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**Impact of Urban Expansion and Forced Eviction on
Livelihood Security of Peri-Urban Farming Households in
Addis Ababa, Ethiopia**

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April 2026

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Abstract:

This research provides a comprehensive analysis of the impacts of urban expansion on the livelihoods of farmers in peri-urban villages around Addis Ababa, Ethiopia. The study employs a mixed-methods approach, combining quantitative analysis through logistic regression and indices and qualitative insights from focus group discussions and interviews. It examines demographic characteristics, the extent of land expropriation, and various factors influencing the sustainable livelihood security (SLS) of evicted and non-evicted households.

The study reveals that the evicted households are approximately 92.3% less likely to achieve sustainable livelihood security compared to non-evicted households, underscoring the severe consequences of displacement. Eviction significantly reduces the odds of being economically secure by 72.7%, demonstrating the long-term economic impacts of forced eviction. A dramatic decline in food security is observed among evicted households, with only 8.07% remaining food secure post-eviction compared to 80.27% pre-eviction. Evicted households experience decreased ability to eat enough food throughout the year, reduced variety and adequacy of food, fewer meals per day, and limited access to healthy and nutritious food. Recurrent themes from the interviews include insufficient compensation for lost land and livelihoods, highlighting the need for fair, comprehensive and intergenerational compensation mechanisms. The study reveals a significant erosion of trust in government authorities among evicted communities, potentially hindering future development initiatives.

These findings emphasise the urgent need for robust land tenure policies, fair compensation mechanisms, and comprehensive support programs to mitigate the adverse effects of urban expansion. The study underscores the importance of a more inclusive and equitable development model that respects the rights and dignity of affected communities, ensuring their livelihoods are sustained amidst urban growth.

The study advocates for tripartite development model using Peri-urban Farmers-Public-Private Partnerships (PuFPPP), encouraging the participation of Peri-urban Farmers and the private sector in Peri-urban development projects. The development of partnership models that benefit businesses and local communities must be emphasised.

By identifying significant predictors of household livelihood security and highlighting the struggles faced by evicted households, this research provides valuable insights for policymakers and urban planners in developing sustainable urban expansion strategies that balance urban growth with the preservation of agricultural livelihoods and community well-being.

Key words: *Addis Ababa; Compensation mechanisms; Displacement; Economic security; Food security; Forced eviction; Land expropriation; Peri-urban agriculture; Sustainable livelihood security (SLS); Urban expansion.*

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Abbreviations

AA — Addis Ababa

ACZ — Agricultural Zone

Afosha — Traditional mutual-aid association (Ethiopia)

ANT – Actor-Network Theory.

BLR – Binary Logistic Regression (model).

C&S R^2 — Cox & Snell R^2

CAPI — Computer-Assisted Personal Interviewing

CBD – Central Business District.

CI — Confidence Interval

CI / Ci — Livelihood Capital Index (for example, natural, human, social, physical, financial) DAG — Directed Acyclic Graph df — Degrees of Freedom

DFID — (UK) Department for International Development

DiD — Difference-in-Differences

DIDR — Development-Induced Displacement and Resettlement

DV / IVs — Dependent Variable / Independent Variables (*regression context*)

ECS / ECSI — Economic (Capital) Security / Index

ECSI — Economic Capital Security Index

EEl — Economic Efficiency Index

EPRDF — Ethiopian People's Revolutionary Democratic Front

ESI — Economic Security Index

ESS – Ethiopian Statistics Service.

ETB — Ethiopian Birr

Exp(B) — Exponentiated coefficient (odds ratio)

FAO — Food and Agriculture Organization (UN)

FGD — Focus Group Discussion

FGD(s) — Focus Group Discussion(s)

FPIC — Free, Prior and Informed Consent

FSI — Food Security Index

GIS — Geographic Information System

GS – Governance Structures (in the SES Framework).

H_0 / H_1 — Null / Alternative Hypothesis

Ha — Hectare

HCSI — Human Capital Security Index

HECSI — (Household) Economic Capital Security Index

HECSI — Household Economic Capital Security Index

HH / HHs — Household / Households

H–L test — Hosmer–Lemeshow goodness-of-fit test HLD

(Index) — Household Livelihood Diversity (Index) HLS –

Household Livelihood Security (domains).

HLS (Index) — Household Livelihood Security (Index)

HLV (Index) — Household Livelihood Vulnerability (Index) HMC — Howrah
Municipal Corporation

HQLI — Home Quality of Life Index

IAD – Institutional Analysis and Development (Framework).

ICT — Information and Communication Technology

ICT-SI — Information & Communication Technology Security Index

IFS — Integrated Farming System

ISI — Infrastructure Security Index

ISLSI — Intertemporal Sustainable Livelihood Security Index

IV — Instrumental Variable (*causal inference*)

Kebele — Neighborhood/lowest administrative unit (if used)

KII — Key Informant Interview km² — Square kilometre

LAI — Livelihood Asset Index

LDA — Linear Discriminant Analysis

LR — Logistic Regression

LSI — Livelihood Security Index

LSI / SLI — (Composite) Livelihood Security Index

LTSI — Land Tenure Security Index

LULC — Land Use / Land Cover m²

— Square metre

MFI — Microfinance Institution

MoUDC — Ministry of Urban Development and Construction (Ethiopia) MSME —
Micro, Small and Medium Enterprises

M–W — Mann–Whitney (U) test

Nagelkerke R^2 — Adjusted pseudo R^2

NGO — Non-Governmental Organization

NRLM — National Rural Livelihood Mission (India)

NYU — New York University (in Ethiopia Urban Expansion Initiative context)

OR — Odds Ratio

OR — Odds Ratio ($Exp(B)$) p — p-value

(statistical significance level)

PASI — Physical Assets Security Index

PSM — Propensity Score Matching

PuFPPP — Peri-urban Farmers–Public–Private Partnership

PUI — Peri-Urban Interface

PUSLS – Peri-Urban Sustainable Livelihood Security.

p-value — Probability value r — Effect size (rank-

biserial/correlation)

R^2 — Coefficient of Determination (pseudo R^2 in logistic)

R^2 (Cox & Snell / Nagelkerke) — Pseudo-R-squared fit indices

RCT — Randomized Controlled Trial

RS — Remote Sensing

RS – Resource System (in the SES Framework; for example, land use system).

