variety utilizes stone masonry walls to separate specific functional areas within the house. According to (Gebremedhin, 1971), two essential rooms are present in both types: the *medri biet*, a multipurpose space used for living and sleeping, and the *wushate*, designated for cooking and storage. Additional rooms may be added depending on factors such as family size, economic status, and social standing.



Figure 172: Hidmo farmer house around Adigrat, Eastern Tigray, showing a partially buried structure designed in harmony with its surrounding site (Source: author 2024)

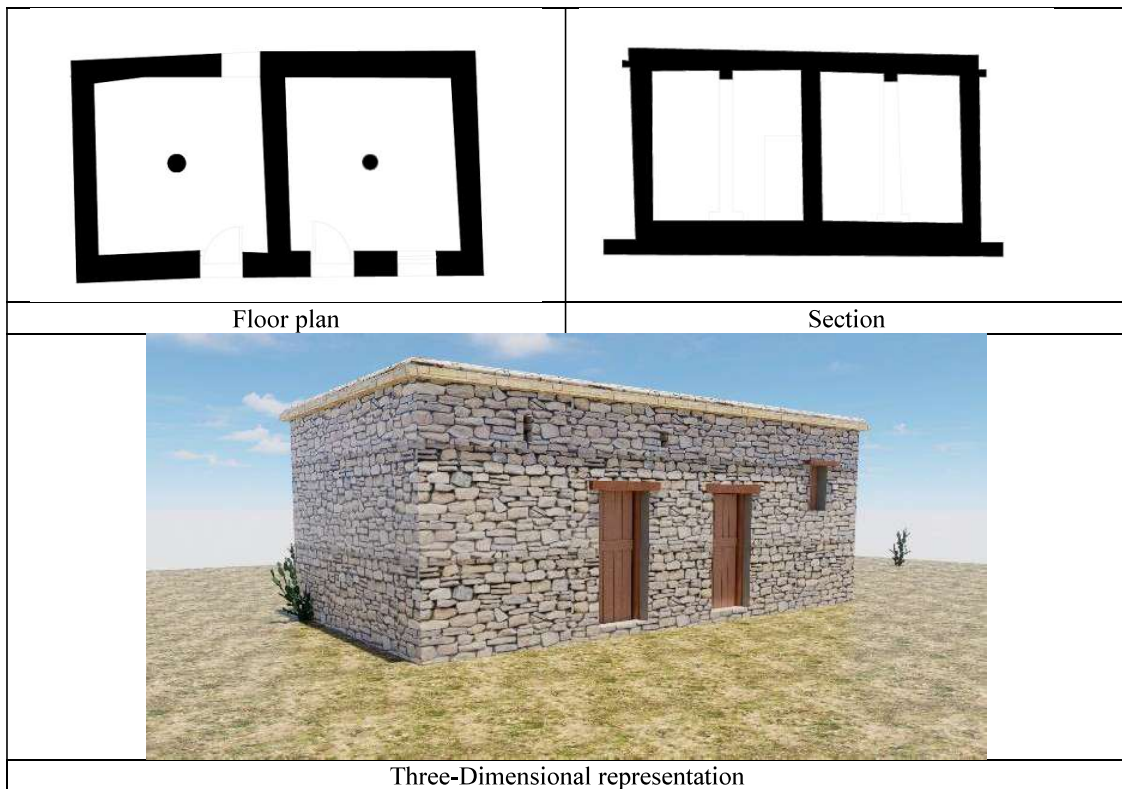


Figure 173: One-story hidmo house of a farmer in Tigray (illustration by the author, February 2026)

Tigray chief house

Two-story circular stone houses are found in the Axum and Adwa areas of central Tigray (Gebremedhin, 1971). These structures, known as Tigray chief houses, were typically built by the affluent, as their construction required a significant investment of resources. The large quantity of stone and timber needed for walling and roofing, along with intricate architectural details, made them financially inaccessible to the

majority. Historically, these houses served as residences for governors (*chikashum*), high-ranking clergy, and military elites in the Axum area—an epicenter of Ethiopian civilization. The Tigray chief house represents elite architecture, influenced by ancient Axumite design, and was rarely adopted by common people during the Axumite period (1st to 7th century AD) and the Middle Ages (8th to 16th century AD). The form and spatial layout of these traditional houses have changed very little over time and were once common, particularly when forest resources were still plentiful in the region. A significant portion of the timber used in their construction was often lost in the process of carving components such as windows, doors, ceilings, floors, and locking systems. According to Naigzy, construction of this type of house began to decline in the last century (Gebremedhin, 1971). In recent years, however, modest two-story houses have been constructed by farmers across various parts of Tigray. Variations of the two-story circular house are still found in and around the Alaje and Bora areas in southern Tigray, though traditional roofs are now frequently replaced with corrugated galvanized iron (CGI) sheets.

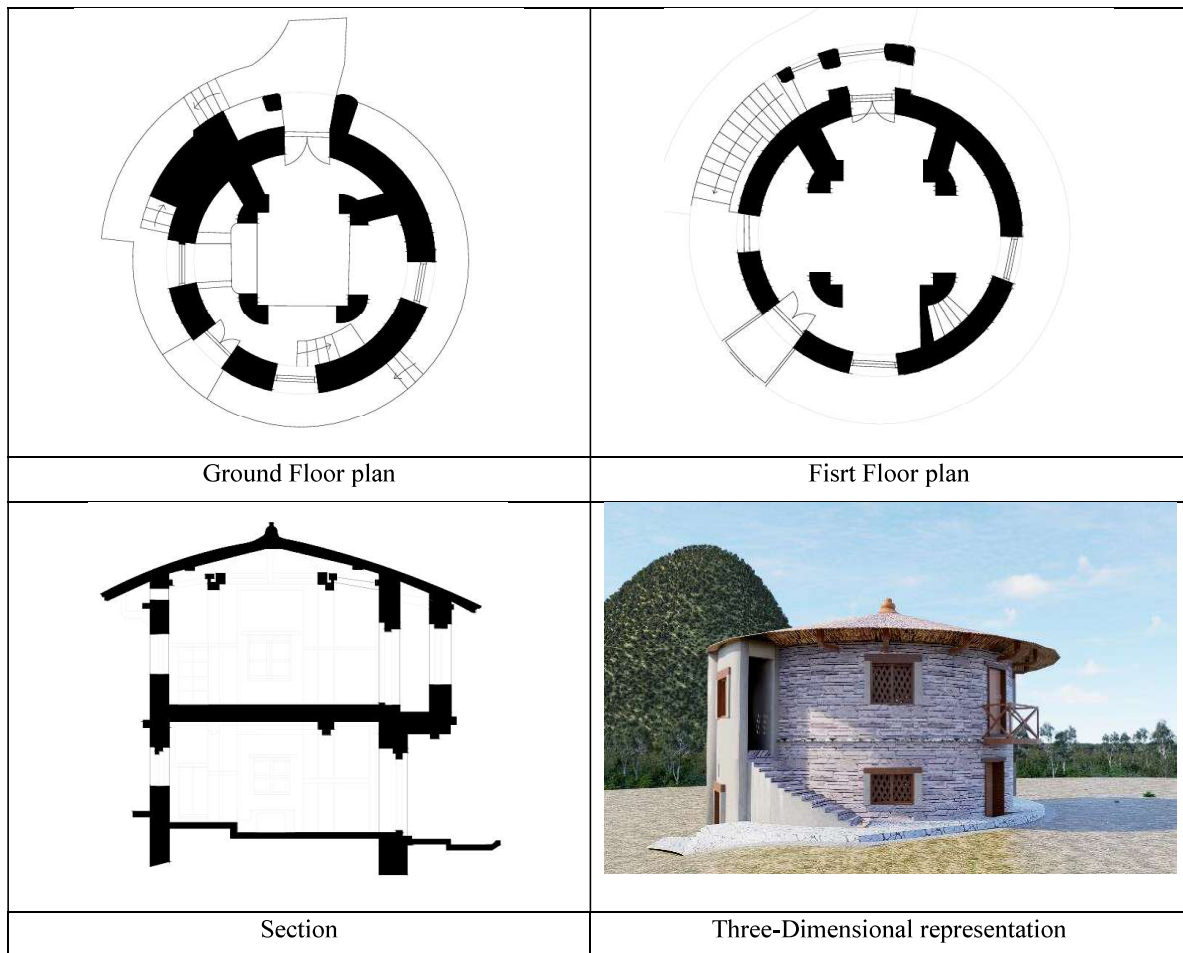


Figure 174: Tigray Chief house (illustration by the author, February 2026)

Some of the common features of Tigray chief house includes:

- a) Surface quality and treatment: the exterior surface could have rough texture of natural stone or be whitewashed massing appearance.
- b) Shape: these house typically have a tall, cylindrical two-story form, topped with a wide, nearly flat cone-shaped roof with extending eaves. A human scale floor higher as well as door and window create space feel comfortable, accessible, and harmonious to users. The two-storey house has on average 5.0-5.5-meter height.
- c) Spatial concepts: space seems to be very central in nature and the interior lay out tends to be centrally oriented, reflecting a strong sense of spatial hierarchy.
- d) Climate adaptation: the arid to semi-arid climate has forced to use thick stone masonry walls construction system that serves as thermal mass regulating the indoor temperature.
- e) Building materials: black stone such as basalt is found abundantly in Tigray region is used for foundations due to their durability and water resistance. Trachyte, a soft greyish rock and sandstone are used for main wall. Mud (*chika*) serves as the primary mortar to bind the stones.
- f) Timber elements: wooden components including windows, doors, lintels, floors and ceilings are carved out of wood and often represent the most cost part of the house construction.
- g) Construction techniques: foundations are laid in generously sized trenches filled with non-absorbent basalt. The walls are built using simple masonry methods, with horizontal stone ledges (shelves) incorporated between floors to divert rainwater and protect the *chika* mortar from erosion.



Figure 175: Variations of hidmo housing with adapted roof materials in Bora, South Tigray (Source: author, 2024)



Figure 176: Two story hidmo house called 'Debri' in urban area, Mekelle (Source: Patassini D., 2023)



Figure 177: Details of hidmo house in urban area, Mekelle (Source: Patassini D., 2023)

Agudo (gojjo)

Agudo in some area called as *gojjo*, is a less commonly practiced variation of the *Hidmo* house in Tigray, distinguished by several key differences from other two typologies. These were built by poor farmers as core house and in some case in prestigious family as extended house serve as kitchen.

Shape and structure: typical *Agudo* house features a circular floor plan, similar to the Tigray chief's house, and has an approximate diameter of three meters. Unlike the more common *Hidmo* (Tigray farmer's house), which has a flat mud roof and thick stone walls, the *Agudo* is topped with a conical thatched roof.

Materials: while the *Agudo*, like both the farmer and chief houses, uses stone for wall construction, it differs in its roofing material, utilizing thatch instead of flat mud.

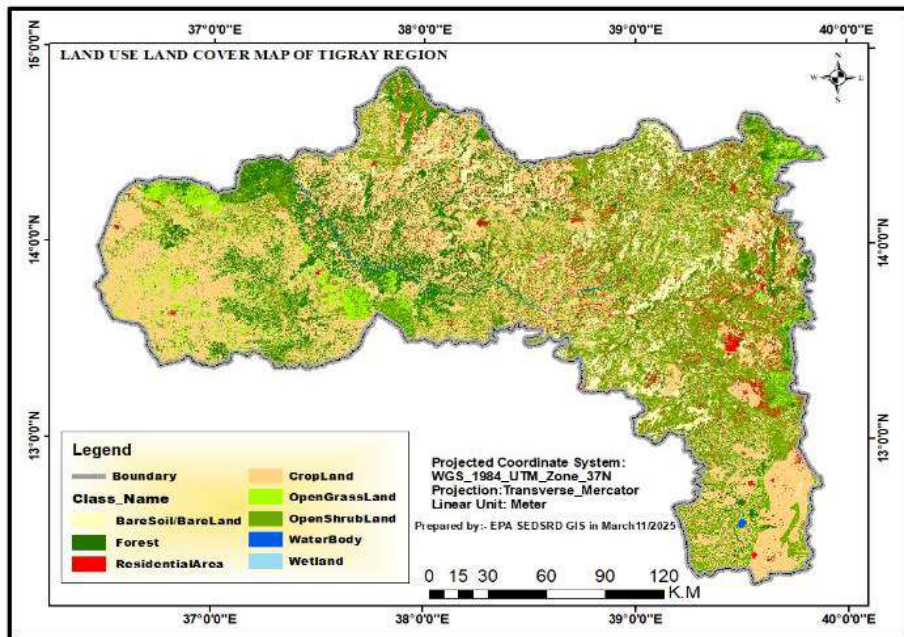
Usage: *Agudo* is generally regarded as a modest type of dwelling, typically inhabited by common people, particularly those from economically disadvantaged groups—similar in function to the Tigrayan farmer's house.

Spatial arrangement: compared to the typical farmer and chief houses, the *Agudo* contains fewer rooms. However, like the chief house, its interior organization is strongly centered around a central space.

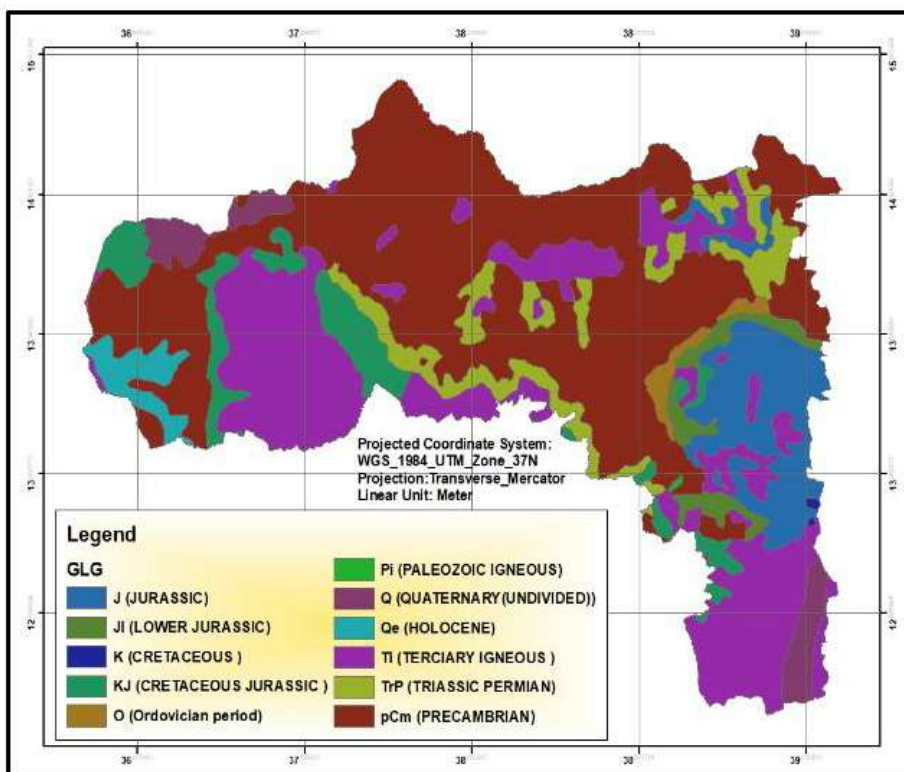
According to Lyons (2007), a distinct architectural variant of the *Agudo* (*Gojjo*) dwelling is known as *Sakala*, which was commonly associated with the noble classes in the twentieth century, particularly in the Enderta area surrounding Mekelle, the capital of Tigray. *Sakala* structures are characterized by their large,

circular floor plans and prominent conical thatched roofs, constructed using masonry walls. These buildings were traditionally associated with social prestige and were often built by influential men, serving as symbols of status and authority within the community (Lyons, 2007). Oral testimonies from elderly residents confirm that this particular house type is no longer in practice, primarily due to the growing scarcity of essential roofing materials such as timber and thatch. The disappearance of *Sakala* architecture reflects broader environmental and socio-economic shifts, including deforestation, material shortages, and changing construction preferences, which have collectively contributed to the erosion of vernacular architectural diversity in the region.

The vernacular typologies discussed and their variations highlight a close relationship between technology, environment, deforestation processes and climate. Vernacular architecture, developed through generations of empirical knowledge and cultural practice, offers inherently sustainable design strategies that align with the local environmental, economic, and social contexts. It is characterized by the use of locally available materials, passive environmental control, and context-responsive spatial configurations, making it highly relevant in contemporary discussion on sustainable architecture (Asquith & Vellinga, 2006; Oliver, 2006). *Hidmo* house key feature is use of readily available natural and local resources. The stone, soil, timber and water are readily available materials with low embodied energy, making them environmentally sustainable choices. The thick load-bearing stone wall with mud mortar (*0.5-0.6 cm thick*), serve as thermal mass in the semi-arid climate of Tigray. These walls effectively regulate indoor temperature by absorbing heat during day and releasing it at night. The thick stone wall protects the interior from dry season (winter-*bega*) harsh sun and provide protection (insulation) against the cold and dampness during rainy season (traditionally called *kiremt*). Sandstone, basalt and limestone stone are the readily available and used stone type in *hidmo* wall construction. The thick load-bearing *hidmo* wall lay on a black basalt foundation. Black basalt foundation is a dense igneous rock a highly valued for its low porosity, which significantly limits water absorption and prevents moisture-related deterioration such as capillary rise or freeze-thaw damage. Thus, the use of black basalt not only enhance the durability of the structure but also aligns with principles of sustainable and climate-responsive design. Generally, the local quarries for both foundation and wall stone are near villages which promote sustainability building practices and reduce transportation cost as well as construction costs.



a. Land Use Land Cover (LULC)



b. Geological and minerals

Figure 178: Environmental and Geological Resource Mapping of Tigray Region²⁶⁴

²⁶⁴ <https://www.epa.gov.et/images/PDF/NR%20for%20Tigray%20Region.pdf>

The courtyard, known as *mereba* or *dembe*, plays a vital role in the *Hidmo* house as a void architectural element that captures abundant sunlight and enhances natural air circulation to adjacent enclosed and semi-enclosed spaces. While not present in the core form of every *Hidmo*, the courtyard is a common feature in most variants and is typically centrally located, helping to maintain a balanced open-to-solid spatial ratio. The size and presence of the courtyard often determine the overall scale of the *Hidmo* dwelling. Functionally, it serves as a source of passive cooling, significantly improving thermal comfort during the dry season. The courtyard floor is usually finished with natural soil or earth, a material that absorbs rather than reflects solar radiation, thereby minimizing heat gain in surrounding living areas.



Figure 179: Stone quarries in Adigrat area, Eastern Tigray, showing local extraction sites (Source: author, 2024)

The traditional flat mud roof of the *Hidmo* house serves multiple functions: it protects the interior from direct sunlight and rainwater, while also acting as thermal mass and providing insulation. These roofs are primarily constructed using a mixture of selected soil and water (mud), along with tree branches, timber beams, bamboo (in some cases), stone, and slate (flagstone). A single course of stone is often laid along the perimeter of the flat roof to contain the mud and support the overhanging slate. The slate functions as an eave, helping to shield the walls from rainwater infiltration. However, maintaining traditional flat mud roofs has become increasingly difficult due to the scarcity of heavy timber required for the primary structural

supports and roofing members. Timber, which is also used for doors and window frames in *Hidmo* houses, is becoming less accessible. As a result, flat mud roofs are being replaced with conventional building material called corrugated galvanized iron (CGI) sheets, and wooden doors are often substituted with metal. This shift has brought about changes not only in materials, but also in the overall roofing system and slope design. While CGI roofs offer shade, they lack the thermal insulation properties of traditional mud roofs. Moreover, their light weight and slopes make them unsuitable for multifunctional use, such as drying agricultural produce—a function commonly supported by the flat mud roofs. CGI sheets, being lightweight, are typically supported using simple eucalyptus purlin and rafters, reflecting a significant departure from the traditional construction methods.