RU – Resource Units (in the SES Framework; for example, biodiversity units, water).

SD — Standard Deviation

SDG(s) – Sustainable Development Goal(s).

SE / S.E. — Standard Error

SEI — Social Equity Index

SES – Social-Ecological Systems (Framework).

SLA — Sustainable Livelihood Approach

SLF — Sustainable Livelihoods Framework

SLI — Sustainable Livelihoods Index

SLS — Sustainable Livelihood Security

SLSI — Sustainable Livelihood Security Index

SPSS — Statistical Package for the Social Sciences

SSI — Social Security Index

SSN — Social Safety Nets

Sub-city — Second-tier city administration under Addis Ababa/Sheger

SUHI — Surface Urban Heat Island

SUHII — Surface Urban Heat Island Intensity

TAM — Technology Acceptance Model

TGA — Total Geographical Area

TVET — Technical and Vocational Education and Training

U — Mann–Whitney U statistic

U / Z — Mann–Whitney statistic / Standard score

ULUE — Urban Land Use Efficiency

UN — United Nations

UNDP — United Nations Development Programme

UN-Habitat — United Nations Human Settlements Programme

VIF — Variance Inflation Factor

WASH — Water, Sanitation and Hygiene

Woreda — District (administrative unit in Ethiopia) z

— Standardised test statistic (z-score)

-2LL — Minus Two Log Likelihood

CHAPTER 1: INTRODUCTION

1.1 Introduction

Chapter 1 introduces the study of the impact of urban expansion on the livelihoods of the peri-urban communities in Addis Ababa, Ethiopia. The chapter begins by delineating the contextual background of the problem, articulating the problem statement, defining the purpose, defining the methodology, articulating research objectives, formulating research questions, presenting hypotheses, clarifying the significance of the study, and establishing the theoretical framework. In addition, the nature of the study and the main definitions are discussed in this chapter.

1.2 Background of the Problem

The expansion of urban areas to peripheral indigenous communities has resulted in farmers losing land and sustainable livelihoods and making them very vulnerable to the negative externalities of urbanisation. Africa is one of the least urbanised continents in the world, but its urban growth rate is the fastest in the world. Addis Ababa is Ethiopia's capital and African diplomatic centre and one of the fastest-growing cities on the continent. Addis Ababa's population was estimated at 3.86 million in 2022, accounting for 16.2% of Ethiopia's 23.8 million urban inhabitants (ESS, 2022). Ethiopia's urban population is increasing by 5% per annum (MoUDH, 2016). At present, it is estimated that the urban population is 22.63% of Ethiopia's 105.2 million inhabitants (ESS, 2022). Addis Ababa was founded in the 1880s by Emperor Menilek (1889–1913), mainly on the farmland and residential villages of the indigenous Oromo people. Then the city became the political and economic capital of Ethiopia (Dibaba, 2018). Recently, the land area of the city of Addis Ababa has tripled and expanded from 99 km² in 1987 to 283.9 km² in 2017 (Terfa et al., 2019a). The Addis Ababa city expansion is one of the methods of land grabbing similar to developing countries

(Peluso & Lund, 2011). The expansion of Addis Ababa city to arable land is at the expense of the livelihoods of farming communities. It has dramatically affected the livelihoods and quality of life of rural communities that depend on agriculture as their main economic activity.

The displacement of peri-urban dwellers due to urban expansion has become a severe socioeconomic and political problem for farming communities living in the surrounding cities in Ethiopia. Peri-urban farmers' evictions from their agricultural land for land redevelopment is a continuous process that negatively affects their livelihoods (Mohammed et al., 2020).

Urban expansion-induced displacement has negatively affected marginalised farming communities and forced them to lose their land, agricultural production, livestock, and other land assets. A study conducted in central Ethiopia revealed that farmland conversion has negatively impacted the overall livelihood assets of peri-urban dwellers in Addis Ababa (Tufa & Megento, 2022). Due to urban expansion in the suburbs, completely displaced people in Addis Ababa still need to establish a comparable means of income and pursue an asset-depleting consumption style (Kasa et al., 2011).

Although several studies have been conducted on the impacts of urban expansion-induced displacement in peri-urban communities, most deal with the impacts of urban expansion on income and poverty in the face of urban sprawl. Some other studies focus on the shortage of urban land for residential purposes for urban dwellers. Other previous research focuses on analysing the environmental implications of urban expansion. Most studies relied on qualitative evidence, while empirical data were lacking, particularly in Addis Ababa. The effects of displacement caused by urbanisation on the security of sustainable livelihoods have yet to be

examined in urban environments. Nevertheless, ongoing research seeks to address the limitations of prior studies by employing a sustainable livelihood security framework and empirical data in conjunction with a thorough binary logistic regression model.

1.2.1 Sustainable Livelihoods

Sustainable livelihood security is having sufficient and reliable access to income and resources to meet fundamental needs, such as food, clean water, education, healthcare, housing, time for community engagement, and social inclusion.

Chambers and Conway (1992) defined sustainable livelihoods as follows.

"A livelihood includes the skills, resources, and activities necessary to make a living. A sustainable livelihood can withstand and recover from shocks, improve its resources, and offer opportunities for future generations. It should also bring positive benefits to other livelihoods locally and globally, both in the short and long term."

Livelihood resources, defined as the material and social, tangible and intangible assets that people utilise to sustain their livelihoods, are conceptualised within the Sustainable Livelihoods Framework as five forms of capital: natural, physical, human, social, and financial capital (Chambers & Conway, 1992; Department for International Development (DFID), 1999).

1.2.2 Sustainable Livelihood Security Index

The operational definition of sustainable livelihood security was prepared based on DFID's four dimensions of sustainable livelihood security: a livelihood that is ecologically secure, economically efficient, socially equitable, and institutionally supportable (DFID, 1999).

Kamaruddin and Samsudin (2014) used the Sustainable Livelihoods Index (SLI) to measure all the livelihood elements of poor rural households comprehensively.

Sustainable Livelihoods Security Index (SLSI) evolved from the Sustainable Livelihood Approach (SLA) framework. Kamaruddin and Samsudin (2014) identified 22 livelihood assets and outcome indicators from the data set. They are broadly grouped into five groups of assets, namely human, physical, natural, social, and financial assets, and two groups of livelihood outcomes: food security and health status. The study concluded that although income and SLI moved in the same direction, SLI is a more analytically rigorous tool to assess the ability and preparedness of the rural poor than the regular use of household income level alone (Kamaruddin & Samsudin, 2014).

Similarly, SLSI is used to measure livelihood sustainability concerning social, economic, and ecological indicators. Twenty indicators were selected and framed them within the ecological, economic, and social dimensions of sustainable development for the Indian West Coast. Among the 20 indicators, forest cover, net sown area, milk availability, groundwater availability, land productivity, food grain availability, rural road connectivity, electrified villages, and land degradation were critical. The study concludes that the West Coast region, in terms of its levels of sustainable development, improved significantly with a focus on low-SLSI districts considering ecological, economic, and social dimensions in planning for technological development and dissemination (Krishna et al., 2020).

Akter and Rahman(2017) constructed indices of Household Livelihood Security (HLS) domains, namely economic, food, health, and education securities and empowerment, with data from 1,120 poor households in two urban settlements of Bangladesh. Akter and Rahman(2017) jointly identified domain-specific socioeconomic determinants using a multivariate Tobit model. Akter and Rahman(2017) concluded that the HLS domains were significantly positively correlated and that many factors significantly influenced the individual HLS domains. Interventions aimed at improving education,

provision of business training, and building land assets are suggested to improve livelihood security.

Previous studies such as Akter and Rahman(2017) on sustainable livelihoods of peri-urban farming communities are not framed in the peri-urban Sustainable Livelihood Security (SLS) model.

1.2.3 Urbanisation Induced Displacement

Urbanisation-induced displacement is a global issue. The study conducted by Sati et al.(2017) on urbanisation in the administration of the city of Xicheng (XCA) in China found that due to urban expansion, the paddy fields and grasslands of the selected villages decreased by 16.6 km² (4.9%) and 35.43 km²(8.4%), respectively. As a result of urbanisation, outmigration and medical and educational facilities have increased, while agriculture and livestock activities have decreased (Sati et al., 2017).

Similarly, a study conducted by Onyebueke et al. (2020) in Nigeria examined the clashes between customary tenure regimes and statutory practices dictated by urban laws and how different stakeholders are appropriating them to promote and resist displacement or eviction. Onyebueke et al. (2020) recommended new tenure security and an integrated urban planning approach that protects the encroachment pressures on peri-urban communities in Nigerian cities (Onyebueke et al., 2020).

A similar study conducted by Lasisi et al. (2017) in Osun State of Nigeria concluded that 72% of the farmers interviewed feared losing their farmland to development projects. This fear arises because 16.1% of farmers previously lost 1 to 2 acres of farmland due to urban expansion (Lasisi et al., 2017).

A study conducted by Gwan (2017) on the impact of urban expansion on the livelihood of farming households in Bamenda II and Bamenda III, Cameroon, shows that the expansion process has affected farmers' income, farm sizes and types, natural capital,

and living standards. Most farmers have employed coping measures, including diversifying income opportunities, social networking, agricultural intensification, and borrowing (Gwan, 2017).

The study conducted by Tassie (2018) in Bahir Dar city of Amhara region of Ethiopia concluded that urbanisation-induced development has displaced farmers from their agricultural landholding system. Farmers in peri-urban areas are losing enormous farmland due to urban expansion (Tassie, 2018). A study conducted by Kebede and Singh (2021) in Sebeta Hawas and Sululta Woredas of the Fininfine zone of the Oromia region concluded that nearly one-fifth of the 400 sample households lost their entire farmland due to urban expansion-induced land acquisition, more than one-fourth of the sample households lost nearly two hectares of their farmland (Kebede and Singh, 2021).

A study conducted by Weldearegay et al. (2021) in Tigray, northern Ethiopia, on the impact of urban expansion on the poverty of peri-urban smallholder farmers revealed that the prevalence of poverty among displaced households was 5% higher than that of non-displaced households. The intensity and incidence of poverty were also higher among displaced households. The prevalence of poverty was higher among evicted farmers (Weldearegay et al., 2021).