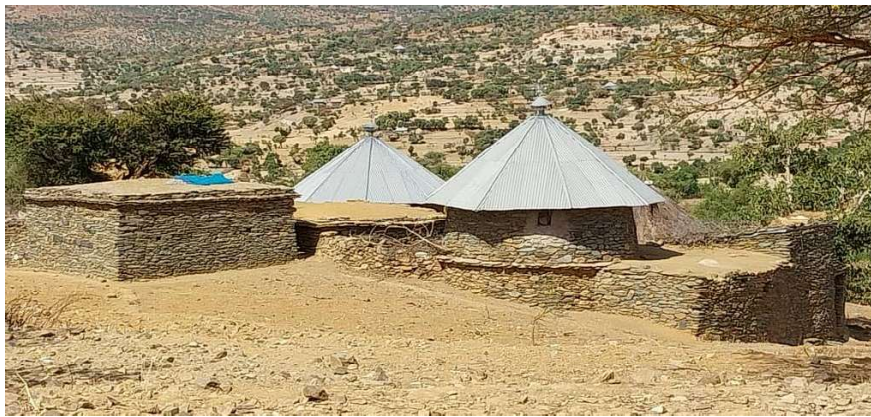


Figure 180: Hidmo house and adaptation of roofing in Tembian area (Source: author, 2025)



Figure 181 : Post-war reconstruction of a Hidmo house with a new roofing style in Hawzen area (Source: author, 2024)

Small, high-level openings and windows—typically located in the attic level of the *Hidmo* house—are uniformly distributed and feature either rectangular or triangular geometric shapes. These elements contribute to natural ventilation by allowing air circulation without introducing uncomfortable drafts. They also serve as sources of controlled daylight, enhancing interior illumination. The door to the main *Hidmo* house is human-scaled, constructed from thick rectangular wooden elements and often reinforced with metal percussion details. The combination of openings, windows, and doors enhances internal spatial comfort by harnessing and improving natural ventilation, partly through the application of the venturi effect. Although the flat roof of the *Hidmo* does not include a venturi-style design, natural airflow is still facilitated through the strategic placement of doors, windows, and openings. The Venturi Effect is used intuitively in traditional architecture to increase airflow and cool buildings naturally by shaping spaces and openings so that air speeds up as it moves through narrower passages. This cooling airflow helps reduce indoor temperatures, especially in hot climates. The main entrance door enables the inflow of cooler air at a lower level, while the small, elevated windows and openings allow warmer air to rise and exit the building. This configuration effectively supports both the stack effect and cross-ventilation, passive design strategies that increase indoor air circulation and improve thermal comfort. Stack ventilation relies on temperature differences to drive natural airflow. Passive design strategies in *Hidmo* architecture also encompass thoughtful building orientation, which aims to enhance natural ventilation, optimize daylighting, and provide effective solar shading. Cultural and religious traditions further influence the spatial layout. For example, the main entrance is typically oriented toward the east or north, while the traditional mud-constructed bed (*medeb*) is usually positioned with its longer side facing east–west—reflecting symbolic associations rooted in local mythologies related to the sunrise with the east.

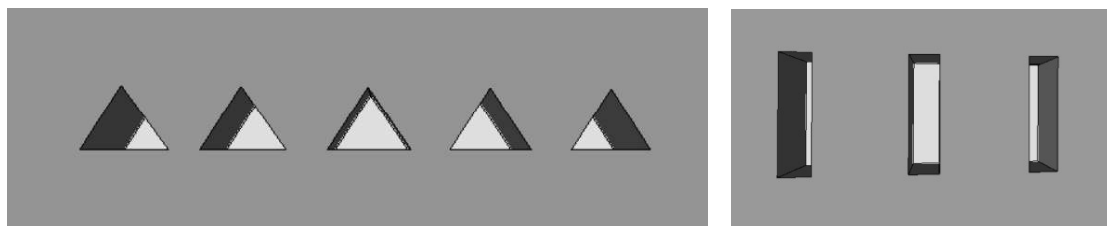


Figure 182: Varieties of small opening in a *hidmo* house (illustration by the author, February 2026)

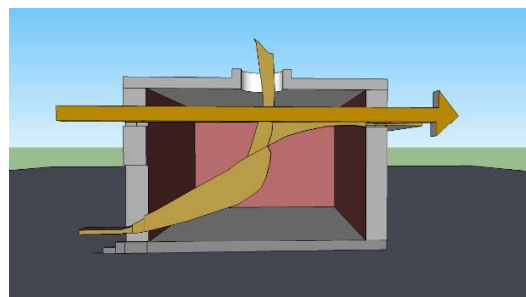


Figure 183: Venturi and stack effects in typical *hidmo* house (illustration by the author, February 2026)

The floor finish in *Hidmo* houses is traditionally created using a hand-applied plaster made from carefully selected mud, often combined with animal dung. This technique, primarily practiced by women, embodies both practical benefits and cultural significance. Functionally, the mixture is affordable, locally available, and offers natural insulation as well as antibacterial properties—enhancing both hygiene and thermal comfort within the home. Culturally, floor plastering is a gendered and communal tradition passed down through generations. It symbolizes care, domestic responsibility, and a deep-rooted connection to place, material heritage, and identity. Similarly, the thick stone walls of the *Hidmo* are coated with a locally prepared plaster composed of mud, straw, and animal dung. This base layer is typically finished with a natural lime wash, which not only enhances the visual appearance of the walls but also protects them from weathering. The lime wash contributes to the wall’s breathability, helping to regulate indoor humidity and creating a healthier living environment.

The traditional sustainable construction of *hidmo* house, which is renowned for their durability and cultural significance across generations, is increasingly challenged in its resilient nature by the growing adoption of standardized land plotting and conventional building materials such as corrugated galvanized iron (CGI), steel reinforcement, and Portland cement. In recent years, the proliferation of CGI manufacturing facilities and the presence of a cement factory in Mekelle have made these materials more accessible, even in remote rural areas. Additionally, the availability of skilled carpenters and construction laborers has facilitated the adoption of modern construction techniques, including reinforced concrete structures and new roofing systems. However, the growing demand for conventional materials—driven by rapid urbanization and a nationwide construction boom—has resulted in rising costs and frequent shortages, particularly for cement and steel. These developments have created significant financial barriers for many low-income rural households, slowing the shift toward modern building methods in more remote hamlets. In rural villages near urban centers, traditional elements of *Hidmo* architecture—such as thick stone walls and flat mud roofs—are increasingly being replaced by hollow concrete blocks (HCB) and CGI roofing. Wooden doors are often substituted with dismal metal sheets. It is now common to see hybrid structures that blend traditional *Hidmo* features with modern construction materials, particularly in villages across Tigray where transitional forms reflect both economic pressures and changing material preferences.

Another significant factor contributing to the growing use and adoption of corrugated galvanized iron (CGI) roofing in *Hidmo* houses is the maintenance and renovation burden associated with traditional flat earthen roofs. These roofs require frequent upkeep, particularly the seasonal renewal of the mud layer prior to the onset of the rainy season. Typically, in preparation for rains that begin in June, residents climb onto the roof to patch cracks and apply fresh layers of mud or soil to prevent water infiltration and ceiling leakage. This annual maintenance routine—both time-consuming and labor-intensive—has led many homeowners to opt for more durable, low-maintenance alternatives such as CGI sheets. While CGI offers practical

advantages in terms of ease and longevity, it lacks the environmental sustainability and thermal performance of traditional roofing methods.

Social perceptions among residents have also emerged as a significant challenge to the continuity of construction of *Hidmo* houses. Increasingly, villagers view traditional flat-roofed *Hidmo* dwellings as outdated and socially inferior. In contrast, the use of corrugated galvanized iron (CGI) roofing is often seen as a symbol of modernity and upward social mobility. This shift in values is reinforced by regional and national economic growth, alongside rising household incomes, which have improved both the affordability and desirability of modern construction materials. Additionally, the expansion of road infrastructure and greater access to information and communication technologies—fueled by globalization—have accelerated the adoption and spread of conventional, less sustainable building practices. As a result, traditional *Hidmo* architecture is increasingly being replaced or marginalized in favor of materials and forms perceived as more modern and prestigious.

In rural households across Tigray, the primary source of energy remains biomass-based materials, namely firewood, animal dung, and crop residues. These resources are heavily relied upon to meet daily household energy demands, especially in areas where access to electricity is limited or nonexistent. While biomass plays a critical role as an accessible energy source, its prolonged use has led to serious environmental issues such as deforestation, land degradation, and indoor air pollution. In response to these challenges, there is growing interest in promoting cleaner and more sustainable energy alternatives. In particular, efforts are focusing on harnessing the region's substantial renewable energy potential—most notably its abundant solar radiation, which is available nearly year-round, and the high wind energy prevalence.

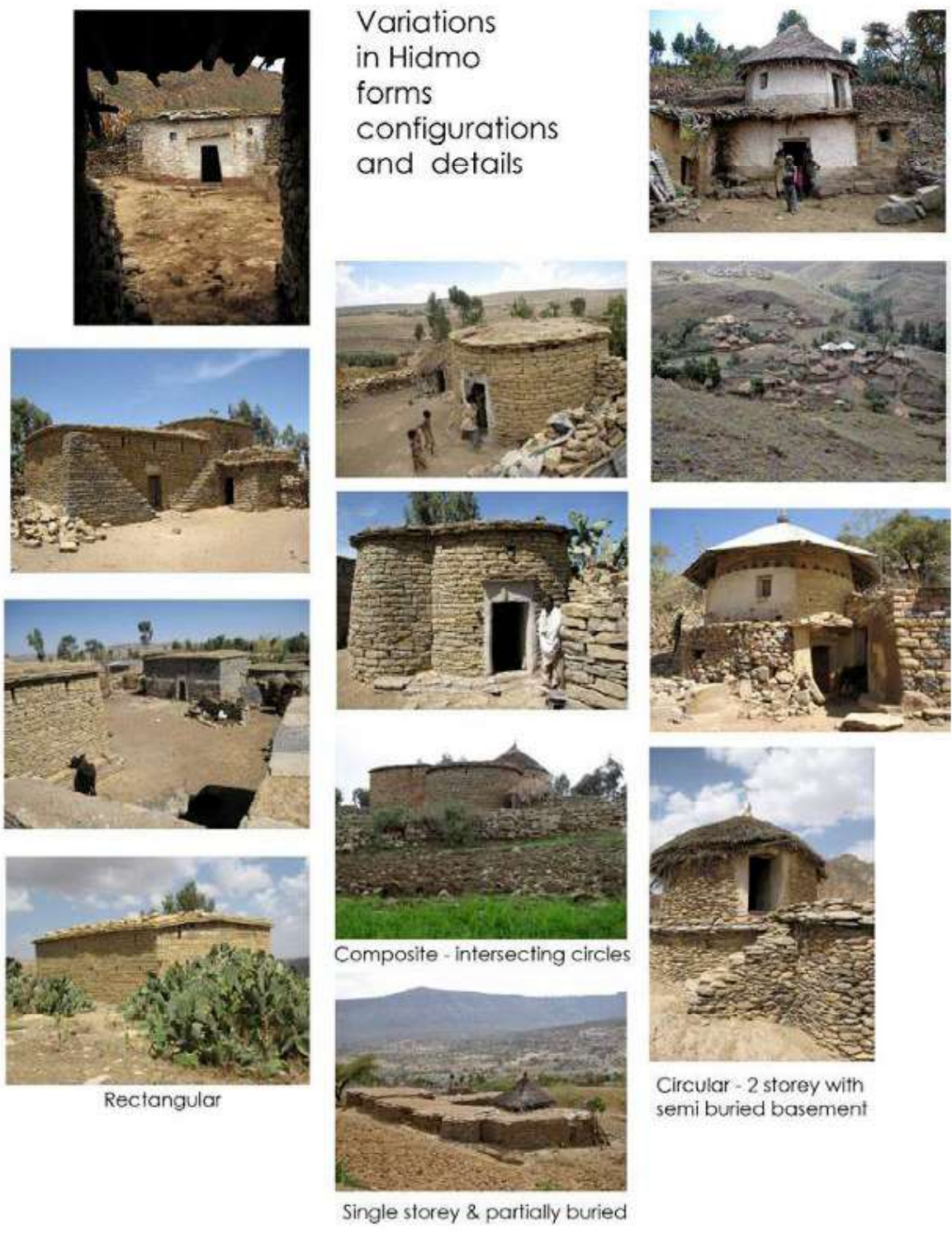


Figure 184: Pictorial Hidmo variation (Source: Aranha, 2010)

The urban *Hidmo* is rapidly disappearing as a result of urban renewal, development pressures, and socio-economic disruptions—occurring at a more accelerated and severe pace than the changes observed in rural contexts. In Kebele 14, one of the oldest neighborhoods in Mekelle, only a few distinctive and authentic one- and two-storey *Hidmo* structures remain (Aranha, 2010). The majority have been demolished or replaced by modern buildings constructed with conventional materials, leading to the erosion of the area's architectural and cultural identity.

The temporal sequence of satellite images from October 2006 to April 2025 reveals significant spatial transformation within Kebele 14, Mekelle, reflecting the dynamic nature of urban growth in the region. A prominent trend observed is the marked increase in urban density over the examined period. The built environment becomes progressively continuous, with a notable reduction in vacant and open spaces, indicating substantial urban infill and consolidation. By 2025, the urban fabric appears more compact and developed compared to earlier years, evidencing intensified land use.

The road network, while maintaining its primary configuration throughout the period, exhibits signs of improved definition and possible upgrading. Incremental additions of minor roads and pathways enhance internal connectivity, facilitating movement within the neighborhood and supporting the intensification of land use and population growth. The neighborhood primarily features cobblestone streets, with some narrow alleys in certain areas.

Land use patterns demonstrate clear intensification, with a steady increase in the number and density of buildings. Open plots observed in earlier years have gradually been developed or are under construction in later images, highlighting increased demand for residential, commercial, and mixed-use spaces. This reflects the broader socio-economic trends driving urban expansion in Mekelle. Concomitant with these developments is a discernible decline in green and open spaces, reflecting the environmental pressures associated with rapid urbanization. The reduction in vegetated areas poses potential ecological challenges, including loss of urban biodiversity and increased vulnerability to flooding due to decreased permeable surfaces.

The spatial evolution of Kebele 14, as identified in the 1993 IUAV University of Venice study alongside spatial analysis carried out from 2006 to 2025, reveals a gradual yet unnatural pattern of urban expansion. This development is characterized by rising population density, enhanced infrastructure, and more intensive land utilization. Over the years, traditional *Hidmo* architectural styles have steadily vanished, replaced by modern and conventional building designs. These changes highlight the complex interplay between population increase, economic development, and environmental issues that have influenced Mekelle's urban landscape over the past two decades.

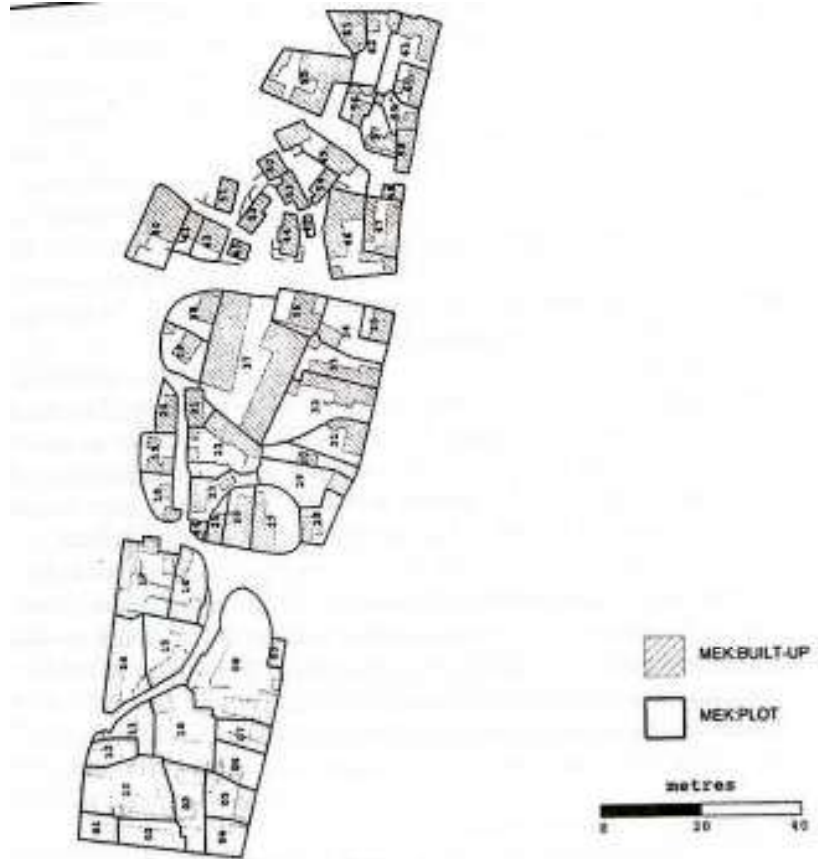


Figure 185: The old inner city of Mekelle, where the unique hidmo house exist in Kebele 14 (1994). (Source: IUAV,1993)



Figure 186: Hidmo with cobblestone street in old inner city of Mekelle, kebele 14 (Source: Patassini D.,2023)

Although changes and adoption of traditional *Hidmo* house have been unfolding gradually over the past decade/s, the war in Tigray led to the widespread destruction of vernacular dwellings across the region. The war significantly disrupted both the physical fabric and the cultural continuity of *Hidmo* architecture, with countless homes damaged or entirely demolished due to artillery shelling, intentional burnt (arson), and airstrike. In the aftermath of the conflict, a large-scale—though often fragmented—shelter recovery and repair effort has been initiated, primarily led by non-governmental organizations (NGOs). These interventions are being implemented through the distribution of standardized Shelter Repair Kits (SRKs) and core housing by humanitarian partners which typically include industrial materials such as corrugated galvanized iron (CGI) sheets, nails, tarpaulins, and basic hand tools. While these kits are intended to address urgent housing needs and provide immediate support for displaced and affected households, they represent a departure from traditional building methods and materials. This emergency-driven approach, while necessary in the short term, raises critical questions about the long-term sustainability, cultural appropriateness, and resilience of post-conflict reconstruction strategies. The use of standardized, non-local materials often overlooks the ecological, thermal, and social benefits of traditional *Hidmo* construction. As such, there is an urgent need for integrated recovery frameworks that not only respond to immediate shelter needs but also support the restoration and adaptation of vernacular architecture through community participation, local material use, and culturally sensitive design.

Ultimately, fostering local appreciation for the value of sustainable *Hidmo* architecture among the people of Tigray requires the demonstration of cost-effective and innovative strategies that enhance comfort, functionality, and overall living standards—while preserving the integrity of traditional building forms and cultural identity. Such efforts must also address institutional challenges, particularly the longstanding lack of formal recognition and policy support from municipal and governmental bodies, which have historically marginalized vernacular *Hidmo* construction practices and limited to rural areas. Supporting the continuity and adaptation of *Hidmo* architecture therefore calls for integrated approaches that combine technical innovation with cultural preservation, alongside stronger policy frameworks that validate and promote indigenous knowledge and sustainable building traditions. In this regard, there has been limited initiative from federal, regional, and municipal authorities to preserve *Hidmo* architecture as a cultural heritage asset. Moreover, efforts to develop building codes or urban planning standards that support the integration or protection of *Hidmo* structures have been minimal or absent.

Kebele 14, Mekelle, Ethiopia



Google Earth
04/2025



Google Earth
04/2020



Google Earth
04/2015



Google Earth
12/2011



Google Earth
10/2006

Figure 187: Twenty-year spatial transformation and dynamics of the traditional settlement in kebele 14, Mekelle (computed from Google Earth by Samuel B. and G. Pozzer, 2025)

Over nearly two decades, Kebele 14 in Mekelle so called the center of urban vernacular architecture has experienced gradual but consistent urban development and densification. In October 2006, the area exhibited a moderately dense urban fabric with a mixture of built structures and some open spaces, indicating a developing neighborhood with room for expansion. In 2009, the use of local stone for road construction, known as cobblestone paving, was introduced. It was considered a positive development in urban infrastructure, as it is more sustainable and locally appropriate compared to asphalt roads(Aranha, 2010). By December 2011, the urban pattern showed a slight increase in building density. More infill development occurred, reducing open spaces and increasing the continuity of the built environment, reflecting ongoing urban growth and consolidation.

In April 2015, the trend toward densification continued with further infill and possibly redevelopment. The road network remained stable, but more buildings filled previously vacant lots, indicating sustained population growth and urban pressure on available land.

By April 2020, the neighborhood had become significantly denser. The majority of open spaces had been built over or repurposed, leading to a more compact urban structure. Infrastructure and roadways remained consistent, but the intensification of land use was evident.

Finally, in April 2025, Kebele 14 reached a mature stage of urban development with high building density and minimal visible open spaces. The urban fabric appears well-established and continuous, signifying a fully developed residential and commercial area responding to the growing demands of Mekelle's population.

Overall, the spatial evolution of Kebele 14 demonstrates a clear pattern of progressive urban densification and infill development over the past two decades. The area has transformed from a moderately developed neighborhood with scattered open spaces into a densely built-up urban environment. This process reflects broader urbanization trends in Mekelle, driven by population growth and increasing demand for housing and services. The stable road network, combined with intensified land use, highlights a consolidation phase typical of maturing urban neighborhoods. What makes Kebele 14 particularly significant is its status as one of the city's oldest centers, retaining historic *Hidmo* houses that serve as tangible witnesses to the transition from traditional settlement patterns to modern urban development seen in other parts of the city.

Lesson from *Hidmo* architecture

Several important insights drawn from the sustainable principles and challenges of *Hidmo* vernacular architecture in Tigray can inform not only local building practices, but also contribute to the broader global discourse on sustainable architecture, particularly in the context of post-war reconstruction.

Local materials promote sustainability and affordability:

- *Hidmo* construction relies on locally sourced materials like stone, mud, timber, and water, minimizing embodied energy, transportation emissions, and construction and maintenance costs.
- Black basalt foundation offers durability and moisture resistance, showing how indigenous material knowledge enhances building lifespan and performance.