Girma (2016) conducted a study in Sululta city of Oromia region revealed that urbanisation has displaced farmers from their farms and livelihoods. Similarly, the expansion of the town of Wolaita Sodo needed to be more participatory, marginalised, and negatively affected the livelihood of the displaced farming community (Lukas, 2017). The study conducted in Assosa (Labiso, 2020) indicated that due to urban expansion to peripheral farming communities in the city of Assosa, there is infrastructural improvement, socioeconomic growth, rapid population growth and

socioeconomic problems related to urban expansion in the studied area. However, the study did not measure the significance of improvements in the livelihood of the farming community.

Contrary to the study conducted in Assosa City by Labiso (2020), Ahlam (2017) concluded that urban expansion into peripheral farming communities decreased the income earned from agricultural production (both from crops and livestock) and increased the displacement of the farming community.

In Gonder City, urban expansion-induced displacement has negatively affected marginalised farming communities and forced them to lose their land, agricultural production, livestock, and other land assets (Alemineh, 2018). The study also found that the expansion of urban areas has far-reaching consequences on the social life of affected communities. For example, family disturbance, neighbour conflict, and seasonal migration were among the social problems encountered by evicted households (Alemineh, 2018). Another study conducted by Mohammed et al. (2020) in the Amhara region, concluded that the eviction of peri-urban farmers from their indigenous land for land redevelopment is a continuous process that negatively affects the livelihood of farming communities.

Although displaced farming communities, due to urban expansion, secured access to certain services, they also suffered effects such as the loss of agricultural land and other assets, including grazing land, resulting in a change in their livelihoods and unfair compensation (Worku, 2020).

On the contrary, in Atsi Womborta in the Tigray region of Ethiopia, urban expansion has increased housing rooms and job opportunities and improved the quality of life of peri-urban communities (Girmay & Woldeamanuel, 2022). A study conducted by Eshetu (2017) in Sebeta city in the Oromia region, found that urbanisation improved

access to better social services and infrastructure and landowners displaced due to urbanisation were compensated (Eshetu, 2017).

Existing studies on urbanisation-induced displacement in Ethiopia predominantly emphasise the loss of agricultural land. However, most of this literature overlooks the extent to which displaced households experience losses or gains across the full range of livelihood assets within the sustainable livelihood security framework, including social, economic, human, natural, and physical capital. This study seeks to address this gap by adopting a comprehensive approach that accords equal analytical weight to all livelihood assets, thereby enabling a more holistic assessment of livelihood security outcomes.

1.3 Statement of the Problem

Urban expansion is a means of land grabbing in developing countries (Peluso & Lund, 2011). The urban land area of Addis Ababa city has increased by displacing farming communities threefold, from 99 km² in 1987 to 283.9 km² in 2017 (Terfa et al., 2019b). The expansion of Addis Ababa city into arable land is at the expense of the livelihoods of the farming communities. It has dramatically affected the livelihoods and quality of life of rural communities that depend on agriculture as their main economic activity (Mohammed et al., 2020).

Mohammed et al. (2020) concluded that the displacement of peri-urban dwellers due to urban expansion has become a severe socioeconomic and political problem for the farming communities that live in the surrounding cities in Ethiopia. Eviction of peri-urban farmers from their indigenous land for land redevelopment is a continuous process that negatively affects the livelihood of farming communities (Mohammed et al., 2020).

Urban expansion-induced displacement has negatively affected marginalised farming communities and forced them to lose their land, livestock, and other land assets. For example, in Sululta, the town of Oromia, urbanisation has positive and negative consequences on human life. The farming communities in Sululta town are victims of the negative impacts of urbanisation, such as displacement, unemployment, food insecurity, and homelessness. They lost their original way of life, particularly agricultural practices. Local farmers are displaced from their original habitat. As a result, they lost their social, cultural, and economic livelihoods (Girma, 2016). The conversion of farmland has negatively affected the overall livelihood assets of peri-urban dwellers in Addis Ababa. In the suburbs of Addis Ababa, entirely displaced people due to urban expansion into the suburbs still need to establish a comparable means of income earnings, and they are pursuing an asset-depleting consumption style (Kasa et al., 2011).

A substantial body of literature has examined the effects of urban expansion-induced displacement on peri-urban communities in Addis Ababa and other Ethiopian cities. Nevertheless, the implications of urbanisation-driven displacement for holistic and sustainable livelihood security remain inadequately explored in the context of Addis Ababa. Existing studies largely concentrate on income loss and poverty dynamics associated with urban sprawl in peri-urban rural settings. Other strands of research focus on urban land scarcity and residential land supply challenges faced by urban populations, while additional studies analyse the environmental consequences of urban expansion. Overall, much of the existing literature relies predominantly on qualitative evidence, with limited application of rigorous empirical analysis, particularly in studies conducted in Addis Ababa.

Accordingly, this study quantitatively examines the impacts of urbanisation-induced displacement using a sustainable livelihood security framework supported by empirical household-level data and analysed through a binary logistic regression model. By doing so, the research addresses a critical gap in the literature and provides systematic evidence on the misalignment between urbanisation policy objectives and the actual practices of urbanisation-induced displacement affecting peri-urban farming communities in Addis Ababa.

1.4 The purpose statement

The purpose of this mixed-methods research was to explicate the mismatch between Addis Ababa's urbanisation policy and the urbanisation-induced displacement practices in the peri-urban farming communities living in the suburbs of the city.

1.5 The research aim

This study aimed to investigate the impacts of urban expansion on the sustainable livelihood of farming communities in the peri-urban villages of Addis Ababa and its surroundings.

1.6 Research Objectives

The research objectives were the following.

- a. Identify and compare the sustainable livelihood security of agricultural communities in the evicted and non-evicted peri-urban areas of Addis Ababa and its surroundings.
- b. Examine the impacts of urbanisation-induced eviction on the sustainable livelihood of peri-urban farming households.
- c. Investigate the impact of urbanisation-induced eviction on the economic security of peri-urban farming households.

- d. Assess the significance of the impact of urbanisation-induced displacement on the food security status of peri-urban farming households.

1.7 Research Hypothesis

The hypothesis of this research includes the following:

- a) H₁: Sustainable Livelihood Security (SLS) of the evicted and non-evicted households is different.
- b) H₂: Forced evictions significantly affect the livelihood security of peri-urban farming households.
- c) H₃: Urban expansion-induced eviction significantly impacts the economic security of peri-urban farming households.
- d) H₄: There is a significant difference between the food security status of evicted and non-evicted households.
- e) H₅: Urban expansion-induced eviction significantly affects the food security of peri-urban agricultural households.

1.8 Research Questions

The search questions that emerged from the research objectives are as follows:

1. How do forced evictions resulting from urban expansion affect the livelihood security of peri-urban households?
2. Are there differences between the livelihood security of the evicted and non-evicted households in the study area?
3. Are there significant differences in economic/financial income disparities between evicted and non-evicted peri-urban households due to urban expansion, and how does this affect their economic well-being?
4. How do urban expansion and forced eviction influence the various components of livelihood security, including economic, social, human, land, physical capital,

infrastructure service, Information Communication Technology (ICT), and food security) affect the impacts of urban expansion and eviction and associated factors?

5. How have urban expansion and forced evictions affected the food security of peri-urban farming households?

1.9 Significance of the Study

The findings of this study carry substantial importance and generate wide-ranging implications for urban planning practice, public policy formulation, and the pursuit of sustainable development. The value of this study lies in its ability to provide insights that foster more sustainable, equitable, and inclusive urban development approaches. Specifically, this study presents empirical data on the effects of urban expansion on peri-urban livelihoods, which is particularly pertinent in the context of increasing urbanisation and its impacts on adjacent peri-urban areas, especially in developing nations such as Ethiopia.

This research is instrumental for urban planners and policymakers in Ethiopia and other comparable emerging nations. By analysing the effects of urban expansion on peri-urban communities, the study helps to craft comprehensive, socio-economically inclusive, and environmentally sustainable urban development strategies. Findings can facilitate the formulation of policies that balance urban expansion with the needs and rights of peri-urban inhabitants.

The study offers a detailed evaluation of the impact of urban expansion on the livelihoods of peri-urban populations, including changes in employment dynamics, income levels, resource availability, and overall living standards. This information is

crucial to understanding the socioeconomic dynamics at the intersection of urban and rural areas and devising targeted measures to mitigate any adverse effects.

Given that peri-urban areas often serve as significant food suppliers for urban populations, understanding the consequences of urban expansion is imperative for effective food security planning. The study provides valuable information on the impact of urban expansion on local food production and supply systems, which is essential to ensuring food security in rapidly urbanised regions.

The study also highlights equity issues in urban development processes. Urban expansion can exacerbate inequalities among different groups within peri-urban communities, offering crucial perspectives for developing fairer policies and practices. This study makes a meaningful contribution to the broader research on the relationship between urban and peri-urban areas. It offers specific data based on the unique context of Addis Ababa, increasing the global comprehension of the interactions between urban and peri-urban regions and their mutual influences in developing nations.

The empirical methodology employed in this study can serve as a model for similar research in other rapidly urbanising regions worldwide. It showcases techniques to measure and evaluate the effects of urban growth on nearby communities. This study aligns with several Sustainable Development Goals, particularly Goal 11 (Sustainable Cities and Communities) and Goal 10 (Reduced Inequalities), providing significant data and insights to monitor progress towards these objectives in the Ethiopian context.

Furthermore, the study aims to develop adaptive methods for peri-urban areas by understanding the effects of urban expansion. The study involves identifying alternative livelihoods, improving resilience to urban-induced changes, and improving

the community's capacity to cope. The results can serve as a foundation for assessing current urban expansion strategies and their effectiveness in protecting peri-urban livelihoods, which is vital for improving and optimising urban governance procedures. The findings of this study provide valuable information for regional development planning, facilitating the creation of comprehensive methods that holistically consider the needs of urban and peri-urban areas. This research contributes to the scholarly literature on urbanisation, peri-urban development, and livelihood studies, particularly in Africa. It can stimulate further investigation and scholarly discourse on these critical issues.

1.10 Theoretical Framework

The study was informed by a combination of theories that have contributed to the study's theoretical framework outlined in this section.

1.10.1 Urban Expansion Theory

Urban Expansion Theory draws significantly from foundational spatial development models, particularly the work of John Friedmann in the mid-1960s. In his *Regional Development Policy: A Case Study of Venezuela*, Friedmann (1966a) introduced the Core–Periphery Model, which conceptualises the uneven spatial distribution of economic activities and population between dynamic urban centres and their dependent peripheral areas. This model provides a structural explanation for how urban growth intensifies disparities, as resources and opportunities concentrate in cores while peripheries experience relative marginalisation. Complementing this perspective, Friedmann (1966b) advanced the polarisation thesis in his article *A General Theory of Polarisation*, published in *Geographical Review*. Here, he argued that development is an inherently unbalanced process that fosters cumulative

advantages in certain regions while deepening underdevelopment in others. Together, these works offer a theoretical lens for understanding the drivers and consequences of rapid urban expansion, highlighting how cities such as Addis Ababa or other metropolitan centres in the Global South evolve at the expense of surrounding peri-urban farming communities.