Lesson: Sustainable architecture should prioritize locally available, climate-appropriate, and low-impact building materials to reduce environmental burden and increase affordability.

Passive design ensures thermal and climate comfort:

- Thick stone walls act as thermal mass, regulating interior temperatures in a region with extreme climatic variations.
- Courtyards (*mereba/dembe*) and small high-level openings promote natural ventilation, daylighting, and passive cooling.
- Flat mud roofs offer insulation and solar shading, although they require seasonal maintenance, depending on type of soil utilized.

Lesson: Integrating passive environmental controls—such as stack ventilation, cross-ventilation, and thermal mass—enhances thermal comfort without mechanical systems, aligning with sustainable design.

Spatial layout reflects environmental and indigenous cultural knowledge:

- Building orientation (east- or north-facing entrances) and the symbolic placement of elements like the *medeb* (bed) reflect cultural and religious beliefs while improving climate responsiveness.
- The courtyard-centered layout supports social interaction, use of open spaces, air flow, and climate balance. Within *hidmo* clusters internal-external relationships are redefined according to the household social profile

Lesson: Sustainable architecture must be context-sensitive, aligning environmental performance with cultural practices and spatial traditions.

Maintenance, Resource Scarcity, and Modernity Affect Continuity:

- The decline of traditional roofing (mud flat roofs) stems from timber scarcity and annual maintenance burdens, prompting adoption of CGI sheets despite their poor insulation.
- Modern materials (CGI, concrete blocks and alike) are socially perceived as progressive, causing a shift away from vernacular forms.

Lesson: Perceptions of modernity, access to industrial materials, and maintenance intensity greatly influence sustainability strategies and choices. Addressing these perceptions with improved vernacular adaptations is crucial.

Cultural Knowledge Is a Pillar of Sustainable Design:

- Plastering with mud and dung, often done by women, is both functional (antibacterial, insulating) and cultural (symbolizing care and heritage).
- Traditions of building and maintenance are intergenerational knowledge systems vital to sustainable living.

Lesson: Traditional knowledge systems and cultural practices offer viable, low-cost, environmentally aligned building methods and deserve recognition and integration into modern design paradigms. Self-construction according to these traditional techniques is a way to maintain the relationship with the soil, the land and the earth, reducing its consumption and limiting permeabilization.

Institutional gaps and post-conflict reconstruction undermine resilience:

- Post-war rebuilding has focused on quick industrialized solutions (e.g., shelter repair kits with CGI and tarpaulins), neglecting traditional architecture's sustainability and resilience.
- Planning policy/law neglect and lack of technical support have marginalized vernacular solutions in favor of uniform, less climate-responsive designs. Especially in the major urban centers of Tigray, there has been a systematic demolition of single or clustered *hidmo* buildings with negative environmental and social impacts (see, for example, areas adjacent to the northern industrial zone of Mekelle, a demolition operation similar to that of Kebele 14 in the old town of Mekelle).

Lesson: Sustainability efforts must be institutionally supported, with formal recognition, incentives, and technical integration of vernacular methods in housing and urban policies. Besides, building codes and planning standards and principles should acknowledge *hidmo* as plausible housing typology.

Energy practices highlight the need for renewable integration:

- Widespread use of biomass (firewood, dung) contributes to deforestation and indoor pollution (though less than modern building and construction activities).
- Tigray's abundant solar and wind potential remains underutilized, despite being a cleaner and more sustainable energy alternative.

Lesson: Sustainable architecture should incorporate renewable energy solutions aligned with local natural resources to reduce environmental degradation and improve public health.



Figure 188: Demolished Hidmo house on the outskirts following industrial developments in the Messebo area of Mekelle (Source: Patassini D., 2024)

4.1.2. Contemporary vernacular architecture in Tigray

The contemporary innovations of hidmo vernacular architecture

The *Hidmo* represents an authentic and culturally embedded architectural form that is uniquely tied to the Tigray region. In the context of the 21st century (marked by rapid advancements in conventional construction materials and technologies) this traditional architecture faces increasing pressure from the forces of modernization and flat standardization. As a result, there is a growing need to develop a contemporary vernacular approach that balances the preservation of cultural identity with the demands of modern functionality, sustainability, and improved living standards. Adapting the traditional *Hidmo* house to contemporary needs, particularly in light of the availability of modern materials, requires thoughtful and strategic enhancements aimed at increasing comfort, efficiency, and overall quality of life. What's more, it requires people's belief and sharing.

Such interventions are essential to ensure the continued relevance and applicability of *Hidmo* architecture in both urban and rural settings. This can be achieved through the integration of innovative design approaches that respect traditional forms while meeting present-day requirements. To illustrate this potential, case studies highlighting contemporary and innovative applications of *Hidmo* vernacular architecture will be examined. These examples will demonstrate how traditional *Hidmo* design principles can be successfully adapted and implemented within modern construction practices across different regional environments.

The Gheralta lodge in Hawzen (a case study)

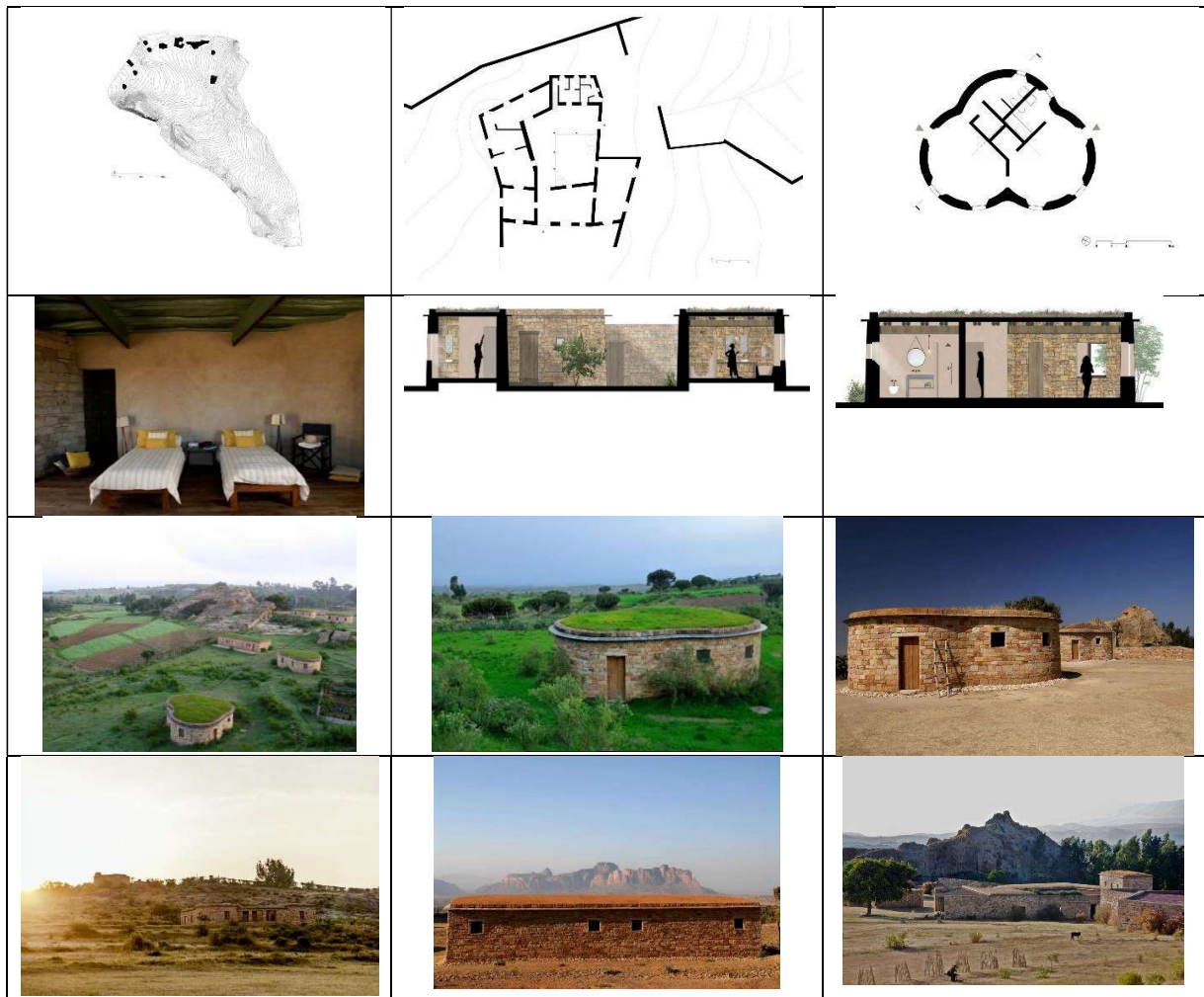
Gheralta Lodge is situated in the heart of the Tigray region in northern Ethiopia, specifically within Hawzen Woreda. Located approximately 105 kilometers north of Mekelle, Hawzen is a small town known for its proximity to the historic and visually striking Gheralta chain of mountains. The lodge provides a distinctive accommodation experience for tourists exploring the area's rich of cultural and natural heritage. Architecturally, Gheralta Lodge is distinguished by its thoughtful integration of traditional building practices with contemporary design principles. Constructed primarily from locally sourced stone and earth, the design of the lodge is inspired by the vernacular *Hidmo* house typology—characterized by thick dressed stone walls, flat roofs, and earth-toned finishes that seamlessly blend into the surrounding landscape. This approach not only preserves the architectural identity of the region, but also promotes environmental sustainability through passive design strategies and the application of indigenous construction techniques. As a result, Gheralta Lodge serves as a model of culturally responsive and ecologically conscious tourism infrastructure, demonstrating how modern hospitality design can honor local traditions while meeting contemporary needs.

Gheralta Lodge comprises a restored and structurally enhanced *Hidmo* homestead, complemented by several two-room bungalows or cottages designed in a style reminiscent of traditional *Hidmo* architecture. These structures are built using locally sourced stone, maintaining the visual and cultural continuity of the region's vernacular building practices. The original *Hidmo* flat roof has been structurally modified to improve durability and reduce reliance on increasingly scarce heavy timber. This is achieved by integrating steel plates between commercially available lumber planks, creating a more sustainable and resilient roofing system. The walls are primarily constructed using roughly dressed dry-stone masonry. However, in the reception area and parts of the bungalows, the walls are roughly plastered with a mixture of cement and red ash, creating a finish that closely resembles traditional earthen plaster. Red ash—also known as volcanic scoria—is a lightweight, porous material derived from volcanic activity. When mixed with cement, it produces a mortar that supports environmentally responsive construction by reducing dependence on high-energy industrial materials. At the same time, it helps preserve traditional building aesthetics and techniques associated with *Hidmo* architecture. Doors and windows follow traditional design principles, with wooden panels framed in steel, offering a blend of cultural authenticity and modern structural reinforcement.

The courtyard, complemented by a thatched shaded pergola (*Afgebela*) type and integrated landscaping elements, forms a green and tranquil microclimate within the lodge compound. Throughout the lodge, stone serves as the primary material for dry wall construction, with mud utilized as a secondary component. The resulting spaces demonstrate both functional efficiency and satisfactory building performance. The construction process followed a contractor-led approach, and the final outcome has been positively received by the local community.

The courtyard, enhanced by a thatched pergola of the *Afgebela* type and thoughtfully integrated landscaping elements, creates a serene and green microclimate within the lodge compound. Across the site, stone is employed as the primary material for dry wall construction, with mud used as a complementary secondary element. This combination results in built environments that are both functionally efficient and perform well in terms of thermal comfort and environmental responsiveness. The construction was executed through a contractor-led process, and the completed project has been well received by the local community, reflecting its cultural sensitivity and architectural appropriateness within the regional context.

The Gheralta Lodge project, commissioned by Nature and Culture PLC, was designed by Architect Giuseppe Tommasi in collaboration with the consulting firm Nicole Cieri Architects (NCA). Construction was carried out by Elmi Olindo Contractors PLC, based in Addis Ababa, Ethiopia. The lodge was completed in 2014 and encompasses a total surface area of 2,000 square meters.



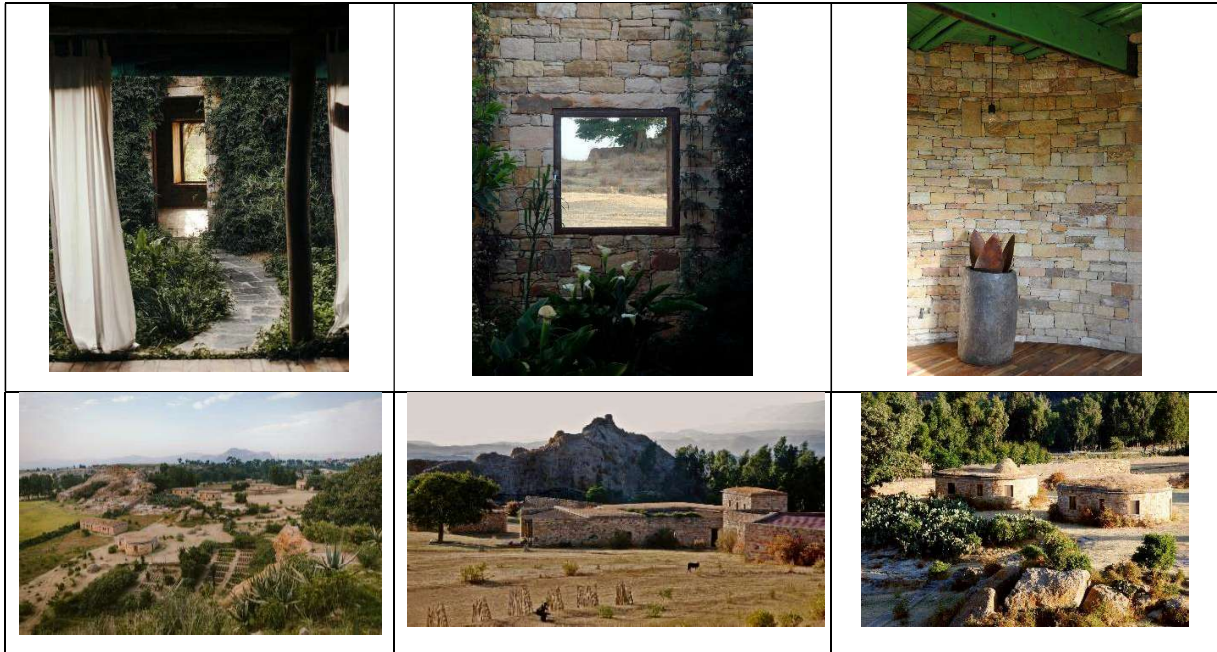


Figure 189: Gheralta lodge before the war 2020-2022: photo credit to NCA architects

In the aftermath of the Tigray war, Gheralta Lodge—an iconic example of vernacular-inspired sustainable architecture—was forcibly repurposed as a military base and defensive position. This occupation resulted in extensive damage, including the loss and a planned stealing of furniture, destruction of key architectural features, and disruption of the surrounding landscaped environment. Consequently, the lodge is currently non-operational (although under restoration), reflecting the broader consequences of armed conflict on *Hidmo* related cultural heritage, tourism infrastructure, and the local economy.

Despite the severity of the damage, the core structural framework of the lodge remains largely intact. This enduring physical resilience presents a valuable opportunity for future restoration and adaptive reuse. The case of Gheralta Lodge highlights the vulnerability of heritage-based and vernacular architectural sites in conflict zones, while simultaneously underscoring their potential role in post-conflict recovery and sustainable development. The survival of such structures not only testifies to the durability of traditional construction techniques, but also reinforces the importance of integrating cultural heritage conservation into regional reconstruction efforts. In this context, Gheralta Lodge stands as both a symbol of cultural loss and a beacon for potential regeneration through heritage-sensitive and market-driven reconstruction approach. It is also a strong message for public and private actors who have not shown due respect for this traditional technology and construction practice in recent decades.



Figure 190: Burnt and damaged of Gheralta lodge after the war 2020-2022: (Source: Patassini D., 2024)



Figure 191: Comparison of traditional hidmo details and those at the Gheralta Lodge (Source: Aranha, 2010)

Nicolas Robinson School in Mekelle (a case study)

Another significant case study—though less widely recognized than Gheralta Lodge—is the Nicolas Robinson School in Mekelle. The school represents an important example of contemporary vernacular architecture informed by the traditional hidmo construction system and indigenous building technologies. Located in Mekelle, Hawelti sub city, the institution provides education from kindergarten through secondary level. It was established through a collaborative initiative between the Tigray Disabled Veterans' Association and the UK-based charity Rainbows4Children. The development of the campus was executed in three distinct phases.

The school was established in phases, beginning with the kindergarten, completed in 2004 and inaugurated in 2005, accommodating 160 children (ages 4–6) with six classrooms, a dining hall, play areas, and a landscaped garden. The primary school, started in 2006, now serves about 640 students (Grades 1–8) across 18 classrooms, with a library, IT room, multipurpose hall, sports grounds, dining facility, and computer and science laboratories. The secondary phase began in 2011, opening in 2012 with 75 Grade 9 students; by 2019, enrollment reached 360 (Grades 9–12) in 12 classrooms, supported by fully equipped science laboratories.

Designed by Architect Fasil Giorghis, the school exemplifies a thoughtful blend of modern and traditional architectural elements. Stone is extensively employed in the walls and cobblestone paving, reflecting the region's characteristic thick stone construction. Classrooms and laboratories are primarily constructed using a combination of stone and hollow concrete blocks (HCB) with cement plastering, while storage areas and dry latrines are fully built with unplastered stone walls and feature flat “hidmo” roofs with slate eaves, in line with local building traditions and climate-adapted design. Dry latrines utilize ash for waste drying, with the resulting byproducts repurposed as fertilizer. The school relies on groundwater for its water supply. The compound is paved with slate, cobblestones, and large flat stones, while stone walls are bonded with cement mortar. Flagstone (slate) is used for paving the building surroundings and long walkways. Later, cobblestones and flagstones were also mixed for paving.

Overall, the Nicolas Robinson School offers a comprehensive and well-resourced educational environment, allowing students to complete both primary and secondary education within a cohesive campus that reflects contemporary interpretations of local vernacular architectural traditions. The sustainable design thoughtfully utilizes available local materials such as stone, water, and soil, combining traditional and modern technologies, including the recycling of sludge and waste, to create a blend of sustainable and contemporary traditional architecture.



Figure 192: Integration of modern design with traditional hidmo technology at Nicolas Robinson School in Mekelle (Source: Patassini D., 2025)

Adaptive and Sustainability

The above critical investigation of sustainability dimensions of *Hidmo* house architecture undertakes a comprehensive analysis of *Hidmo* typologies, with the use and performance of traditional construction materials, the architecture's potential contribution to sustainable development, and its adaptability within contemporary architectural discourse and practice. Using an interdisciplinary approach, the research examines the interconnections between cultural heritage, environmental responsiveness, and socio-economic relevance, positioning *Hidmo* architecture as a valuable model for resilient and context-sensitive design. By engaging with both historical knowledge and current trends, the study seeks to advance scholarly and practical understanding of how vernacular architectural traditions can inform future design strategies that uphold cultural identity, support ecological sustainability, and enhance community well-being.

Hidmo house architecture historically exemplified a highly sustainable form of vernacular building, meeting key sustainability criteria across social, economic, and environmental dimensions. Rooted in locally available materials, community-based construction practices, and climate-responsive design, the *Hidmo* house once served as a model of integrated and adaptive architecture. However, over the past three decades, this inherent sustainability has been increasingly compromised due to a range of interrelated factors. These include rapid economic development, shifting societal attitudes and perceptions of modernity, the diminishing availability of key natural resources—particularly timber—the declining structural lifespan of traditional earthen roofs, and the widespread destruction and urgent reconstruction efforts following the recent war. Collectively, these pressures have accelerated the decline of the *Hidmo* house's original sustainable qualities, raising urgent questions about how to preserve, adapt, and revitalize this architectural heritage in a rapidly changing socio-economic and environmental context.

In addition, the case studies on the contemporary application of *Hidmo*-inspired design and construction within lodge-based tourism and educational infrastructure serves as a compelling reminder of how the rich, sustainability-oriented principles embedded in *Hidmo* architecture can be thoughtfully integrated into modern architectural practices. This example illustrates the potential for vernacular design to coexist harmoniously with contemporary functionality, aesthetics, and construction techniques. It also highlights the adaptability of *Hidmo* architecture across diverse spatial and programmatic contexts in Tigray, reaffirming its relevance not only as a cultural heritage asset but also as a viable model for sustainable development in both rural and urban settings.

Finally, to better understand why vernacular architectural traditions are often abandoned in favor of modern construction practices—and to fully harness the valuable lessons that vernacular architecture offers for sustainable design—it is essential to shift both the focus and methodology of architectural research and practice. Greater emphasis must be placed on contextual, community-based approaches that recognize the cultural, environmental, and social logic embedded in traditional building forms such as the *Hidmo*. Raising

awareness among rural communities is particularly crucial. While certain elements of *Hidmo* architecture—such as the flat earthen roof—may require technical enhancement to meet contemporary performance standards, the overall architectural system remains inherently sustainable and highly relevant. Educating residents about the potential of upgrading rather than abandoning traditional practices is key to preserving this cultural heritage. Moreover, this study contributes valuable insights for municipal authorities, policymakers, and practicing architects. It advocates for the formal recognition and support of traditional *Hidmo* construction techniques through legal frameworks, building codes, planning standards and urban development policies. By promoting the integration of indigenous knowledge systems with modern design and evolving cultural preferences, a more inclusive and resilient architectural future can be fostered—one that honors the past while addressing the needs of the present.