The theory of urban expansion also incorporates elements of urban sprawl, which explains the patterns and processes through which cities extend into surrounding rural landscapes. Urban sprawl is typically characterised by low-density residential development, single-use zoning, and an increasing dependence on private automobiles for transportation. Moreover, this form of growth often proceeds in a fragmented or discontinuous manner, with development sometimes leapfrogging over vacant land parcels, which are later filled in as outward expansion (Ewing, 1997; Brueckner, 2000). Such dynamics highlight how sprawl not only reshapes peri-urban spaces but also contributes to the socio-economic and environmental transformations associated with rapid urbanisation.

Urban Expansion Theory provides a comprehensive framework for understanding the complex processes and consequences of urban growth, incorporating elements from various models and considering multiple factors that influence the spatial development of cities.

1.10.2 The Sustainable Livelihoods Framework

The Sustainable Livelihoods Framework (SLF) offers a holistic approach to examining how individuals and households construct and sustain their livelihoods in the context of changing socio-economic and environmental conditions. Originally developed in the late 1990s, the framework has become a widely used analytical tool for understanding poverty dynamics and development challenges, particularly in settings

undergoing rapid urbanisation and land use transformation (Scoones, 1998; DFID, 1999).

At the centre of the SLF is the concept of livelihood assets, which are categorised into five forms of capital that people mobilize to achieve livelihood outcomes:

1. **Human Capital** – representing people’s skills, knowledge, health status, and capacity to work. Human capital is essential for engaging in diverse livelihood strategies and is often reshaped by urban expansion through altered access to education, health services, and employment opportunities (Scoones, 1998).
2. **Social Capital** – referring to networks, relationships of trust, group memberships, and social claims that individuals draw upon to pursue their livelihood objectives. Urbanisation may weaken traditional social ties in peri-urban areas but can also foster new networks and associations that provide alternative forms of support (DFID, 1999).
3. **Natural Capital** – comprising natural resource stocks such as land, water, forests, and biodiversity that provide the foundation for many rural livelihoods. In peri-urban contexts, natural capital is often the most directly affected by city expansion, as farmland and grazing land are converted into residential, commercial, or industrial use (Scoones, 1998).
4. **Physical Capital** – encompassing infrastructure (for example, roads, water supply, electricity, schools, health facilities) and productive assets that enable livelihood activities. Urban expansion tends to bring improvements in physical infrastructure, though this may come at the cost of displacing existing local assets and undermining traditional production systems (DFID, 1999).

5. **Financial Capital** – referring to the financial resources available to households, including savings, credit, remittances, and pensions. While urbanisation may generate new economic opportunities and income sources, it can simultaneously increase living costs and heighten vulnerability for peri-urban households with limited access to financial resources (Scoones, 1998).

By examining how these forms of capital interact, the SLF emphasises that livelihoods are dynamic and adaptive. Households combine and reconfigure assets in response to pressures, shocks, and opportunities in their external environment. In peri-urban Ethiopia, for example, displacement caused by urban expansion has compelled farming households to diversify into non-agricultural wage labour or small-scale trade, demonstrating the adaptive, but often constrained, nature of livelihood strategies (Rakodi & Lloyd-Jones, 2002).

Overall, the SLF provides a robust conceptual lens for analyzing the complex impacts of urbanisation on peri-urban communities. By accounting for multiple dimensions of livelihood resources and their vulnerability to structural change, the framework helps illuminate both the risks and opportunities that arise as urban areas expand into rural and semi-rural landscapes.

1.10.3 Political Ecology

Political ecology is a critical research field that examines the complex relationships between political, economic, and social factors and environmental changes and resource access (Robbins, 2019). It provides a framework for understanding how power dynamics and structural forces influence land-use decisions and resource allocation, particularly in the context of urban expansion into peri-urban areas (Karlsson, 2015).

At its core, political ecology challenges simplistic explanations of environmental degradation and instead focuses on the broader political and economic structures that shape human-environment interactions (Biersack & Greenberg, 2006). This approach is particularly relevant when examining the impacts of urban expansion on peri-urban communities and ecosystems.

Urban expansion often results in the conversion of agricultural land and natural habitats in peri-urban areas to urban uses, leading to significant environmental and social changes (Seto et al., 2011). Political ecology helps illuminate how these processes are driven by economic interests, policy decisions, and power imbalances rather than solely by population growth or resource scarcity (Robbins, 2019).

By applying a political ecology lens to urban expansion and peri-urban development, researchers and policymakers can gain deeper insights into the power dynamics and structural forces shaping these processes. This understanding can inform more equitable and sustainable approaches to urban planning and resource management (Biersack & Greenberg, 2006).

1.10.4 Urban Transition Theory

The Urban Transition Theory provides a framework for understanding the complex process of societal and economic change as populations shift from predominantly rural to urban settings. This theory is particularly useful in examining the transitional nature of peri-urban areas, which exist at the interface between rural and urban environments (Friedmann, 2006).