4.2. Revisiting the humanitarian cycle

Emergency, Relief, Recovery and Reconstruction (ERRR)

Both natural and man-made crises typically progress through distinct phases: emergency, relief, recovery, and reconstruction. Shelter and settlement responses vary at each stage, shaped by the evolving needs of displaced populations—initially addressing the urgent needs of newly displaced individuals, followed by adaptations for prolonged displacement in planned and unplanned settlement, and eventually accommodation of returnees during recovery and reconstruction phases.

Humanitarian architecture/urbanism is the practical planning, design, and construction-built environment related assistant for people in need. This response serves as a foundation for recovery, and reconstruction, and ultimately, long-term development. and then to development. In this context, the United Nations promotes the triple Humanitarian-Development-Peace (HDP) Nexus as strategic framework aimed at enhance coherence and coordination among humanitarian aid at different phases, development programs, and peacebuilding efforts-particular in fragile and crises-affected regions such as Tigray, Ethiopia. Similarly, the triple HDP Nexus also serve as a pathway toward durable solutions for IDPs, as it employs as context-based, communities at the center and an integrated approach.

Humanitarian architecture responses for shelter and settlement during the crisis cycle included makeshift shelter and then up housing reconstruction and create resilient livelihood that is better than before. This Shelter and settlement solutions should be adapted to the geographical context, climate, cultural practice and habits, and the local availability of skills as well as accessibility to adequate construction materials in any given country (UNHCR, 2025a). The context and culture include the traditional housing techniques in the response's areas.

The concept and definition of humanitarian architecture can be expanded beyond immediate responses to affected populations to also encompass the integration of vernacular architecture practices within the context of the response area. This approach is increasingly recognized and supported by UNHCR as well.

In situations of prolonged displacement, shelter and settlement interventions-such as neighbor approach, planned camps strategies and the use of shelter repair kits (SRKs) - offer valuable opportunities to incorporate local building traditions. By doing so, humanitarian responses strengthen to promote sustainability and support the ‘building back better’ agenda.

Humanitarian architecture and vernacular architecture overlap on the following points:

- Sustainability issues (mainly environmental, energy and social aspects)
- Rehabilitation and recovery of vernacular housing
- Building back better (BBB) and durable solutions
- Critical regionalism: balance global moder design principles with local cultural, geographic, and climate contexts.
- Makeshift shelters: Provided lifesaving protection during the relief period and later supported recovery efforts through the use of locally available materials. IDPs benefited from their existing knowledge of traditional construction techniques of *Hidmo*.

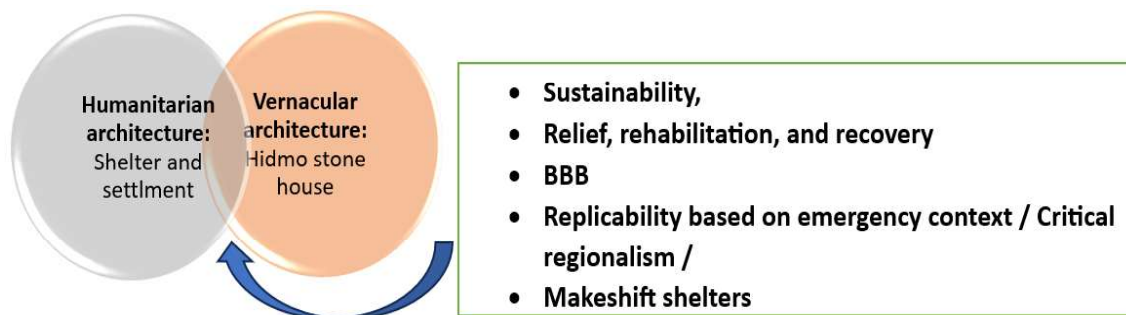


Figure 193: Interaction of humanitarian and vernacular architecture (Source: author 2023)

4.3. Building Back Better and vernacular architecture

Building Back Better (BBB) is a prominent concept in post-disaster reconstruction and recovery aimed at creating safe and resilient communities following disaster events. BBB identified as one of the Priorities for action for Disaster Risk Reduction (DRR) in the United Nations Sendai Framework. BBB signifies inducing resilience into communities, allowing it to adapt and transform, to build communities back better than they were before. Authors such as Clinton, Kennedy and Monday describe BBB as a set of actions that can be taken following disasters to improve the physical, social, economic and environmental conditions of a community through reconstruction and recovery (Clinton, 2006).

Mannakkara and Wilkinson developed the concept of BBB further through international case study research and created a BBB Framework to represent the key areas in which action needs to be taken to Build Back Better (Mannakkara & Wilkinson, 2014).



Figure 194: Build Back Better Framework (Mannakkara & Wilkinson, 2014)

Housing reconstruction projects guided by the BBB framework emphasize the importance of utilizing local resources and capacities to effectively reduce long-term vulnerability among affected populations. Vernacular architecture, in this context, offers valuable insights into disaster-resilient design strategies that are both affordable and accessible to most people. In rural areas of Tigray, housing reconstruction largely depended on assistance from NGO, given the limited capacity of government institutions. assistant These interventions often adopt standardized, ‘one-size-fits-all’ solutions that may overlook local building practices and context-specific needs. However, several key considerations emerge in the implementation of BBB approach during reconstruction of vernacular house in post-war Tigray:

- Sectoral focus: reconstruction efforts predominantly concentrated on the shelter and housing sector, with limited integration of other critical sectors such as livelihoods, WASH and infrastructure which are essential for a holistic and inclusive recovery. In Tigray, durable solutions that implemented through national strategy led by central government with a support from UN, involving UNHCR, IOM and UNDP. The key role is to support IDPs, returnees and host communities to restore housing basic services as well as economic support following the housing reconstruction.
- Transformation of vernacular housing practices: traditional building practices particularly roofing system-have undergone significant changes. the widespread shift from mud flat roofs to CGI sheets represents a departure from vernacular forms. While CGI roofing offer quicker and cheaper

solutions, they raise suitability concerns related to thermal comfort, local aesthetics and environmental impact.

- Improved structural quality: the reconstruction houses demonstrate a noticeable improvement in structural quality compared to the pre-war dwellings. Wall reconstructed in better workmanship and alignment in which beneficiaries witnessed an enhanced durability and a renewal sense of safety in the rebuilt homes.

Conclusion: Towards adaptive humanitarian architecture and urbanism

Final discussion, conclusions, and recommendations

Final discussion and conclusion

An analysis of multiple-sited case studies, grounded in intensive field work, revealed a wide range of humanitarian shelter and settlement interventions developed for IDPs living in precarious condition, as well as various forms of spontaneous self-adaptations by the displaced communities themselves. These responses often result in spatially confined spaces created through the strategic deployment of humanitarian architecture and urbanism as instruments of spatial intervention.

At the same time, government preparation and responses to forced displacement are often limited. Local and national government may lack the capacity to provide comprehensive and long-term solutions and instead rely on political and strategic mechanisms to manage displacement crises. One such mechanism is the establishment of camps and temporary settlement sites that function as space of containment rather than integration. These conditions can be interpreted through Giorgio Agamben's concept of the 'state of exception', where extraordinary measures are applied outside the normal legal and political framework (Giorgio Agamben, 2005). Within this theoretical perspective, humanitarian settlements such as camps and temporary sites can be understood as spatial embodiments of the state of exceptions. Although these created physical environment so called 'confined spaces' are physically located within a country territory, but politically and socially outside the full framework urban integration.

While humanitarian architecture and urbanism intended to alleviate the suffering of displaced populations living in extremely dire conditions, these interventions may unintentionally reinforce exclusion. By normalizing temporary, segregated, and non-integrative forms of settlement, humanitarian responses can contribute to the persistence of isolated and impermanent spatial arrangements. In this sense, humanitarian shelter and settlement interventions, together with Agamben's notion of the state of exception, help illuminate the theoretical foundations and contradictions embedded within humanitarian architecture and urbanism.

Nevertheless, principles and practices of humanitarian architecture and urbanism extend beyond merely providing emergency support for displaced or crisis-affected populations. Increasingly, these approaches seek to engage host communities, returnees, and other marginalized groups as part of broader recovery processes. In doing so, they recognize traditional housing systems and existing settlement patterns as valuable spatial, cultural, and social resources for reconstruction and long-term resilience.

By incorporating local cultural construction practices, environmental knowledge, and climatic conditions into intervention strategies, humanitarian shelter and settlement approaches can better support sustainable recovery, reconstruction programs, and the reintegration of displaced populations into their social and

territorial contexts. Such context-sensitive strategies offer the potential to move beyond temporary containment toward more inclusive and durable solutions for displacement.

Shelter and settlement:

Following the outbreak of war, a significant influx of IDPs created an urgent need for diverse shelter and settlement solutions. The initial responses emerged from the displaced population themselves, who sought refuge in open spaces, caves, churches, and mosques, and constructed makeshift shelter using locally available materials. Subsequently, humanitarian organization, introduced a range of standardized shelter responses. The section of research revealed that more than sixteen shelter typologies identified across dispersed and grouped settlements that includes, host families, rural self-settlement, urban self-settlement, collective centres, self-settled camps and planned camps (Corsellis & Vitale, 2005).

Humanitarian shelter and settlement responses require effective management structures capable of improving operational efficiency, logistical capacity, and coordination among the diverse stakeholders involved, including national and international NGOs, different levels of government institutions, United Nations agencies, and cluster lead organizations. The findings indicate that the existing humanitarian organizational architecture is largely structured through a predominantly top-down coordination approach. In particular, the cluster coordination system, introduced in response to complex humanitarian crises classified as Level 3 emergencies, initially strengthens coordination among humanitarian actors during the early phase of emergency response. However, the outcome reveals that its effectiveness tends to diminish as crises become prolonged and displacement situations evolve into protracted conditions, exposing limitations in sustaining long-term coordination, adaptability, and context-responsive management mechanisms.

Humanitarian spatial responses, such as shelter and settlement interventions for displaced populations, are not isolated measures; rather, they are closely intertwined with the socio-economic dynamics of the host communities. These settings often foster social ties and strengthen communal relationships between displaced and host residents. In this regard not only, short-term protection needs of IDPs but also their long-term aspirations, especially regarding economic self-sufficiency urge a policy direction (Crisp, 2010) Unlike camp-based settlements, which can sometimes generate tension over the sharing of limited resources, displacement within host communities tends to promote more integrated forms of resources sharing and access to services. Such arrangement can contribute to reducing social friction while supporting more inclusive and sustainable livelihood opportunities for displaced populations.

Camps:

During the relief and recovery phases, humanitarian shelter actors, in coordination with local government authorities, implemented longer-term displacement solutions that involved relocating displaced populations from emergency or temporary collective sites into planned camp settlements. These camps varied in scale,

ranging from small to large, and were developed using humanitarian design principles and crisis-oriented planning approaches. Their establishment followed internationally recognized guidelines and protocols, including those of United Nations High Commissioner for Refugees (UNHCR, 2015), the Sphere Association Sphere Standards (2018), and the Camp Management Toolkit (2015).

Over time, these camps have evolved not only spatially but also socially and economically in response to changing needs and conditions. Planned camp settlements demonstrate internal spatial dynamism and a degree of impermanence, while in some cases gradually transitioning from emergency shelters to semi-permanent structures. This transformation is particularly evident in Mekelle, specifically in the Seba Care 4 IDP Camp, where shelters have increasingly reinforced through traditional construction techniques such as dry-stone walling observed in hidmo vernacular architecture. These adaptations enhance the durability of plastic sheeting shelters, which are originally designed to last approximately six months. The improvement and maintenance of these shelters are supported through routine interventions by humanitarian shelter agencies as well as by the displaced populations themselves.

Furthermore, the provision of basic services and the growth of economic interactions between camp residents, host communities, and the wider urban environment have become increasingly evident. Such developments have fostered new forms of interaction between displaced populations and host communities, particularly in peri-urban and urban areas surrounding Seba Care 4 IDP Camp and Mai Dimu IDP Camp. These emerging dynamics are beginning to challenge conventional theoretical frameworks within humanitarian urbanism by revealing more complex and interconnected relationships between camps and their surrounding urban environments.

Recent perspectives in humanitarian urbanism suggest that camps do not exist in isolation but rather emerge and evolve within existing urban boundaries and administrative systems. This process creates new spatial, social, and economic interactions between displaced populations and host communities. In this context, humanitarian urbanism extends beyond the physical boundaries of camps by facilitating linkages and exchanges between camps, peri-urban zones, and the wider urban areas.

In the case of both planned camps located in different cities, interactions are particularly evident in the spatial expansion and integration of camp activities into nearby peri-urban areas. The growth of surrounding formal and informal peri-urban settlements increasingly extends beyond the spatial limits of the existing master plans, gradually merging with the camp settlements. This phenomenon reflects the concept of “campscape” discussed by Diana Martin, which emphasizes how camps evolve and interact with adjacent urban spaces, forming hybrid socio-spatial landscapes that blur the boundaries between camps and cities (Martin, 2015b). This blurring of boundaries is especially pronounced in the Seba Care 4 IDP Camp in Mekelle, whereas in other camps, activities and structures remain largely confined within the initial planned boundaries.

These spatial and social dynamics are closely linked to the governance and administration of the camps. While the humanitarian Site Management Agency (SMA) provides formal support, existing community structures, social networks, and the residents' capacity to organize and mobilize themselves play a critical role in managing daily activities and maintaining camp functions. Governance arrangements within the camps also reflect those of local authorities and host communities, creating a multi-layered system of oversight. IDPs establish sectoral committees to organize community life, with the most influential often structured around their places of origin. Together, these formal and informal governance mechanisms facilitate both the internal administration of camps and their evolving interactions with surrounding peri-urban environments, demonstrating the interconnected nature of humanitarian governance and spatial integration.

Humanitarian organizations benefit from this governance arrangement, which combines the humanitarian management system implemented by the SMA with the self-organization of the displaced population. This reflects what Michel Agier (2011) describes as humanitarian governance, where humanitarian agencies, including NGOs and UN organizations, manage displaced populations by providing assistance while simultaneously regulating aspects of their daily lives (Agier, 2011). However, unlike some refugee camp contexts, displaced populations are sometimes positioned outside formal political structures by governments and host communities, and their presence may also become entangled with local political dynamics.

Reconstruction:

Post-war housing reconstruction was initiated in response to widespread damage, losses, and identified needs. Extensive destruction was recorded particularly in rural housing, which are widely recognized for their authentic vernacular architecture of *hidmo*. The reconstruction efforts were primarily led by NGOs, with local governments playing a coordinating role. These initiatives were largely implemented through shelter repair kits (SRK) and the core housing unit programs. To examine the effectiveness and contextual relevance of these efforts, three case studies were analyzed in different locations. Based on this analysis, a context-driven model for NGO-led housing reconstruction was developed. The replication and scaling of this context-driven reconstruction model are crucial for supporting broader, long-term housing recovery and resilience in post-conflict settings.

As humanitarian architecture has evolved beyond the immediate provision of emergency shelters for newly displaced or vulnerable populations—including war-affected individuals with damaged homes and returning residents—it has become increasingly important to integrate reconstruction with relief initiatives. In this expanded framework, ensuring that reconstruction efforts respect local culture and traditions, actively engage communities, mobilize resources, and upgrade local building technologies of *hidmo* is critical for accelerating and sustaining previously stagnant reconstruction processes. Linking these

principles with context-driven models enhances the relevance, effectiveness, and scalability of post-conflict housing recovery strategies.

Reconstruction of housing represents a cornerstone of relief, recovery, and long-term resilience in communities affected by disaster or conflict. The findings indicate that rebuilding homes is critical not only for providing the physical shelter but also for sustaining livelihoods and reinforcing social and economic stability. Although government-led recovery programs frequently prioritize institutional and public infrastructure—including schools, healthcare facilities, and water supply systems—housing reconstruction is primarily undertaken by affected populations and humanitarian agencies. Nonetheless, when compared with the extensive damage caused by conflict, these reconstruction efforts often remain limited and inadequate.

Vernacular architecture:

The architectural qualities of the Hidmo house, along with its cultural and environmental relevance, offer valuable insights for post-conflict recovery and reconstruction practices. As a vernacular form, the Hidmo reflects the identity of the local people, their cultural heritage, and their adaptation to the climate. Its principles of sustainability and community-based construction provide important lessons not only for long-term reconstruction efforts but also for emergency and relief shelter responses as seen in camp adaptation strategies by the displaced populations. Revisiting the humanitarian response cycle—comprising emergency, relief, recovery, and reconstruction (ERRR)—through the lens of the Hidmo allows for a deeper understanding of how traditional knowledge can inform more resilient and context-appropriate shelter strategies.

This perspective is particularly relevant given the long-standing critiques of conventional humanitarian shelter approaches. Earlier literature, including the work of Ian Davis (1978), argues that standardized emergency shelters are often aid-driven and insufficiently responsive to local cultural, climatic, and environmental conditions, especially when universal models are applied across diverse contexts. In many complex humanitarian crises, including rural displacement settings, responses frequently rely on standardized modular shelters made primarily from tarpaulin sheets as immediate solutions. However, integrating vernacular principles into the transition from emergency to transitional and recovery phases can enable shelters to gradually evolve into permanent housing. Such vernacular-based approaches support incremental development through a core-housing framework within humanitarian responses, reducing material waste while enhancing cultural appropriateness and long-term sustainability.

The contemporary vernacular architecture of Hidmo exemplifies critical regionalism, bridging modern global design with local traditions, climate, and cultural practices. Integrating such vernacular principles can inform reconstruction efforts by promoting housing solutions that are contextually appropriate, culturally resonant, and environmentally responsive. This approach is also important for emergency relief

and recovery programs, as incorporating vernacular architecture principles in camp site planning can enhance the suitability, comfort, and resilience of temporary shelters.

Recommendations based on findings

Humanitarian Architecture as a Framework for IDP Shelter and Settlement Responses

Following the outbreak of the war, humanitarian actors responded to the large displacement crisis by creating confined space for forcibly displaced populations. Initially, these interventions aimed to address the urgent need for emergency shelter and settlement for displaced and responses themselves to adapt. However, as displacement became protracted, additional and evolving needs such as planned camps emerged. Further durable solutions also required for returnees and host communities. While humanitarian responses across the humanitarian phases such as emergency, relief, recovery and reconstruction phases vary depending on contextual factors, many actors continue to adopt standardized, and one-size-fits approach. This is particularly evident in the design of shelter and settlement interventions in both spontaneous and planned camps, as well as in the reconstruction of housing for returnees and host communities.

Unlike refugees, IDPs typically share similar language, culture, and citizenship as the host communities. As a result, shelter and settlement responses should respect the vernacular architecture of the IDPs and the host. However, the standardized, one-size-fits all approaches often adopted by humanitarian actors tend to overlook the unique cultural heritage, social practices, and geographic specificities of these vulnerable populations. An area-based (neighborhood) approach a ground breaking phenomenon approach tailored to household needs that benefits both the IDPs and host communities living together by providing shelter solution in urban areas.

Rethinking Humanitarian Urbanism: conceptual and operational challenges

The formation of settlements and camps in response to forced displacement has given rise to a distinct form of urbanism that connects camps with surrounding peri-urban and urban areas. This emerging urban condition is shaped by the complex interactions between IDPs and host communities, as well as by the service provision of humanitarian agencies, including shelter, WASH, and health services. These dynamics create spatial and functional relationships between camps and their surrounding urban or peri-urban environments. As a result, the landscapes that emerge around displacement camps often exhibit a hybrid character, blending both urban and rural features at the boundaries of the camps and challenging conventional distinctions between humanitarian spaces and formal processes of city-making. The complexity of this humanitarian urbanism is further shaped by the interventions of humanitarian agencies, together with the location, proximity, and expansion pressures of displacement camps. Moreover, cultural and linguistic similarities between IDPs and host communities foster strong spatial and socio-economic interactions, further influencing the transformation of these evolving urban landscapes.

Within this context, the practice of humanitarian architecture and urbanism in Tigray has undergone significant conceptual and practical transformations in response to the needs of IDPs, returnees, and war-affected communities. These transformations reflect a gradual shift from short-term emergency interventions toward more integrated medium- and long-term recovery strategies that address reconstruction, livelihood restoration, and poverty alleviation. They also highlight the importance of vernacular architectural/urbanism practices and locally grounded approaches in rebuilding processes, while exposing the operational limitations of top-down humanitarian responses and service provision for both affected and host communities. Consequently, these evolving practices not only reshape operational strategies but also challenge and redefine the conceptual foundations of humanitarian architecture and urbanism, opening new avenues for further research and exploration in the field.