At its core, the Urban Transition Theory posits that urbanisation is not merely a demographic phenomenon but a multifaceted process involving economic, social,

and spatial transformations (Bocquier et al., 2023). The theory suggests that as societies develop, they undergo a shift from primarily agricultural economies to those based on industry and services, accompanied by a corresponding movement of population from rural to urban areas.

The theory also highlights the role of demographic factors in driving urbanisation. Contrary to earlier assumptions that rural-to-urban migration was the primary driver of urban growth, recent research suggests that natural increase (births minus deaths) within urban areas plays a significant role, especially in the contemporary context of developing countries (Bocquier et al., 2023). This finding challenges traditional notions about the drivers of urbanisation and emphasises the importance of considering multiple factors in urban growth.

In the context of peri-urban areas, the Urban Transition Theory is particularly relevant. These transitional zones, which are neither fully urban nor rural, embody the dynamic nature of the urban transition process (Seto et al., 2011). Peri-urban areas often experience rapid changes in land use, economic activities, and social structures as they are gradually incorporated into expanding urban regions.

The theory also addresses the challenges and opportunities presented by urban transition. While urbanisation can lead to economic growth and improved access to services, it can also result in environmental degradation, social inequalities, and strain on infrastructure (UN-Habitat, 2018). Understanding these dynamics is crucial for developing effective urban planning strategies and policies.

The Urban Transition Theory provides a comprehensive framework for analyzing the complex processes of urbanisation, particularly in the context of peri-urban areas. By considering the multifaceted nature of urban transition, including demographic, economic, and spatial factors, this theory offers valuable insights for researchers,

policymakers, and urban planners grappling with the challenges of rapid urbanisation in the 21st century.

1.10.5 Social-Ecological Systems (SES) Framework

The Social-Ecological Systems (SES) Framework provides a comprehensive lens to examine the intricate interactions between social and ecological systems, particularly in dynamic peri-urban areas. This framework, developed by Elinor Ostrom and her colleagues, offers a structured approach to understanding the complex dynamics between urban expansion and environmental changes (Ostrom, 2009).

In the context of peri-urban areas, the SES Framework is particularly useful for understanding the impacts of urban expansion on ecological systems. For instance, it can help elucidate how changes in land use (RS) affect biodiversity (RU), how governance structures (GS) influence resource management decisions, and how different user groups (U) adapt to changing environmental conditions (Vogt et al., 2015).

The framework's emphasis on cross-scale interactions is crucial for comprehending peri-urban dynamics. As Epstein et al. (2013) note, the SES Framework allows for the integration of ecological perspectives with social systems analysis, providing a more holistic understanding of environmental changes in transitional spaces.

Moreover, the SES Framework's adaptability makes it valuable for studying the unique challenges of peri-urban areas. These regions often experience rapid changes in both social and ecological systems, and the framework's flexibility allows researchers to capture these dynamics effectively (Janssen et al., 2011).

By applying the SES Framework to peri-urban areas, researchers and policymakers can gain insights into the sustainability challenges and opportunities presented by urban

expansion. This approach can inform more integrated and effective strategies for managing the social-ecological transitions occurring in these dynamic spaces (Bots et al., 2014).

1.10.6 Land Use Change Theory

Land Use Change Theory encompasses several key concepts that help explain the patterns and processes of land use transformation, particularly as urban areas expand into peri-urban zones. This theory draws from various models and frameworks developed over time to understand the spatial organization of land uses and the factors driving changes.

One of the foundational concepts in Land Use Change Theory is von Thünen's agricultural land use model, developed in the early 19th century. Von Thünen proposed that agricultural land use is organized in concentric rings around a central market, with land use intensity decreasing as distance from the market increases (Sinclair, 1967). This model laid the groundwork for understanding how transportation costs and market accessibility influence land use patterns.

Building on von Thünen's work, the bid-rent theory, introduced by William Alonso in the 1960s, provides a framework for understanding urban land use patterns. According to this theory, different land users compete for locations based on their willingness to pay rent, which decreases with distance from the central business district (CBD) (Alonso, 1964). The bid-rent theory helps explain why certain activities, such as retail and office spaces, tend to cluster in city centres, while residential areas often occupy more peripheral locations.

As urban areas expand, the Land Use Change Theory incorporates the concept of urban-rural gradients. These gradients represent the transition from urban to rural

landscapes, characterized by changes in population density, land cover, and socioeconomic factors (McDonnell & Pickett, 1990). The peri-urban zone, situated at the interface between urban and rural areas, is a key focus of land use change studies due to its dynamic nature and rapid transformations.

The Land Use Change Theory provides a comprehensive framework for understanding the complex processes driving land use transformations in peri-urban areas. By integrating concepts from various models and considering multiple factors, it offers valuable insights into the patterns and dynamics of urban expansion and its impacts on surrounding landscapes.

1.10.7 Urbanisation and Agricultural Transition Theory

The Urbanisation and Agricultural Transition Theory provides a framework for understanding the complex shift from predominantly agricultural to increasingly nonagricultural livelihoods in peri-urban areas. This theory helps elucidate the changes in economic activities and employment patterns that occur as urban areas expand into surrounding rural regions.

At its core, the theory builds on the concept of structural transformation, which describes the co-evolution of urban and rural areas. As Jayne et al. (2018) explain, this process begins with increased agricultural productivity in rural areas, leading to surplus production. The additional income generated from this surplus stimulates demand for goods and services, thereby promoting the growth of off-farm sectors of the economy (Christiaensen & Martin, 2018; Davis & Henderson, 2003).