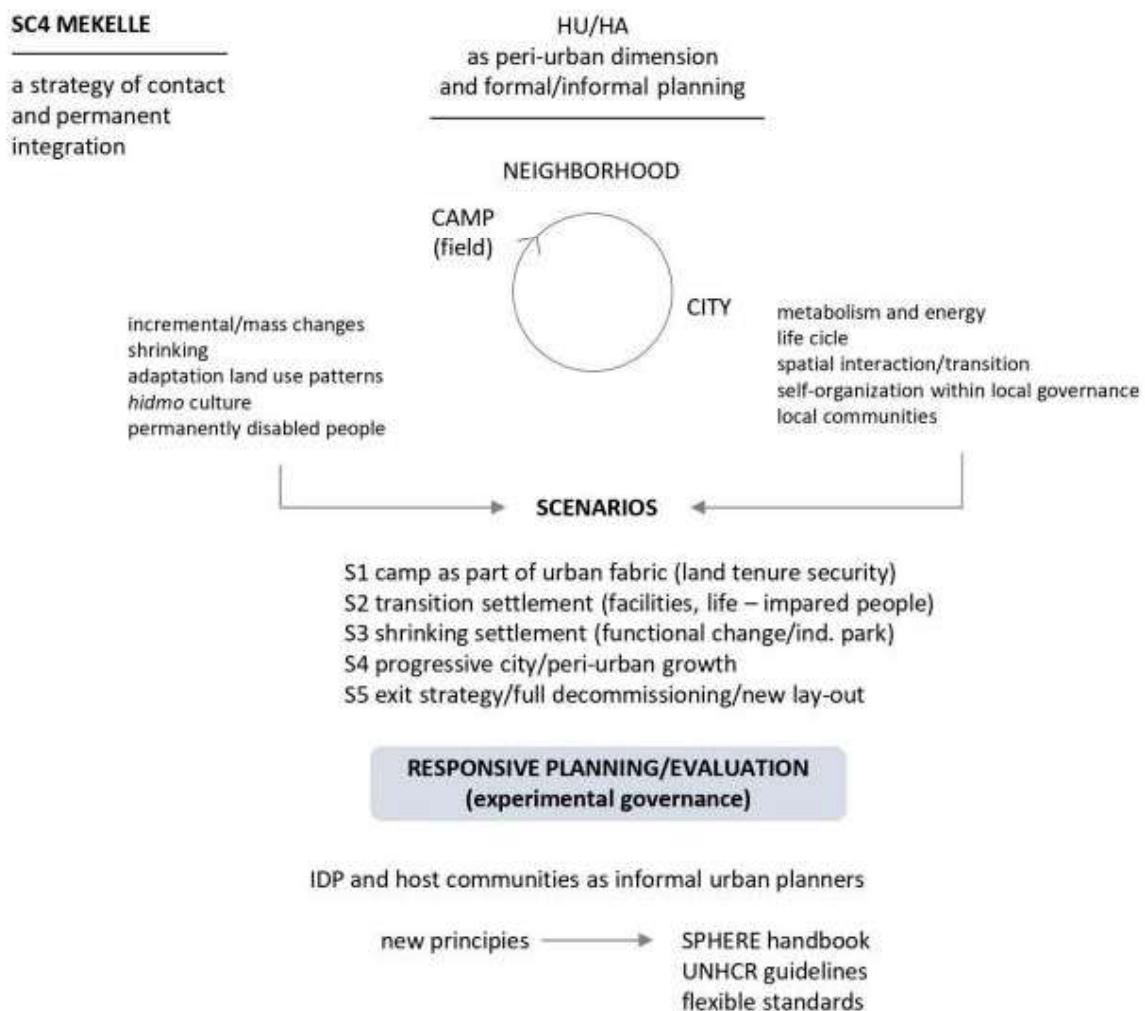


Figure 195: Visualizing interactions between planned camp, peri-urban and urban environment with comparative scenarios (Source: Samuel B. and Domenico P., 2024)

The comparison of the two studied camps reveals significant differences not only in spatial organization, management approaches, and the displaced population’s adaptation to traditional construction knowledge, but also in their future trajectories depending on the permanence of the displaced population. The planned Mai Dimu camp in Shire has largely maintained its original structure and appears to function as a potential relocation-type settlement. In contrast, Seba Care Four in Mekelle shows a tendency to shrink in size, influenced by surrounding land-use changes, while becoming increasingly integrated with nearby peri-urban and urban areas. This evolving situation has significantly affected urban development patterns and service delivery systems. Humanitarian-driven urbanization has gradually transformed these camps into integral components of the urban fabric, often developing spontaneously with limited municipal support and without comprehensive contingency planning from local governments.



Figure 196: Schematic model for approach new humanitarian urbanism arising from camp, peri-urban and urban (Source: Samuel B. and Patassini D.,2024)

Displaced populations in camp settlements often adapt spaces in ways that diverge from humanitarian standards. Daily interactions with shelters shape individual spaces and influence camp layout, zoning, farming, population density, boundaries, and communal areas. These adaptations reveal tensions between formal design frameworks and lived realities, creating conceptual and operational challenges for humanitarian urbanism. Future interventions should adopt flexible, context-sensitive approaches that integrate standards with the practical needs of displaced communities.

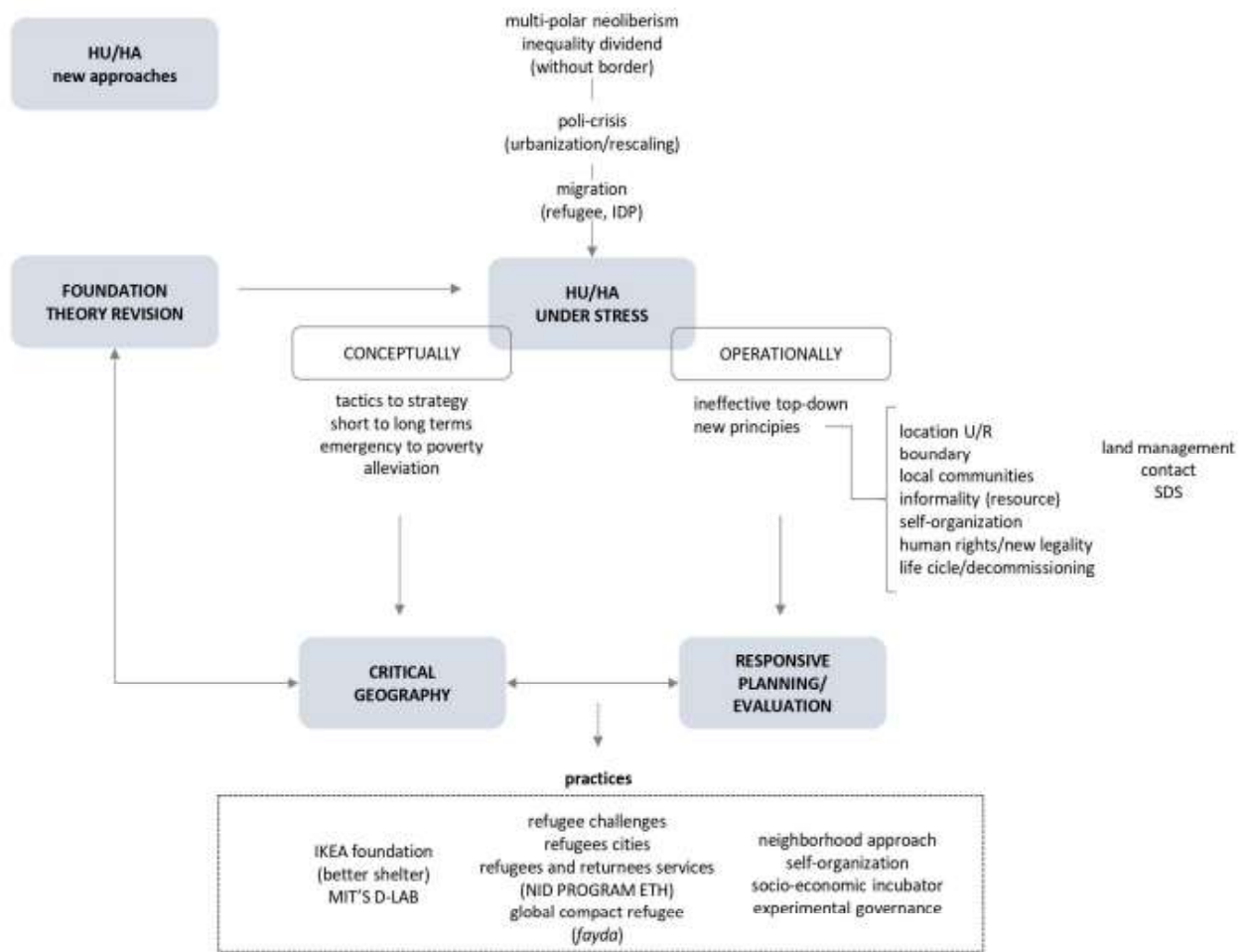


Figure 197: Emerging pattern of humanitarian urbanism in Tigray after crisis (Source: Samuel B. and Patassini D., 2024)

Upon studying humanitarian architecture and urbanism for forcibly displaced communities affected by war presents significant challenges due to security constraints, limited accessibility, scarcity of reliable data, and the trauma experienced by displaced populations. These factors make it difficult to fully capture the day-to-day realities of IDPs. Despite these limitations, this research contributes to the growing body of literature on forced displacement, particularly by highlighting the experiences of IDPs, which remain underrepresented in comparison to the extensive scholarship focused on refugees. Therefore, future research should urgently address these gaps by expanding empirical studies on IDP settlements, exploring context-specific architectural and urban design solutions, and developing methodologies that can safely and ethically engage displaced communities in conflict-affected environments. Further interdisciplinary investigations involving architecture, urban planning, humanitarian studies, and social sciences are also recommended to generate more comprehensive and practical approaches for improving living conditions and spatial resilience in IDP settlements.

- Geographically, this study was limited to six accessible zones of Tigray. The Western zone was excluded due to security concerns and limited accessibility during the period of data collection. As a result, the findings may not fully capture the broader spatial and socio-political dynamics of displacement across the entire region. Future research should therefore extend the scope to include currently inaccessible areas when conditions permit. In particular, further studies should examine critical issues such as housing, land, and property (HLP) rights, durable solutions for returnees, and integrated reconstruction efforts led by humanitarian organizations and government institutions. Expanding research to these areas would contribute to a more comprehensive understanding of post-conflict recovery and support the development of inclusive humanitarian architecture and urban planning strategies for internally displaced and returning communities.
- Thematically, this study focuses primarily on responses during the humanitarian phases of displacement, specifically emergency response, relief, recovery, and reconstruction. The preparedness phases of the disaster management cycle, including prevention and mitigation, were not addressed within the scope of this research. Consequently, future studies are recommended to examine the full disaster management cycle in relation to forced displacement, including preparedness, prevention, mitigation, response, recovery, and reconstruction. Such comprehensive research could provide valuable policy insights for local and regional governments, particularly in strengthening proactive planning, risk reduction strategies, and resilient spatial planning approaches for communities vulnerable to conflict-induced displacement.
- The reconstruction component of this study focuses primarily on the housing sector in rural areas. However, the Damage, Loss and Needs (DALN) assessment prepared by the federal government in 2022, as well as the findings of the Commission of Inquiry on the Tigray genocide in 2025, indicate that the impacts of the conflict extend across multiple sectors, including infrastructure, public services, livelihoods, and social institutions. Therefore, the scope of reconstruction addressed in this research remains limited. In addition, discrepancies and gaps in the reported DALN assessments may also influence the interpretation of reconstruction priorities and needs, which could indirectly affect the findings of this study. Future researchers, academic institutions, and research organizations are therefore encouraged to undertake further investigations into post-conflict reconstruction across multiple sectors, including infrastructure, health, education, livelihoods, and urban services. Such studies would provide a more comprehensive understanding of reconstruction challenges and support integrated recovery strategies in conflict-affected regions.
- Forced displacement as a result of conflict typically produces both refugees and internally displaced persons (IDPs). The focus of this study has been primarily on IDPs resulting from the two-year war and on returning refugees currently residing in displaced persons camps within the region.

However, the conflict also generated a significant number of refugees who fled across international borders and are currently residing in refugee camps in neighboring Sudan. The exclusion of these refugee populations limits the broader understanding of the full scale and dynamics of war-induced displacement in Tigray. Therefore, future research should incorporate the experiences and spatial conditions of refugees living in camps outside the country. Including these populations would provide a more comprehensive perspective on displacement patterns, humanitarian responses, and long-term recovery strategies associated with conflict-induced displacement in the region.

Methodological rigor

This research makes a methodological contribution by employing multi-sited ethnography (MSE), developed by George E. Marcus and widely used in Anthropology and related social sciences (Marcus, 1995). It is combined with the concept of the field, a key element in the sociological theory of Pierre Bourdieu, to provide a framework for examining displacement and processes of spatial production. The study integrates ethnographic, longitudinal, and case study approaches to analyze the dynamics of displacement across time and multiple locations.

Conducted over more than four years, the research provides an in-depth understanding of displaced people's lived experiences and their efforts to shape and reorganize space, both independently and in interaction with humanitarian organizations. This sustained engagement enables the study to explore how displaced communities negotiate shelter arrangements, settlement patterns, and everyday spatial practices within camps, temporary sites, and host communities.

An architectural ethnographic perspective is adopted to follow the trajectories of displaced populations and examine how spatial configurations evolve across different settlement contexts. The research documents how living environments are established, adapted, and inhabited in camps, informal sites, and host communities, while also considering the social and economic relationships that develop between displaced populations and host residents.

The analysis is further informed by the spatial theory of Henri Lefebvre, particularly as articulated in *The Production of Space* (Lefebvre, 1991). In displacement settings—such as makeshift shelters, camps, and collective sites—space often emerges under conditions of urgency and constraint. From Lefebvre's perspective, however, these environments are not merely physical responses to crisis but socially produced spaces shaped by social relations, everyday practices, adaptation strategies, and institutional power structures. In Shire and surrounding areas, displaced people from the same places of origin frequently settle in clusters, re-establishing social networks and spatial arrangements that reflect shared identities and collective coping mechanisms.

The spatial analysis draws on participant observation, dialogue with displaced individuals, and interviews with shelter and settlement specialists in the humanitarian sector. Through the triangulation of these methods and sources, the research captures the evolving nature of shelter and settlement practices and the spatial strategies developed by displaced communities. Overall, this interdisciplinary methodological framework contributes to a deeper understanding of the shelter and settlement sector across the phases of emergency, relief, recovery, and reconstruction (ERRR), while highlighting emerging dimensions of humanitarian architecture and urbanism in post-conflict contexts, particularly in Tigray Region, Ethiopia.

References

- Agamben, G. (1998). *Homo Sacer: Sovereign Power and Bare Life* (D. Heller-Roazen, Tran.). Stanford University Press.
- Agamben, G. (2005). *State of Exception* (K. Attell, Tran.). University of Chicago Press. <http://pdf-objects.com/files/US-English-PDF-Object.pdf>
- Agier, M. (2008a). *On the margins of the world : the refugee experience today*.
- Agier, M. (2008b). *On the margins of the world: the refugee experience today* (D. Fernback, Tran.). Polity Press. https://horizon.documentation.ird.fr/exl-doc/pleins_textes/2025-07/010082497.pdf
- Agier, M. (2011). *Managing the Undesirables: Refugee Camps and Humanitarian Government* (Fernback David, Tran.). Polity Press.
- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I., & Angel, S. (1977). *A pattern language: Towns, buildings, construction*. Oxford University Press. https://arl.human.cornell.edu/linked%20docs/Alexander_A_Pattern_Language.pdf
- Alimia, S. (2022). *Refugee cities: How Afghans changed urban Pakistan*. University of Pennsylvania Press. https://library-sindhi-sp-2020.s3.us-east-2.amazonaws.com/files/Refugee_Cities_How_Afghans_Changed_Urban_Pakistan-Sanaa_Alimia-2022-cs.pdf
- ALNAP. (2022). *The State of the Humanitarian System*. ALNAP Study. <https://reliefweb.int/report/world/state-humanitarian-system-2022-edition>
- Anderson, M., Brown, D., & Jean, I. (2012). *Time to Listen: Hearing People on the Receiving End of International Aid*. CDA Collaborative Learning Projects. <https://reliefweb.int/report/world/time-listen-hearing-people-receiving-end-international-aid>
- Anderson, M., & Gerber, M. (2018). Introduction to Humanitarian Emergencies. In D. Townes, M. Anderson, & M. Gerber (Eds.), *Health in Humanitarian Emergencies: Principles and Practice for Public Health and Healthcare Practitioners* (pp. 1–8). Cambridge University Press. <https://doi.org/10.1017/9781107477261.002>
- Anny, S., Vanden, B. T., Negash, E., De Sloover, L., Ghekiere, R., Haegeman, K., Temmerman, D., & Nyssen, J. (2021). *Tigray: Atlas of the humanitarian situation. Version 2.2*. <https://doi.org/10.5281/zenodo.5804284>
- Aranha, J. (2010). *Hidmo: Stone House of the Tigray, Ethiopia* (IASTE).
- Ashby, M. F. ., & Johnson, Kara. (2014). *Materials and design: the art and science of material selection in product design* (3rd ed.). Elsevier/Butterworth-Heinemann. <file:///C:/Users/pc/Downloads/484.pdf>
- Asquith, L., & Vellinga, M. (2006). *Vernacular Architecture in the Twenty-First Century*. Taylor & Francis. <https://doi.org/10.4324/9780203003862>
- AUGE, M. (1995). *Non-places: Introduction to an anthropology of super modernity* (J. Howe, Tran.). Verso. moz-extension://e4482956-4179-4970-8aea-cc788e1d2eb2/enhanced-reader.html?openApp&pdf=https%3A%2F%2Fmonoskop.org%2Fimages%2F3%2F3c%2FAuge_Marc_Non-Places_Introduction_to_an_Anthropology_of_Supermodernity.pdf
- Bachelard, G. (1958). *The poetics of space* (M. Jolas, Tran.). Beacon Press.
- Barnett, M. (2011). *Empire of Humanity: A History of Humanitarianism*. Cornell University Press.

- Bekele, J. S. (2019). Appraisal of Vernacular Stone Housing Typology of Tigray, Ethiopia. *International Journal of Architecture, Arts and Applications*, 5(1), 1. <https://doi.org/10.11648/j.ijaaa.20190501.11>
- Bekele, S., Patassini, D., & Galli, J. (2025). Internally displaced in Tigray (Northern Ethiopia): Management and sustainability of shelter and settlement. *Progress in Disaster Science*, 28, 1–14. <https://doi.org/10.1016/j.pdisas.2025.100459>
- Bijker, W. E., Hughes, T. P., & Pinch, T. (1987). *The social construction of technological systems: New directions in the sociology and history of technology*. MIT Press. https://monoskop.org/images/1/1f/Bijker_Hughes_Pinch_ed_The_Social_Construction_of_Technological_Systems_New_Directions_in_the_Sociology_and_History_of_Technology_no_OCR.pdf
- Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste* (R. Nice, Tran.). Harvard University Press. https://monoskop.org/images/e/e0/Pierre_Bourdieu_Distinction_A_Social_Critique_of_the_Judgement_of_Taste_1984.pdf
- Bourdieu, P. (1993). *The Field of Cultural Production* (R. Johnson, Ed.). Polity Press. <https://content.uh-berlin.de/monographs/toc/ethnologie/BV025928527.pdf>
- Büscher, K., Komujuni, S., & Ashaba, I. (2018). Humanitarian urbanism in a post-conflict aid town: aid agencies and urbanization in Gulu, Northern Uganda. *Journal of Eastern African Studies*, 12(2), 348–366. <https://doi.org/10.1080/17531055.2018.1456034>
- CCCM cluster. (2021). *Minimum standards for camp management*.
- CCCM Cluster, IOM, & Protection Cluster. (2021). *HOUSEHOLD LEVEL INTENTION SURVEY, Tigray Region, Ethiopia*. <https://dtm.iom.int/reports/ethiopia-household-level-intention-survey-tigray-region-july-2021>
- CCCM Ethiopia. (2025). *SERVICE MONITORING SUMMARY DASHBOARD ETHIOPIA*.
- Chambers, R., & Ramalingam, B. (2016). *Adapting Aid: Lessons from six case studies*. <https://www.rescue.org/sites/default/files/document/701/adaptingaidreportwithcasestudies.pdf>
- Chang, Y., Wilkinson, S., Potangaroa, R., & Seville, E. (2010). Resourcing challenges for post-disaster housing reconstruction: A comparative analysis. *Building Research and Information*, 38(3), 247–264. <https://doi.org/10.1080/09613211003693945>
- Charlesworth, E. (2006). *Architects without frontiers: War, reconstruction and design responsibility*. Elsevier.
- Charlesworth, E. (2014). *Humanitarian Architecture: 15 stories of architects working after disaster*. Routledge.
- Charlesworth, E., & Fien, J. (2023). *Design for Fragility: 13 Stories of Humanitarian Architects*.
- Charlesworth, Esther, Ahmed, & Iftekhhar. (2015). *Sustainable Housing Reconstruction* (First). Routledge.
- Ching, D. K. F. (2014). *Building Construction Illustrated* (5th ed.). Wiley. https://dn710700.ca.archive.org/0/items/FrancisD.K.ChingBuildingConstructionIllustratedWiley2014_201606/Francis%20D.%20K.%20Ching-Building%20Construction%20Illustrated-Wiley%20%282014%29.pdf
- Chun, A. M. S., & Brisson, I. E. (2015). *Ground Rules for Humanitarian Design*. John Wiley & Sons Ltd.
- Clarke, P. K., & Campbell, L. (2015). *Exploring Coordination in Humanitarian Clusters*. www.alnap.org

- Clermont, C., Sanderson, D., Sharma, A., & Spraos, H. (2011). *Urban disasters-lessons from Haiti Report*. <https://alnap.hacdn.io/media/documents/dec-haiti-urban-study.pdf>
- Clinton, J. W. (2006). *Key Propositions for Building Back Better: Lessons Learned from Tsunami Recovery*. https://www.preventionweb.net/files/2054_VL108301.pdf
- Collinson, Sarah., & Elhawary, Samir. (2012). *Humanitarian space: a review of trends and issues*. Humanitarian Policy Group, Overseas Development Institute. <https://media.odi.org/documents/7643.pdf>
- Commission of Inquiry on Tigray Genocide. (2025). *The Plight of Internally Displaced Persons in Tigray A Special Assessment Report*. <https://citgithub.org/the-plight-of-internally-displaced-persons-in-tigray-a-special-assessment-report/>
- Cooley, L., & Kohl, R. (2006). *Scaling Up—From Vision to Large-Scale Change: A Management Framework for Practitioners*. Management Systems International. www.msiworldwide.com
- Coppola, D. P. . (2020). *Introduction to International Disaster Management* (4th ed.). Butterworth-Heinemann. <https://www.sciencedirect.com/book/monograph/9780128173688/introduction-to-international-disaster-management#book-info>
- Corsellis, T., & Vitale, A. (2005). *Transitional settlement: Displaced populations*. Oxfam GB, University of Cambridge. <https://www.livestock-emergency.net/userfiles/file/shelter/Corsellis-Vitale-2005.pdf>
- Coward, M. (2013). Urbicide: The Politics of Urban Destruction. *Global Discourse*, 1(2), 186–189. <https://doi.org/10.1080/23269995.2010.10707864>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE. <file:///C:/Users/pc/Downloads/Creswell-ResearchDesign-1.pdf>
- Crisp, J. (2010). Forced displacement in Africa: Dimensions, difficulties, and policy directions. *Refugee Survey Quarterly*, 29(3), 1–27. <https://doi.org/10.1093/rsq/hdq031>
- Crotty, M. (1998). *THE FOUNDATIONS OF SOCIAL RESEARCH Meaning and perspective in the research process*.
- Cuny, F. C. (1977). Refugee Camps and Camp Planning: The State of the Art. *Disasters*, 1(2), 125–143. <https://shelterprojects.org/other/siteplanning/site-planning-references/Cuny%201977%20Refugee%20camps%20and%20camp%20planning%20-%20the%20state%20of%20the%20art.pdf>
- Currión, P. (2010). *Coordination at the Crossroads: NGO coordination in Southern Sudan 2007-2011*. <https://alnap.hacdn.io/media/documents/co-ordination-at-the-crossroads-ngo-coordination-in-southern-sudan.pdf>
- Davis, I., Thompson, P., & Krimgold, F. (2015). *Shelter after disaster* (2nd ed.). IFRC. https://preparecenter.org/wp-content/sites/default/files/shelter_after_disaster_2nd_edition.pdf
- Davis Ian. (1978). *Shelter After Disaster*. Oxford Polytechnic Press.
- De Clerck, V., Shaheen, R., Gashaw, A., & Zenebe, Y. (2023). *Evaluation of UNHCR's Response to the L3 Emergency in Ethiopia 2021-2022*. www.unhcr.org
- De Lauri, A. (2016). *The Politics of Humanitarianism: Power, Ideology and Aid* (A. De Lauri, Ed.).

- De Waal, A. (1991). *Evil days: Thirty years of war and famine in Ethiopia*. Human Rights Watch.
<https://opendata.uni-halle.de/handle/1981185920/108557>
- De Waal, A. (2018). The end of famine? Prospects for the elimination of mass starvation by political action. *Political Geography*, 62, 184–195. <https://doi.org/10.1016/j.polgeo.2017.09.004>
- Donini, Antonio. (2012). *The golden fleece: manipulation and independence in humanitarian action*. Kumarian Press.
- Doraï, M. K. (2010). *From Camp Dwellers to Urban Refugees?: Urbanization and Marginalization of Refugee Camps in Lebanon*.
- DTM Ethiopia. (2021). *Emergency Site Assessment: Northern Ethiopia Crisis 7 (1-26 June 2021)*.
<https://dtm.iom.int/sites/g/files/tmzbd11461/files/reports/DTM%20Ethiopia%20Emergency%20Site%20Assessment%20Round%207%20Report%20%28June%202021%29.pdf>
- Duffield, M. (1994). Complex Emergencies and the Crisis of Developmentalism. *IDS Bulletin*, 25(4).
<https://doi.org/10.1111/j.1759-5436.1994.mp25004006.x>
- Earle, L., & Brown, A. (2025, January 28). 'Urban first' in a world without camps. IIED.
https://www.iied.org/urban-first-world-without-camps?utm_source
- Edwards, M., & Hulme, D. (2002). Scaling up NGO impact on development: learning from experience. In *Development, NGOs, and Civil Society* (pp. 44–63). Earthscan.
https://www.researchgate.net/publication/233205407_Scaling_up_NGO_impact_on_development_learning_from_experience
- Ethiopia ES/NFI. (2024). *Ethiopia ES/NFI Cluster-2023 Annual Report*.
<https://reliefweb.int/report/ethiopia/ethiopia-emergency-shelter-and-nfi-cluster-2023-annual-report>
- Ethiopia ESNFI. (2025a). *Ethiopia ESNFI Cluster 2024 Annual Report*.
<https://sheltercluster.org/ethiopia/documents/ethiopia-esnfi-cluster-2024-annual-report>
- Ethiopia ES/NFI. (2025). *Ethiopia ES/NFI Cluster National Guideline for Shelter Repair in Return Context (Version-5)*. www.sheltercluster.org
- Ethiopia ESNFI. (2025b). *Unsafe and Overcrowded: The Shelter Crisis Facing Displaced Families in Tigray*.
<https://reliefweb.int/report/ethiopia/unsafe-and-overcrowded-shelter-crisis-facing-displaced-families-tigray-april-2025>
- FDRE. (2009, May 15). *Ethiopian Building Proclamation*.
https://lawethiopia.com/images/federal_proclamation/proclamations_by_number/624.ae..pdf
- Félix, D., Branco, J. M., & Feio, A. (2013). Temporary housing after disasters: A state of the art survey. *Habitat International*, 40, 136–141. <https://doi.org/10.1016/j.habitatint.2013.03.006>
- Few, R., McAvoy, D., Tarazona, M., & Margaret Walden Few, V. (2014). *Contribution to Change: An approach to evaluating the role of intervention in disaster recovery*. Practical Action Publishing Ltd.
<http://dx.doi.org/10.3362/9781780448114>
- Ficcadenti, F. (2024). *Architetturadell'impermanenza Oltreil campo profughi: nuove strategie del progetto per il displacement* [PhD thesis]. Sapienza Università di Roma.

- Foucault, M. (1995). *Discipline and Punish The Birth of the Prison* (2, Ed.; A. Sheridan, Tran.). Vintage Books.
https://monoskop.org/images/4/43/Foucault_Michel_Discipline_and_Punish_The_Birth_of_the_Prison_1977_1995.pdf
- Frampton, K. (1983). Towards a critical regionalism: Six points for an architecture of resistance. In H. Foster (Ed.), *The anti-aesthetic: Essays on postmodern culture* (pp. 16–30). Bay Press.
file:///D:/All%20Data/Samuel%20Bekele%20Jote%20from%20think%20pad/Samuel%20Bekele/Research/08%20Articles/26%20Traditional%20and%20vernacular/Critical%20regionalism/Foster_Hal_ed_The_Anti-Aesthetic_Essays_on_Postmodern_Culture.pdf
- Gebremedhin, N. (1971). Some Traditional Types of Housing in Ethiopia. In P. Oliver (Ed.), *Shelter in Africa*, (pp. 106–123).
- George, J. W., Guthrie, P., & Orr, J. J. (2023). Redefining shelter: humanitarian sheltering. *Disasters*, 47(2), 482–498. <https://doi.org/10.1111/disa.12555>
- Gibson, C. C., Ostrom, E., & Ahn, T. K. (2000). The concept of scale and the human dimensions of global change: a survey. *Ecological Economics*, 32(2), 217–239. doi:10.1016/s0921-8009(99)00092-0
- Gkoumas, I., Mavridou, T., Seymour, V., & Nanos, N. (2025). Post-disaster housing and social considerations. In *International Journal of Disaster Risk Reduction* (Vol. 124). Elsevier Ltd.
<https://doi.org/10.1016/j.ijdr.2025.105537>
- Glassie, H. (2000). *Vernacular Architecture*. Indiana University Press.
<https://iupress.org/9780253023629/vernacular-architecture/>
- Global CCCM Cluster. (2014a). *Global CCCM Cluster Camp Closure Guidelines PROVISIONAL RELEASE*.
<https://emergencymanual.iom.int/sites/g/files/tmzbdl1956/files/2022-08/Camp%20Closure%20Guidelines.pdf>
- Global CCCM Cluster. (2014b). *Urban Displacement & Outside of Camp*. www.globalccmcluster.org
- Global Shelter Cluster. (2023). *SHELTER PROJECTS 9th edition*. International Organization for Migration (IOM). www.shelterprojects.org
- Government of Ethiopia. (2022). *ETHIOPIA DAMAGE AND NEEDS ASSESSMENT-Volume A*.
- Haddow, G. D. ., Bullock, J. A. ., & Coppola, D. P. . (2006). *Introduction to emergency management* (2, Ed.). Elsevier/Butterworth-Heinemann.
- Hamdi, N., & Goethert, R. (1997). *Action Planning for Cities: A Guide to Community Practice*. Wiley.
<https://www.goodreads.com/book/show/3331279-action-planning-for-cities>
- Hammersley, M., & Atkinson, P. (2019). *Ethnography: Principles in Practice*. Routledge.
https://api.pageplace.de/preview/DT0400.9781351380966_A37273120/preview-9781351380966_A37273120.pdf
- Harmer, A., & Macrae, J. (2003). *Humanitarian action and the “global war on terror”: a review of trends and issues*. <https://media.odi.org/documents/355.pdf>
- Hartmann, A., & Linn, J. F. (2008). *Scaling Up: A Framework and Lessons for Development Effectiveness from Literature and Practice*. www.brookings.edu/global
- Hendrix, C. S., & Brinkman, H. J. (2013). Food insecurity and conflict dynamics: Causal linkages and complex feedbacks. *Stability: International Journal of Security & Development*, 2(2). <https://doi.org/10.5334/sta.bm>

- HIHK. (2023). *disputes non-violent crises violent crises limited wars wars*. www.hiik.de
- Hilhorst, D. (2018). Classical humanitarianism and resilience humanitarianism: making sense of two brands of humanitarian action. *Journal of International Humanitarian Action*, 3(1). <https://doi.org/10.1186/s41018-018-0043-6>
- Hilhorst, D., & Jansen, B. J. (2010). Humanitarian Space as Arena: A Perspective on the Everyday Politics of Aid. *Development and Change*, 41(6), 1117–1139. <https://doi.org/10.1111/j.1467-7660.2010.01673.x>
- Hollmén, S. (2020). *NOW THE BAOBAB SHINES!": Cultural locality interfacing with interdisciplinary pedagogies in architectural education* [Aalto University]. <https://urn.fi/URN:ISBN:978-952-64-0102-7>
- Humphries, V. (2013). Improving Humanitarian Coordination: Common Challenges and Lessons Learned from the Cluster Approach. *The Journal of Humanitarian Assistance*.
file:///C:/Users/pc/Downloads/Improving%20Humanitarian%20Coordination_%20Common%20Challenges%20and%20Lessons%20Learned%20from%20the%20Cluster%20Approach%20_%20The%20Journal%20of%20Humanitarian%20Assistance.pdf
- IASC. (2010). *IASC STRATEGY MEETING HUMANITARIAN CHALLENGES IN URBAN AREAS*.
https://www.fao.org/fileadmin/templates/FCIT/PDF/IASC_Urban_Humanitarian_Strategy.pdf?utm_source
- IASC. (2012a). *Multi Cluster/Sector Initial Rapid Assessment (MIRA)*.
- IASC. (2012b). *Reference Module for Cluster Coordination at the Country Level*.
https://fscluster.org/sites/default/files/Annex_8_iasc-coordination-reference%20module-en%20%284%29.pdf
- IASC. (2015). *IASC Reference Module for Cluster Coordination at Country Level*.
<https://interagencystandingcommittee.org/iasc-transformative-agenda/iasc-reference-module-cluster-coordination-country-level-revised-july-2015>
- IASC. (2018a). *Guidance Note for Coordination in Urban Crises*. IASC.
- IASC. (2018b). *Humanitarian System-Wide Scale-up Activation: Definition and Procedures*.
<https://interagencystandingcommittee.org/iasc-transformative-agenda/iasc-protocol-1-humanitarian-system-wide-scale-activation-definition-and-procedures-2018>
- IDMC. (2022). *Global report on internal displacement 2022*. https://api.internal-displacement.org/sites/default/files/publications/documents/IDMC_GRID_2022_LR.pdf?_gl=1*15n35m6*_ga*OTgwNTEzMjk1LjE3NjE1MTQxNzI.*_ga_PKVS5L6N8V*czE3NzUzMDgxMjckbzUkZzEkdDE3NzUzMTAwMjlkajYwJGwwJGgw
- IDMC. (2023). *Global Report on Internal Displacement 2023*.
- IDMC. (2024). *Global Report on Internal Displacement 2024*. <https://www.internal-displacement.org/global-report/grid2024/>
- IFRC. (2013). *Post-disaster shelter: Ten designs*. International Federation of Red Cross.
<https://www.shelterprojects.org/tshelter-8designs/10designs2013/2013-10-28-Post-disaster-shelter-ten-designs-IFRC-lores.pdf>
- IFRC. (2015). *Shelter after disaster* (2nd, Ed.). International Federation of Red Cross and Red Crescent Societies.
- IIRR. (2000). *Going to Scale: Can We Bring More Benefits to More People More Quickly?* International Institute of Rural Reconstruction. https://iirr.org/wp-content/uploads/2021/10/Going-to-Scale-scanned-copy_compressed_compressed.pdf

- Ilcan, S., & Rygiel, K. (2015). “Resiliency Humanitarianism”: Responsibilizing Refugees through Humanitarian Emergency Governance in the Camp. *International Political Sociology*, 9(4), 333–351. <https://sci-hub.se/https://doi.org/10.1111/ips.12101>
- ILO, & UNHCR. (2019). *Building inclusive markets for refugee and host communities: a case study of the ILO-UNHCR Approach to Inclusive Market Systems (AIMS) in Jijiga*. <https://www.unhcr.org/figures-at-a-glance.html>
- IMPACT, & UCLG. (2016). *Consultation on Humanitarian Responses in Urban Areas: Perspectives from Cities in Crisis*. https://www.cites-unies-france.org/IMG/pdf/uclg_tf_impact_cities_in_crisis_overall_report.pdf
- IOM. (2012). *Transitional Shelter Guidelines*. Shelter Centre. https://www.iom.int/sites/g/files/tmzbd1486/files/our_work/Shelter/documents/Transitional%20Shelter%20Guidelines%20-%202012.pdf
- IOM. (2022). *DTM Ethiopia - IDPs map - April 2022*. <https://reliefweb.int/map/ethiopia/internally-displaced-persons-idps-ethiopia-region-april-2022>
- IOM. (2023). *DTM Ethiopia - ETHIOPIA NATIONAL DISPLACEMENT REPORT 16 (November 2022 - June 2023)*. <http://www.ethiopia.iom.int>
- IOM. (2025). *DTM Ethiopia - NATIONAL DISPLACEMENT REPORT ETHIOPIA NATIONAL DISPLACEMENT REPORT 20 (Jul 01 2024 to Aug 28 2024)*. www.ethiopia.iom.int
- IOM, NRC, & UNHCR. (2015). *Camp management toolkit*. IOM, NRC and UNHCR. https://www.iom.int/sites/g/files/tmzbd1486/files/our_work/Shelter/documents/Camp-Management-Toolkit_2015_Portfolio_compressed.pdf
- IRC. (2015). *Humanitarian Crises in Urban Areas: Are Area-Based Approaches to Programming and Coordination the Way Forward?* IRC. <http://www.rescue-uk.org/sites/>
- Jahre, M., Kembro, J., Adjohossou, A., & Altay, N. (2018). Approaches to the design of refugee camps: An empirical study in Kenya, Ethiopia, Greece, and Turkey. *Journal of Humanitarian Logistics and Supply Chain Management*, 8(3), 323–345. <https://doi.org/10.1108/JHLSCM-07-2017-0034>
- Jansen B.J. (2018). *Bram J. Jansen - Kakuma Refugee Camp_ Humanitarian Urbanism in Kenya's Accidental City-Zed Books Ltd. (2018)*.
- Jha, A. K., Barenstein, J. D., Phelps, P. M., Pittet, D., & Sena, S. (2010). *Safer homes, stronger communities: A handbook for reconstructing after natural disasters*. World Bank / Global Facility for Disaster Reduction and Recovery. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/290301468159328458>
- Jogan, I., & Patassini, D. (1996). *Urban Land Management in Ethiopia: The Case of Mekelle*. Post-Graduate School of Urban and regional planning of developing Countries, Iuav.
- Johnson, C. (2007a). Impacts of prefabricated temporary housing after disasters: 1999 earthquakes in Turkey. *Habitat International*, 31(1), 36–52. <https://doi.org/10.1016/j.habitatint.2006.03.002>
- Johnson, C. (2007b). Strategic planning for post-disaster temporary housing. *Disasters*, 31(4), 435–458. <https://doi.org/10.1111/j.0361-3666.2007.01018.x>

- Johnson, C., Lizarralde, G., & Davidson, C. H. (2006). A systems view of temporary housing projects in post-disaster reconstruction. *Construction Management and Economics*, 24(4), 367–378. <https://doi.org/10.1080/01446190600567977>
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). The action research planner: Doing critical participatory action research. In *The Action Research Planner: Doing Critical Participatory Action Research*. Springer Singapore. <https://doi.org/10.1007/978-981-4560-67-2>
- Knox Clarke P., & Campbell L. (2016). *Improving Humanitarian Action, Executive Summary and Recommendations*.
- Konyndyk, J., Saez, P., & Worden, R. (2020). Inclusive Coordination: Building an Area-Based Humanitarian Coordination Model. In *DC* (Vol. 416). www.cgdev.org
- Korten, D. C. (1980). Community Organization and Rural Development: A Learning Process Approach. *Source: Public Administration Review*, 40(5), 480–511.
- Lamarche, A. (2018). *Leaving Millions Behind*. <https://d3jwam0i5codb7.cloudfront.net/wp-content/uploads/2023/03/DRCReport-August2018-1.1.pdf>
- Leader, N. (2000). *The Politics of Principle: the principles of humanitarian action in practice*.
- Lefebvre, Henri. (1991). *The production of space* (D. Nicholson-Smith, Tran.). Blackwell Publishing. <https://iberian-connections.yale.edu/wp-content/uploads/2020/04/The-production-of-space-by-Henri-Lefebvre-translated-by-Donald-Nicholson-Smith.pdf>
- Lewin, K. (1946). Action Research and Minority Problems. *Journal of Social Issues*, 2(4), 34–46. <https://doi.org/10.1111/j.1540-4560.1946.tb02295.x>
- Lobos, Jorge. (2011). *Architecture humanitarian emergencies 02*. Royal Danish Academy of Fine Arts, School of Architecture.
- Lyons, D. E. (2007). Building power in rural hinterlands: An ethnoarchaeological study of vernacular architecture in Tigray, Ethiopia. *Journal of Archaeological Method and Theory*, 14(2), 179–207. <https://doi.org/10.1007/s10816-007-9031-7>
- Maarouf, H. (2019). Pragmatism as a Supportive Paradigm for the Mixed Research Approach: Conceptualizing the Ontological, Epistemological, and Axiological Stances of Pragmatism. *International Business Research*, 12(9), 1–12. <https://doi.org/10.5539/ibr.v12n9p1>
- Mannakkara, S., & Wilkinson, S. (2014). Re-conceptualising “Building Back Better” to improve post-disaster recovery. *International Journal of Managing Projects in Business*, 7(3), 327–341. <https://doi.org/10.1108/IJMPB-10-2013-0054>
- Marcus, G. E. (1995). Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. In *Annual Review of Anthropology* (Vol. 24).
- Mark-Anthony Falzon. (2009). *Multi-sited ethnography: Theory, Praxis and Locality in Contemporary Research*.
- Martin, D. (2015a). From spaces of exception to “campscapes”: Palestinian refugee camps and informal settlements in Beirut. *Political Geography*, 44, 9–18. <https://doi.org/10.1016/j.polgeo.2014.08.001>
- Martin, D. (2015b). From spaces of exception to “campscapes”: Palestinian refugee camps and informal settlements in Beirut. *Political Geography*, 44, 9–18. <https://doi.org/10.1016/j.polgeo.2014.08.001>

- Maslow, A. H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370–396.
- Morgan, D. L. (2014). Integrating Qualitative and Quantitative Methods: A Pragmatic Approach. In *Integrating Qualitative and Quantitative Methods: A Pragmatic Approach*. SAGE Publications, Inc. <https://doi.org/10.4135/9781544304533>
- Mosel, I., & Levine, S. (2014). *Remaking the case for linking relief, rehabilitation and development*. Overseas Development Institute. <https://media.odi.org/documents/8882.pdf>
- Mountfield, B. (2016). *Using the Sphere Standards in Urban Settings*. The Sphere Project. <https://spherestandards.org/wp-content/uploads/using-the-sphere-standards-in-urban-settings.pdf>
- Muriuki, J., Hudson, D., & Fuad, S. (2023). The impact of conflict on food security: evidence from household data in Ethiopia and Malawi. *Agriculture and Food Security*, 12(1). <https://doi.org/10.1186/s40066-023-00447-z>
- Nyssen, J., Anys, S., Negash, E., De Sloover, L., Bempt, T. Vanden, Ghekiere, R., Haegeman, K., Temmerman, D., & Sabat, M. (2022). *Documenting the civilian victims of the Tigray war*. <https://doi.org/10.5281/zenodo.5881561>
- OCHA. (2021a). *Access Map - Tigray Region*. file:///C:/Users/pc/Downloads/20210531_access_snapshot_tigray_region.pdf
- OCHA. (2021b). *ETHIOPIA-TIGRAY REGION HUMANITARIAN UPDATE Situation Report*. <https://reports.unocha.org/en/country/ethiopia/>
- OCHA. (2021c). *HUMANITARIAN NEEDS OVERVIEW ETHIOPIA*. https://www.ecoi.net/en/file/local/2046803/ethiopia_2021_humanitarian_needs_overview_hno.pdf?utm_source
- Office for the Coordination of Humanitarian Affairs (OCHA). (2015). *Multi-cluster/sector initial rapid assessment (MIRA) guidance*. <https://humanitarianresponse.info/programme-cycle>.
- Office of the United Nations High Commissioner for Human Rights. (2021). *The Right to Adequate Housing*. https://www.ohchr.org/sites/default/files/Documents/Publications/FS21_rev_1_Housing_en.pdf
- Oliver, P. (1997). *Encyclopedia of vernacular architecture of the world* (Vol. 1). Cambridge University Press.
- Oliver, P. (2006). *Built to meet needs: Cultural issues in vernacular architecture*. Elsevier.
- Panofsky, E. (1955). *Meaning in the visual arts*. Doubleday Anchor. https://monoskop.org/images/0/0c/Panofsky_Erwin_Meaning_in_the_Visual_Arts.pdf
- Parker, E., & Maynard, V. (2015). *Humanitarian response to urban crises: a review of area-based approaches*. www.iied.org@iiedwww.facebook.com/theIIED
- Patel, R. B., King, J., Phelps, L., & Sanderson, D. (2017). *What practices are used to identify and prioritize vulnerable populations affected by urban humanitarian emergencies? A systematic review*. Kieran Doherty/Oxfam. <http://policy-practice.oxfam.org.uk/our-work/humanitarian/humanitarian-evidence-programme>.
- Phillipson, D. W. (2000). *Archaeology at Aksum, Ethiopia, 1993-7* (Vol. 2). British Institute in Eastern Africa.
- Phillipson, D. W. (2004). *Ancient Ethiopia: Aksum, its antecedents and successors*.
- Plaut, M., & Vaughan, S. (2023). *UNDERSTANDING ETHIOPIA'S TIGRAY WAR*. Hurst Publishers.

- Porteous, J. D., & Smith, S. E. (2001). *Domicide: The Global Destruction of Home*. McGill-Queen's University Press.
- Potvin, M. (2013, August 29). Humanitarian Urbanism under a Neoliberal Regime Lessons from Kabul (2001-2011). *International RC21 Conference 2013*. <https://www.rc21.org/conferences/berlin2013/RC21-Berlin-Papers/24-1-Potvin-Marianne.pdf>
- Quarantelli, E. L. (1991). *Patterns of sheltering and housing in American disasters* (170).
- Quarantelli, E. L. (1995). Patterns of sheltering and housing in U.S. disasters. *Disaster Prevention and Management, MCB University Press, 4*, 43–53.
- Ramadan, A. (2013). Spatialising the refugee camp. *Source: Transactions of the Institute of British Geographers, 38*(1), 65–77. https://www.jstor.org/stable/pdf/24582441.pdf?refreqid=fastly-default%3A4c33d208da816c3eb5954aa56b521a23&ab_segments=&initiator=&acceptTC=1
- Rapoport, A. (1969). *House Form and Culture*. Prentice-Hall.
- Reason, P., & Bradbury, H. (2008). *SAGE Handbook of Action Research: Participative Inquiry and Practice* (2nd ed.). Sage. <https://ikhsanaira.wordpress.com/wp-content/uploads/2016/09/action-research-participative-inquiry-and-practice-reasonbradbury.pdf>
- Rudofsky, B. (1964). *Architecture Without Architects: An Introduction to Non-Pedigreed Architecture*. Museum of Modern Art. www.moma.org/calendar/exhibitions/3459
- Sanderson, D., Clarke, K., & Campbell L. (2012). *Responding to urban disasters: Learning from previous relief and recovery operations*. ALNAP. <https://www.calpnetwork.org/wp-content/uploads/2020/01/alnap-lessons-urban-web-1.pdf>
- Sanderson, D., & Sitko, P. (2017). *Urban area-based approaches in post-disaster contexts. Guidance note for Humanitarian Practitioners*. <http://pubs.iied.org/10825IIED>
- Saunders Mark, Lewis Philip, & Thornhill Adrian. (2019). *Research Methods for Business Students*. www.pearson.com
- Shelter Centre. (2010). *Shelter after disaster: strategies for transitional settlement and reconstruction*. <https://reliefweb.int/report/world/shelter-after-disaster-strategies-transitional-settlement-and-reconstruction>
- ShelterProject. (2003). *Transitional Settlement Sector*. https://www.humanitarianlibrary.org/sites/default/files/2014/02/shelterproject_sectorReport.pdf
- Shigeru, B., Bruderlein, C., Kimmelman, M., Kitayama, K., Pitt, B., Pollock, N., Weizman, E., & Jacobson, H. Z. (2014). *Shigeru Ban Humanitarian Architecture Contributions by Shigeru Ban*.
- Spearin, C. (2001). Private security companies and humanitarians: A corporate solution to securing humanitarian spaces? *International Journal of Phytoremediation, 8*(1), 20–43. <https://doi.org/10.1080/13533310108413877>
- Sphere Association. (2018). *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response*. Sphere Association.
- Stoddard, A., Harmer, A., Haver, K., Salomons, D., & Wheeler, V. (2007). *Cluster approach evaluation report*. Humanitarian Policy Group, Overseas Development Institute. https://humanitarianoutcomes.org/sites/default/files/publications/cluster_evaluation_report.pdf

- Suri, S. (2016). Stronger Together: Partnerships that Build Resilience. In Sanderson D & Sharma A (Eds.), *Resilience: saving lives today, investing for tomorrow* (p. 276). International Federation of Red Cross and Red Crescent Societies. <https://www.ifrc.org/document/world-disasters-report-2016>
- Twigg, J. (2002). *Technology, Post-Disaster Housing Reconstruction and Livelihood Security* (15). <https://www.ucl.ac.uk/hazard-centre/sites/hazard-centre/files/wp15.pdf>
- UN Ethiopia. (2024, February 23). *Bringing back more schools, health facilities to life in Tigray*.
- UN General Assembly. (1991). *Strengthening of the coordination of humanitarian emergency assistance of the United Nations*. file:///C:/Users/pc/Downloads/I270EN.pdf
- UNDP. (2013). *Guidance Note: Scaling up development programmes*. UNDP. [https://www.undp.org/sites/g/files/zskgke326/files/publications/ScalingUP_guidancenote\(Jan2013\)_web.pdf](https://www.undp.org/sites/g/files/zskgke326/files/publications/ScalingUP_guidancenote(Jan2013)_web.pdf)
- UNDP. (2021). *Handbook on Owner-Driven Housing Reconstruction*. UNITED NATIONS DEVELOPMENT PROGRAMME. https://www.undp.org/sites/g/files/zskgke326/files/2022-01/UNDP_Handbook_on_Owner_Driven_Housing_Reconstruction.pdf
- UN-Habitat. (2019). *Compendium of Case Studies AREA-BASED APPROACHES IN URBAN SETTINGS*. www.sheltercluster.org
- UN-Habitat, & UNHCR. (2020). *Guidance for Responding to Displacement in Urban Areas*. UN-Habitat and UNHCR. www.unhabitat.org/HS/049/21
- UNHCR. (2007). *Handbook for Emergencies* (3rd ed.).
- UNHCR. (2009). *UNHCR policy on refugee protection and solutions in urban areas*. UNHCR. file:///C:/Users/pc/Downloads/4ab8e7f72.pdf
- UNHCR. (2014a). *Global Strategy for Settlement and Shelter*. www.unhcr.org
- UNHCR. (2014b). *UNHCR Policy on Alternatives to Camps*. https://www.unhcr.org/sites/default/files/legacy-pdf/5422b8f09.pdf?utm_source
- UNHCR. (2014c). *UNHCR Policy on Alternatives to Camps*. https://www.refworld.org/policy/strategy/unhcr/2014/101682?utm_source
- UNHCR. (2015a). *Handbook for Emergencies* (3rd ed.). UNHCR. <https://www.cawtarclearinghouse.org/storage/AttachementGender/Handbook%20for%20Emergencies%20Third%20edition.pdf>
- UNHCR. (2015b). *The master plan approach to settlement planning: Guiding principles*. <https://www.unhcr.org>
- UNHCR. (2016). *SHELTER DESIGN CATALOGUE*. www.unhcr.org
- UNHCR. (2020). *UNHCR GLOBAL REPORT 2020*. https://www.unhcr.org/media/global-report-2020?utm_source
- UNHCR. (2021a). *annexes-evaluation-l3-emergency-ethiopia*.
- UNHCR. (2021b). *ETHIOPIA EMERGENCY SITUATION (TIGRAY), UNHCR REGIONAL APPEAL*. https://www.unhcr.org/sites/default/files/2021-12/UNHCR%2520-%2520Ethiopia%2520emergency%2520supplementary%2520appeal%2520-%252023%2520December%25202020_1.pdf

- UNHCR. (2024). *UNHCR needs assessment handbook*. https://unhcr-sheltercluster-static.s3.eu-west-1.amazonaws.com/public/docs/unhcr_needs_assessment_handbook.pdf
- UNHCR. (2025a). *Emergency Shelter Solutions and Standards*.
- UNHCR. (2025b). *Principles & Standards for Settlement Planning*.
file:///C:/Users/pc/Downloads/Principles%20Standards%20for%20Settlement%20Planning.pdf
- UNHCR. (2026). *Settlement Typologies in Emergencies Key points*.
file:///C:/Users/pc/Downloads/Settlement%20Typologies%20in%20Emergencies.pdf
- United Nations. (2017). *New Urban Agenda*. <https://habitat3.org/the-new-urban-agenda/>
- United Nations General Assembly. (1948). *Universal Declaration of Human Rights*. <https://www.un.org/en/about-us/universal-declaration-of-human-rights>
- United Nations Office for Disaster Risk Reduction. (2015). *Sendai Framework for Disaster Risk Reduction 2015 - 2030*. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf?startDownload=true
- UNOCHA. (1998). *Handbook for applying the guiding principles on internal displacement*.
- UNOCHA. (2024). *HUMANITARIAN NEEDS OVERVIEW ETHIOPIA*.
<https://www.unocha.org/publications/report/ethiopia/ethiopia-humanitarian-needs-overview-2024-february-2024>
- UNOPS. (2024). *Bringing content to students and patients by reconstructing schools and health centers in Tigray*.
<https://content.unops.org/documents/libraries/press-releases/2024/en/Press-release-Ethiopia-Bringing-content-to-students-and-patients-by-reconstructing-schools-and-health-centers-in-Tigray.pdf>
- USAID/OFDA. (2013). *USAID/OFDA Humanitarian Shelter and Settlements Principles*.
- Uvin, P. (1995). Fighting Hunger at the Grassroots: Paths to Scaling Up. *World Development*, 23(6), 927–939.
[https://doi.org/10.1016/0305-750X\(95\)00028-B](https://doi.org/10.1016/0305-750X(95)00028-B)
- Uvin, P., & Miller, D. (1996). Paths to Scaling-up: Alternative Strategies for Local Nongovernmental Organizations. *Human Organization*, 55(3). doi:10.17730/humo.55.3.v44334362401041t
- Vanbruaene, M., Corsellis, T., Crenn, B., Price, J., Mbatha, P., Tranchant, D., & Domingo-Price, M. L. (2013). *Evaluation of the European Commission's Humanitarian Action in the Shelter Sector*.
https://ec.europa.eu/echo/files/evaluation/2013/shelter_final-report.pdf
- VNG International. (2024, October 23). *Post-Conflict Governance in Tigray: A Focus on Social Accountability and Community-Driven Recovery*.
- Ward, P. (2014). Refugee cities: Reflections on the development and impact of UNHCR urban refugee policy in the middle east. *Refugee Survey Quarterly*, 33(1), 77–93. <https://doi.org/10.1093/rsq/hdt024>
- WBDG. (2016). *Whole Building Design and the WBDG*.
- Wild, L., Booth, D., & Valters, C. (2017, March 3). *Putting theory into practice: how DFID is doing development differently*.
- World Bank. (2022). *Ethiopia Damage and Needs Assessment - Volume A*.
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099062223114085580>

World Health Organization (WHO), & ExpandNet. (2010). *Nine steps for developing a scaling-up strategy*. WHO.
https://cquin.icap.columbia.edu/wp-content/uploads/2018/07/WHO_nine_steps_for_developing_a_scalingup_strategy_who_2010.pdf

Yin, R. K. (2003). *Case Study Research: Design and methods* (3rd ed., Vol. 5).

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6th ed.). Sage.
<https://lcn.loc.gov/2017040835>

Appendix:

Appendix A: Institutional Support letter for Data Collection and Ethical Procedures

Appendix B: List of IDP sites in Tigray Since 2020 (Collective centers, planned camps, and self-settled camps)

Appendix C: List of community resource centers implementing Area-Based Approach (ABA) and CCCM approach

Appendix D: Neighborhood Approach (ABA) pilot project questionnaire, FGD and KII

Appendix E: Physical observations

Appendix-B: List of IDPs site in Tigray since 2020 (collective centers, planned camps and self-settled camps)

Source: Ethiopia CCCM cluster (<https://data.humdata.org/dataset/cccm-cluster-ethiopia-master-list>)

SN	CCCM Site ID	Site Name	Alternate Site Name	Site Status	Site Open Date	Settlement Type	Zone	Woreda	Kebele	CCCM Agency-2025	Latest HHs	Latest INDs
1	TI-0007	Abiyadi TVET College	May Maeado / Abiyadi TVET College-Adebay / May Weyni-1/Abiyadi TVET College - Adi Goshu	Open	12-Apr-21	Collective Center	Central	Abi Adi Town	Abi Adi	OSSHD/UNHCR	4414	19470
2	TI-0008	Abreha We'atsbha Elementary School		Open	18-Nov-20	Collective Center	Central	Axum Town	02	OSSHD/UNHCR	1007	6719
3	TI-0009	Adebay	Adi- abay	Open	6-Dec-22	Planned Camp/Site	North Western	Tahay Adiyabo	Abi Adi	OSSHD/UNHCR	2180	7979
4	TI-0208	Adi Daero Cambo		Open	9-May-24	Planned camp/site	North Western	Adi Daero	Zone 4	IOM	217	1159
5	TI-0016	Adi Hawsi Elementary School	Adhawsi Primary School	Open	25-Nov-22	Collective Center	Mekelle	Adi Haki Sub City		CRDO	165	824
6	TI-0018	Adi Kentibay	Adi Kentibay Elementary School	Open	14-Mar-21	Collective Center	North Western	Shire Endaslasi Town	04	OSSHD/UNHCR	978	4987
7	TI-0019	Adi Mahameday Full Elementary School		Open	14-Nov-20	Collective Center	North Western	Asgede	Adi Mahameday	OSSHD/UNHCR	712	3143
8	TI-0024	Adi Wenfito Elementary school		Open	8-Mar-21	Collective Center	North Western	Shire Endaslasi Town	03	OSSHD/UNHCR	719	3514
9	TI-0025	Adilha Secondary school		Open	1-Mar-21	Collective Center	Mekelle	Ayder Sub City	Adilha	IOM	263	1109
10	TI-0030	Adwa Industrial Zone (AIZ)		Open	22-Apr-22	Planned Camp/Site	Central	Adwa Town	Bet Yohannes	IOM	201	1152
11	TI-0211	Agazi Secondary School		Open	unknown	Collective Center	Eastern	Adigrat Town	2	OSSHD/UNHCR	151	548

12	TI-0034	Aksum Preparatory School		Open	15-Nov-20	Collective Center	Central	Axum Town	6	OSSHD/UNHCR	2909	15404
13	TI-0037	Alene Secondary School		Open	29-Apr-21	Collective Center	Mekelle	Semen Sub City	07	OSSHD/UNHCR	80	396
14	TI-0039	Animal Shade		Open	12-Feb-22	Collective Center	Central	Abi Adi Town		OSSHD/UNHCR	788	3171
15	TI-0041	Araya Kahsu Health Science College	Kindeya Arya Kahsu Nurse School	Open	18-Nov-20	Collective Center	Central	Axum Town	05	OSSHD/UNHCR	1979	9642
16	TI-0043	Arra Zuria 01	Special Force Hall	Open	14-Mar-21	Collective Center	North Western	Shire Endaslasi Town	02	OSSHD/UNHCR	320	1859
17	TI-0136	Atsede Kindergarten	Model Kindergarten	Open	22-Apr-22	Collective Center	North Western	Shire Endaslasi Town	02	IOM	275	1255
18	TI-0053	BGI Elementary School		Open	29-Nov-20	Collective Center	North Western	Shire Endaslasi Town	01	OSSHD/UNHCR	167	868
19	TI-0055	Comission	Commission	Open	21-Sep-21	Collective Center	Eastern	Adigrat Town	Kebele 05	IOM	54	217
20	TI-0058	Dehab Tesfay Women's Tranning Center		Open	2-Mar-21	Collective Center	North Western	Shire Endaslasi Town	04	OSSHD/UNHCR	387	1998
21	TI-0062	Edaga Hamus Comprehensive Secondary School	Edagahamus High school	Open	23-Feb-21	Collective Center	Eastern	Edaga Hamus Town	01	OSSHD/UNHCR	57	129
22	TI-0067	Embadanso Elementary school		Open	14-Nov-20	Collective Center	North Western	Shire Endaslasi Town	01	OSSHD/UNHCR	6160	27172
23	TI-0071	Enda TSION	Dr Tsegay Secondary School/Enda TSION Elementary School	Open	1-Jul-21	Collective Center	Central	Adwa Town	03	IOM	284	1042
24	TI-0203	Endabaguna Reception Center		Open	1-Apr-23	Collective Center	North Western	Endabaguna Town	Kebele 03	IOM	252	985

25	TI-0072	Endabaguna Screening Center 1 & 2		Open	1-Sep-22	Collective Center	North Western	Endabaguna Town	Kebele 02	IOM	117	495
26	TI-0078	Ethnographic Museum of Kunama	Museum Kunama	Open	24-Feb-21	Collective Center	North Western	Sheraro Town	Mussie	OSSHD/UNHCR	27	86
27	TI-0204	Farmers Training Center IDP Site	Adi Kahsu Farmers Training Centres	Open	19-May-23	Collective Center	North Western	Seyemti Adyabo	Adi-Nebried	IOM	155	811
28	TI-0083	First Menlik Secondary School	Kedamawi Menelik Secondary School	Open	16-Nov-20	Collective Center	Central	Axum Town	Nigiste Saba	OSSHD/UNHCR	1756	12401
29	TI-0084	Five Angels	5 Angels	Open	13-Jun-21	Planned Camp/Site	North Western	Shire Endaslasi Town	04	OSSHD/UNHCR	1750	8460
30	TI-0087	Fre Swuat Secondary School		Open	1-Apr-21	Collective Center	North Western	Shire Endaslasi Town	03	IOM	1821	7194
31	TI-0092	Guna Poultry Farm		Open	1-Jun-21	Collective Center	North Western	Shire Endaslasi Town	01	IOM	594	3078
32	TI-0093	Hadnet General Secondary School	Mayweyeni Secondary school	Open	13-Mar-21	Collective Center	Mekelle	Hadnet Sub City	18	OSSHD/UNHCR	3758	18792
33	TI-0097	Hawelti Secondary School	Fre-Abiyot Secondary School	Open	12-Nov-20	Collective Center	Mekelle	Qedamay Weyane Sub City	Selam	OSSHD/UNHCR	713	3832
34	TI-0100	Hibret Elementary School	Hibret IDP Sites	Open	10-Nov-20	Collective Center	North Western	Shire Endaslasi Town	03	OSSHD/UNHCR	8314	21488
35	TI-0102	HOP Temezabelti Maekele	HOP IDP Center	Open	13-Mar-21	Collective Center	Mekelle	Hawelti Sub City	17	OSSHD/UNHCR	495	2267
36	TI-0104	Kaleb Secondary School		Open	16-Nov-20	Collective Center	Central	Axum Town	Nigiste Saba	OSSHD/UNHCR	1433	7184
37	TI-0105	Ketema Hitsatse	Hitsat IDPs / Hitsatse Refugee Camp	Open	17-May-20	Collective Center	North Western	Asgede	01	OSSHD/UNHCR	2416	8151

38	TI-0111	Lekatit 11 Elementary School		Reopen	21-Mar-21	Collective Center	Mekelle	Semen Sub City	Lekatit	IOM	42	109
39	TI-0112	Lekatit 23 Secondary School		Open	1-Feb-21	Collective Center	Mekelle	Ayder Sub City	Marta	IOM	160	705
40	TI-0114	Lisanu Elementary School		Open	13-Mar-21	Collective Center	Central	Abi Adi Town	03 Kebele	OSSHD/UNHCR	414	1461
41	TI-0206	Mai Dumu		Open	23-Apr-24	Planned camp/site	North Western	Tahtay Koraro	Mai Dumu	IOM	1451	7273
42	TI-0207	Matchew IDP site	Old Education bureau	Open	17-Jan-24	Planned Camp/Site	Southern	Matchew Town	Matchew	OSSHD/UNHCR	5	17
43	TI-0121	May Gilgalot Ketema	Maygebel/Water Service/ Water Supply	Open	5-Jan-21	Collective Center	North Western	Sheraro Town	Sheraro	OSSHD/UNHCR	28	150
44	TI-0122	May Tsedo IDP Site	Quiha IDP Site / Quiha	Open	10-Feb-22	Collective Center	Mekelle	Kuiha Sub City	Quiha	OSSHD/UNHCR	259	827
45	TI-0123	Mayhansa Elementary school		Open	12-Nov-20	Collective Center	North Western	Asgede	Mayhansa	OSSHD/UNHCR	699	3841
46	TI-0126	Meda Agame Primary School		Open	6-Dec-20	Collective Center	Eastern	Adigrat Town	03	OSSHD/UNHCR	272	680
47	TI-0129	Mekelle Health Center		Open	21-Mar-21	Collective Center	Mekelle	Qedamay Weyane Sub City	17	OSSHD/UNHCR	59	291
48	TI-0130	Meles Zenawi Preparatory School		Open	1-Dec-20	Collective Center	Central	Abi Adi Town	03	OSSHD/UNHCR	2566	10978
49	TI-0131	Mesebo Secondary School		Open	1-Apr-21	Collective Center	Mekelle	Semen Sub City	Messebo	IOM	135	386
50	TI-0133	Midre Genet Elders Care Center	Midregenet IDP	Open	20-Jun-21	Collective Center	Mekelle	Qedamay Weyane Sub City	Hareya	OSSHD/UNHCR	41	204
51	TI-0134	Midregenet Secondary School	Midregenet Primary School	Open	1-Apr-21	Collective Center	North Western	Shire Endastasiie Town	04	IOM	367	1282
52	TI-0137	Momona Secondary School		Open	1-Apr-21	Collective Center	Mekelle	Hawelti Sub City	Memona	IOM	84	260
53	TI-0142	Ngste Saba Secondary School	Preparatory School	Open	1-Jul-21	Collective Center	Central	Adwa Town	05	IOM	567	2946

54	TI-0143	Ngste Saba Secondary School 1	Korea Secondary School	Open	1-Jul-21	Collective Center	Central	Adwa Town	Kebele 07	IOM	220	677
55	TI-0144	Ngste Saba Secondary School 2	Ngste Saba No 2 Elementary school	Open	22-Mar-22	Collective Center	Central	Adwa Town	06	IOM	93	287
56	SO-0493	Qoliji		Open	1-Jan-21	self-settled camp	Fafan	Babile (SM)	Anod	IOM	6896	42042
57	SO-0494	Qoliji 2		Open	2-Jan-21	self-settled camp	Fafan	Babile (SM)	Anod	IOM	10045	51953
58	TI-0149	Sebacare 4	70 Kare	Open	21-Sep-21	Planned Camp/Site	Mekelle	Adi Haki Sub City	Debregenet	IOM	2319	9868
59	TI-0152	Selekleka IDPs	Selekleka Farmers Training Center	Open	14-Jan-22	Collective Center	North Western	Laelay Koraro	01	OSSHD/UNHCR	1007	3148
60	TI-0153	Semaetat Elementary School		Open	13-Jan-21	Collective Center	North Western	Sheraro Town	Kuhilen	OSSHD/UNHCR	83	250
61	TI-0155	Setit Humera IDP site	Shade IDP Site / Manufacturing Shade	Open	27-Mar-22	Collective Center	Central	Abi Adi Town	03	OSSHD/UNHCR	472	1853
62	TI-0157	Shade Metal Work	Industry Shade/Sheraro Shede 2	Open	10-Nov-20	Collective Center	North Western	Sheraro Town	Seder	OSSHD/UNHCR	795	5308
63	TI-0158	Sheraro High School	Sheraro Secondary School / Sedr	Open	10-Nov-20	Collective Center	North Western	Sheraro Town	Seder	OSSHD/UNHCR	305	557
64	TI-0160	Sheraro TVET		Open	10-Nov-20	Collective Center	North Western	Sheraro Town	Seder	OSSHD/UNHCR	131	1302
65	TI-0161	Shire Agricultural College	Agricultural College	Open	1-Apr-21	Collective Center	North Western	Shire Endaslasic Town	02	OSSHD/UNHCR	451	1755
66	TI-0162	Shire General Secondary School	High School	Open	14-Nov-20	Collective Center	North Western	Shire Endaslasic Town	03	OSSHD/UNHCR	3313	15560
67	TI-0163	Shire Preparatory School		Open	21-Nov-20	Collective Center	North Western	Shire Endaslasic Town	05	OSSHD/UNHCR	1360	6936
68	TI-0166	Taba Weyane Elementary school	Taba Weyane Tsimat Primary School	Open	1-Jun-21	Collective Center	North Western	Shire Endaslasic Town	04	IOM	2440	8825
69	TI-0170	Tsehaye Elementary School		Open	1-Apr-21	Collective Center	North Western	Shire Endaslasic Town	02	IOM	1893	8723

70	TI-0173	UNMEE (Ex-UNMEE)	Old Airport	Open	22-Apr-22	Planned camp/site	Eastern	Adigrat Town	Kebele 04	IOM	487	2846
71	TI-0175	Wekma Elementary School	Wowokma Elementary School	Reopen	27-Nov-20	Collective Center	Central	Adwa Town		IOM	23	90
72	TI-0178	Wukar Dba Elementary School		Open	21-Mar-21	Collective Center	North Western	Shire Endaslasie Town	04	OSSH/UNHCR	920	4938

Appendix-C: List of Community Resource Centers with Area-based approach (ABA) CCCM approach.

Source: Ethiopia CCCM cluster (<https://data.humdata.org/dataset/cccm-cluster-ethiopia-master-list>)

S N	CCC M Site ID	Site Name	Alternate Site Name	Site Status	Site Open Date	Settlement Type	Zone	Woreda	Kebele	CCCM Managed	CCCM Approach	CCCM Agency-2025
1	ABA - TI-0018	Adihaki Sub City CRC		Open	3-Sep-24	Host-Community	Mekelle	Adihaki Sub City		Yes	ABA	IOM
2	ABA - TI-0004	Adwa CRC		Open	12-Oct-23	Host-Community	Central	Adwa Town	Debrichi	Yes	ABA	IOM
3	ABA - TI-0019	Endabaguna CRC		Open	1-Sep-24	Host-Community	North Western	Endabaguna Town		Yes	ABA	IOM
4	ABA - TI-0016	Shire CRC		Open	1-Jun-23	Host-Community	North Western	Shire Endaslasi town	Kebele 02, Kebele 03	Yes	ABA	IOM
5	ABA - TI-0002	Abi Adi DIC	Abi Adi City	Open	1-Jan-23	Host-Community	Central	Abi Adi Town		Yes	ABA	OSSHD/UNHCR
6	ABA - TI-0020	Adwa DIC	Adwa YMCA	Open	1-Mar-24	Host-Community	Central	Adwa Town		Yes	ABA	OSSHD/EHF/COOP I
7	ABA - TI-0007	Axum DIC	Mahberawi Guday Atsedo Hitsanat, Axum City	Open	1-Jan-23	Host-Community	Central	Axum Town		Yes	ABA	OSSHD/UNHCR
8	ABA - TI-0010	Maichew DIC	Maichew Youth center	Open	1-Aug-23	Host-Community	Southern	Maichew Town	Maichew	Yes	ABA	OSSHD/UNHCR
9	ABA - TI-0012	Quiha DIC	Quiha Sub City	Open	1-Apr-22	Host-Community	Mekelle	Quiha Sub City	Quiha	Yes	ABA	OSSHD/UNHCR
10	ABA - TI-0014	Sheraro DIC		Open	1-Mar-24	Host-Community	North Western	Sherato town		Yes	ABA	OSSHD/EHF/IRC
11	ABA - TI-0016	Shire DIC	Kebele 04 Security bureau Shire	Open	1-Oct-23	Host-Community	North Western	Shire Endaslasi town	04	Yes	ABA	OSSHD/UNHCR

Appendix-D: Neighborhood Approach (ABA) pilot project questionnaire

Questionnaire

Survey Info													
1.Name of Enumerator:								6.Region:					
2.Gender of Enumerator:				Male <input type="checkbox"/> Female <input type="checkbox"/>				7.Zone:					
3.Date of Interview:								8.Wereda:					
4.IDP Center:								9.Sub city:					
5.IDP Block:								10. Kebele:					
Consent													
<p>Declaration: Hi my name is _____</p> <p>I am here for an intention questions/survey to understand the perception of the IDPs to be integrated in to the host community and your answers will not affect the services you are receiving.</p> <p>If you find a question you are not willing to answer, feel free to tell me don't want to answer, you can leave, no problem, and you can end the interview at any time.</p>													
A-Basic information about Beneficiaries:													
A1. Are you the head of your household?							Yes <input type="checkbox"/> No <input type="checkbox"/>						
A1.1. If NO, what is the gender of the head of the household?									Male <input type="checkbox"/> Female <input type="checkbox"/>				
A2. Gender of respondent				Male <input type="checkbox"/> Female <input type="checkbox"/>				A3. What is your age?					
A4. How many close members of your household are living in this IDP center, including yourself?													
< 1		1-5		6-17		18-45		46-59		60+		Total	
M	F	M	F	M	F	M	F	M	F	M	F		
A5. Where were you living before you were displaced?									Zone:				
Wereda:				Tabiya/Kebele:				Kushet:					
B-Intentions:													
B1. Are you living in the IDP center?							Yes <input type="checkbox"/> No <input type="checkbox"/>						
B1.1. If YES, Name of the IDP center:													
B1.2. If YES, What are your main needs at this IDP center? (select top 3)							<input type="checkbox"/> Food <input type="checkbox"/> WASH <input type="checkbox"/> Shelter <input type="checkbox"/> NFI <input type="checkbox"/> Protection <input type="checkbox"/> Livelihood support <input type="checkbox"/> Legal support for ID cards <input type="checkbox"/> Peace building forums <input type="checkbox"/> Infrastructure rehabilitation <input type="checkbox"/> Education <input type="checkbox"/> Health <input type="checkbox"/> Other, specify <input type="checkbox"/> Don't know/prefer not to say						
B1.3. If NO, Where do you live currently?							<input checked="" type="radio"/> With family/relatives/friends <input type="radio"/> In temporary individual shelters <input type="radio"/> In rented shelters <input type="radio"/> In communal shelters						

	<input type="radio"/> In the open <input type="radio"/> Other, specify <input type="radio"/> Don't know/prefer not to say
B2. If you had to leave your current collective center, where would you rather go?	<input type="radio"/> Camp near place of displacement <input type="radio"/> Family/relative/friends <input type="radio"/> Host community near the IDP center <input type="radio"/> Place of origin <input type="radio"/> Place of relocation <input type="radio"/> Other, specify <input type="radio"/> Unknown
B2.1. If the answer is Family/relative/friend, what support is needed to live with the host community?	<input type="radio"/> NFI <input type="radio"/> Cash <input type="radio"/> Bedding <input type="radio"/> Food <input type="radio"/> Shelter Items <input type="radio"/> None <input type="radio"/> Other, specify
B2.2. If the answer is host community near the IDP center, what support is needed to live with the Family/relative/friend?	<input type="radio"/> NFI <input type="radio"/> Cash <input type="radio"/> Bedding <input type="radio"/> Food <input type="radio"/> Shelter Items <input type="radio"/> None <input type="radio"/> Other, specify
B3. Are some members of your HH/immediate family members currently living outside this IDP Center? Yes <input type="checkbox"/> No <input type="checkbox"/>	
B3.1. If YES, how many are they?	
B3.2. If YES, Why are you and your family members not living together?	<input type="radio"/> Employment <input type="radio"/> Schooling <input type="radio"/> No money to pay for the transport <input type="radio"/> Road is not safe to travel <input type="radio"/> Location is not safe to live <input type="radio"/> Separated when fleeing <input type="radio"/> Physical immobility of some family members (e.g. physical or mental disability, elderly, etc) <input type="radio"/> Some family was left behind to guard the house/property <input type="radio"/> Short-term separation to visit friends/family, attend events, etc. <input type="radio"/> Other, specify
B3.3. Are any family members planning to come and live with the family? Yes <input type="checkbox"/> No <input type="checkbox"/>	
B3.4. If YES, What are the extra needs of the family members to accommodate family member?	<input type="radio"/> NFI <input type="radio"/> Cash <input type="radio"/> Bedding <input type="radio"/> Food <input type="radio"/> Shelter Item <input type="radio"/> None <input type="radio"/> Other, specify
B4. Do you have vulnerable, children and elder peoples in the family? Yes <input type="checkbox"/> No <input type="checkbox"/>	
B4.1. If YES, how many are they?	
B4.2. If YES, please mention its type/nature of vulnerability?	
B5. Do you intend to return to your habitual areas of residence? Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/>	
B5.1. If NO/Not sure What are the 3 most important reasons for staying? (3 responses)	
<input type="checkbox"/> Good conditions/services in <input type="checkbox"/> Access to specific health/disability services in the site <input type="checkbox"/> Access to work in the site	<input type="checkbox"/> Lack of services in area of return <input type="checkbox"/> No job in area of return <input type="checkbox"/> Insecurity in area of return

<input type="checkbox"/> No means/money to go <input type="checkbox"/> Uncertainty / disagreement about where to go		<input type="checkbox"/> Cultural Reasons <input type="checkbox"/> My house is destroyed or occupied <input type="checkbox"/> Other	
B6. Do you have family/relative/friend residing in Mekelle?			Yes <input type="checkbox"/> No <input type="checkbox"/>
B6.1. If YES Please provide type/nature of relationship:			
B6.2. If YES Do you visit him/her regularly?		Yes <input type="checkbox"/> No <input type="checkbox"/>	
B6.3. How close is your relationship?		<input type="checkbox"/> Very close <input type="checkbox"/> Close <input type="checkbox"/> Not much	
B6.4. Does your family/relative/friend reside in his/her own home?			Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/>
B6.5. Is the family/relative/friend/ have an interest to host you with your family?			Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/>
B6.5.1. For how long do the IDPs/ Beneficiaries families intend to stay in host communities?		<input type="radio"/> 6 months or less <input type="radio"/> 6-12 months <input type="radio"/> 1-2 years <input type="radio"/> More than 2 years <input type="radio"/> Don't know/prefer not to say	
B6.5.2. If NO/Not sure, What are the reasons?		<input type="checkbox"/> No extra rooms <input type="checkbox"/> Small size of plot area <input type="checkbox"/> Living in rented house <input type="checkbox"/> Large family size <input type="checkbox"/> Having vulnerable family <input type="checkbox"/> Financial problem <input type="checkbox"/> Lack of service amenities <input type="checkbox"/> Other, specify	
B6.6. Does your household members intend to move if some improvement done in your family/relative/friend home?			Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/>
B6.6.1. If YES how you could help to the host family?		<input type="checkbox"/> Livelihood work <input type="checkbox"/> Domestic work <input type="checkbox"/> Financial <input type="checkbox"/> Other, specify	
B6.6.2. What skill/s do you have to assist the host family?		<input type="checkbox"/> Carpenter <input type="checkbox"/> Plumber <input type="checkbox"/> Mason <input type="checkbox"/> Welder <input type="checkbox"/> Painter <input type="checkbox"/> Electrician <input type="checkbox"/> Chef <input type="checkbox"/> Other, specify	
Comments:			

Focus Group Discussion (FGD)

FGD questions for Beneficiaries:	
1.	What is your intention/perception towards the ‘Neighborhood Approach’ which is an integration of IDPs with host community?
2.	Willingness of the target community IDP/Beneficiaries to relocated to host community?
3.	What could be the possible selection criteria for beneficiary? Consider women’s, elder and vulnerable peoples receive greater respect and attention! Discus also the requirements with beneficiary committee and local authority.
4.	Do you think the quality of life/services in host community will be better than collective/ IDPs centers?
5.	What improvements should be done in the house of host community to accommodate beneficiaries’ family?
6.	Have you ever thought about leaving the IDP center? If so, why, when and where? Please name 3 reasons

Key Informant Interview (KII)

Neighborhood approach project (ABA in shelter application) in Mekelle_ project evaluation

Dear all:

Following the 2022 Neighborhood approach project in Mekelle. It is important to conduct the following evaluation as a lesson learned and future improvement. The questionnaires have three parts namely: assessment and design of project, implementation and Evaluation and learning.

1. Assessment and design of project

1. How much of the project is participatory in terms of different stockholders (NGO, local government, beneficiaries etc)?

2. How do u see the project in term of identifying the right location and context?

3. Does the project is in realistic timeframe for the IDPs / beneficiaries?

2. Implementation

4. Is the approach people-centered actions during the implementation?

5. How the project handle in working with existing structures (local government, NGO local actors etc)?

6. How sectors and programmes are collaborating during the implementation and how do you evaluate its importance (*consider humanitarian architecture/organization*)?

7. How are the tools, funding flows and administrative requirements flexible enough?

8. How the internal system including HR, finance etc. is nimble to all program?

3. Evaluation and learning

9. How the project is potential for adoption and scale up?

10. How is the impact or contribution of the project in wider communities /city?

Appendix-E: Field mission and physical observations

From 2022 to early 2026, numerous continuous field visits were conducted to support the ethnographic (multi-sited) and longitudinal (trend) study. Physical observations were undertaken to examine the impacts of war and conflict on housing damage and population displacement. IDPs were observed across various shelter and settlement typologies, including private accommodations (such as shared host-family arrangements or rented rooms), existing buildings used as temporary shelters (including abandoned houses and public buildings, mainly schools and storage facilities), and temporary accommodation sites such as camps with tarpaulin shelters and tents. In addition, returnee IDPs and war-affected communities were observed residing in repaired or reconstructed shelters.

The field observation also examined coordination and service provision for IDPs living outside of sites, who can access services at Drop-in Centers (DICs) and, on the other hand, at Community Resource Centers (CRCs), which deliver services to both displaced and host communities. Both centers provide support through an Area-Based Approach (ABA). In addition, the study explored traditional vernacular housing and the landscape of Tigray across villages and traditional neighborhoods in urban areas, with visits to all accessible areas of Tigray to observe variations in vernacular house architecture.

The physical observations include:

- Identifying the size, shape, materials, and layout of accommodations
- Different types of spaces: private and public
- Population size and the use of communal facilities
- Daily activities, interactions, and the spaces used
- Basic services (WASH, health, education, etc.), facilities, and their standards
- Shelter repair and house reconstruction
- Urban and rural settings, and the types of houses and shelters provided
- The way of life of both displaced and host communities