The theory posits that as urbanisation progresses, there is a gradual shift of jobs from the primary agricultural sector to secondary and tertiary sector jobs, typically concentrated in urban areas. This shift often stimulates rural-to-urban migration as

people seek new economic opportunities (Christiaensen & Martin, 2018). However, the process is not uniform across all contexts and can occur with varying intensities and impacts in different countries (Agergaard et al., 2021).

The Urbanisation and Agricultural Transition Theory provides a comprehensive framework for understanding the complex processes driving changes in economic activities and employment patterns in peri-urban areas. By integrating concepts from various models and considering multiple factors, it offers valuable insights into the dynamics of urban expansion and its impacts on surrounding agricultural landscapes and livelihoods.

1.10.8 Peri-Urban Interface Concept

The Peri-Urban Interface Concept provides a framework for understanding the complex and dynamic nature of areas situated between urban and rural environments. This concept conceptualizes peri-urban areas as transitional zones that exhibit characteristics of both urban and rural landscapes, creating unique challenges and opportunities for development and sustainability (Adell, 1999).

At its core, the peri-urban interface is characterized by a mix of urban and rural activities, land uses, and social structures. Allen (2003) describes it as "a lumpy rural-urban continuum that challenges conventional distinctions between the urban and the rural ... where cities' appropriation and transformation of nature's nutrient cycle manifests most intensely" (p. 136). This definition highlights the blurred boundaries and intricate interactions between urban and rural elements in these areas.

The concept recognizes that peri-urban zones are not static, but rather dynamic spaces that evolve over time. Rakodi (1998) emphasises this aspect, stating that the peri-urban interface is "a dynamic zone both spatially and structurally. Spatially it is

the transition zone between fully urbanised land in cities and areas in predominantly agricultural use" (p. 3). This dynamic nature is often characterized by rapid land-use changes, shifting economic activities, and evolving social structures.

One of the key features of the peri-urban interface concept is its recognition of the heterogeneity of these areas. Laquinta and Drescher (2000) propose a typology of peri-urban areas, including village peri-urban, diffuse peri-urban, chain peri-urban, in-place peri-urban, and absorbed peri-urban. This typology reflects the diverse forms that peri-urban areas can take, depending on their specific context and development trajectory.

In conclusion, the Peri-Urban Interface Concept provides a valuable framework for understanding the complex dynamics of areas at the urban-rural fringe. By recognizing the unique characteristics and challenges of these spaces, it offers insights that can inform more effective and sustainable approaches to urban and regional development.

1.10.9 Resilience Theory

Resilience Theory provides a valuable framework for understanding how peri-urban communities adapt to and cope with the rapid changes brought about by urban expansion. Originally developed in the field of ecology by Holling, C.S in 1973, resilience theory has since been applied to various social-ecological systems, including urban and peri-urban environments (Holling, C.S 1973).

At its core, resilience theory examines the capacity of systems to absorb disturbances, reorganize, and maintain their essential functions while undergoing change (Walker et al.,

2004). In the context of peri-urban areas, this theory helps analyse how communities adapt to the pressures of urbanisation, land-use changes, and shifting socio-economic dynamics.

Folke (2006) expanded on the concept, emphasising that resilience is not just about resisting change or bouncing back to a previous state, but also about the opportunities that disturbance opens up in terms of recombination of evolved structures and processes, renewal of the system, and emergence of new trajectories. This perspective is particularly relevant for peri-urban areas, which are often characterized by rapid transformation and the need for adaptive strategies.

Resilience theory offers a comprehensive framework for understanding how peri-urban communities navigate the complex challenges posed by urban expansion. By focusing on adaptive capacity, social-ecological interactions, and multi-scale processes, it provides valuable insights for researchers and policymakers seeking to enhance the sustainability and well-being of peri-urban areas in the face of rapid urbanisation.

1.10.10 The Urban Metabolism Theory

The Urban Metabolism Theory provides a powerful framework for understanding cities as complex systems that consume resources and produce waste, offering valuable insights into how urban expansion affects resource flows in peri-urban areas. This theory conceptualizes cities as organisms with metabolic processes, drawing parallels between biological systems and urban environments (Kennedy et al., 2007).

At its core, urban metabolism is defined as "the sum total of the technical and socioeconomic processes that occur in cities, resulting in growth, production of energy, and elimination of waste" (Kennedy et al., 2007, p. 44). This approach allows

for a comprehensive analysis of material and energy flows within urban systems, including inputs, outputs, and internal processes.

The concept of urban metabolism was first introduced by Abel Wolman in 1965 in response to deteriorating air and water qualities in American cities. Wolman developed a model to determine the inflow and outflow rates of a hypothetical American city with a population of 1 million people, focusing on the monitoring and documentation of natural resource use and waste production (Wolman, 1965). This seminal work highlighted the physical limitations of natural resources and the potential problems arising from waste accumulation in urban environments.

By applying the urban metabolism theory to peri-urban contexts, researchers and policymakers can gain a more comprehensive understanding of the complex interactions between urban expansion and resource flows. This knowledge can inform more sustainable urban planning strategies, helping to balance the needs of growing urban populations with the preservation of vital ecosystem services in peri-urban areas.

1.10.11 Capability Approach

The Capability Approach, pioneered by economist and philosopher Amartya Sen, provides a comprehensive framework for assessing human well-being and social arrangements. This approach focuses on individuals' capabilities to achieve the kinds of lives they have reason to value, offering a nuanced perspective on the impact of urban expansion on people's freedoms and opportunities (Sen, 1999).

At its core, the Capability Approach emphasises that development should be evaluated in terms of the expansion of people's real freedoms and opportunities, rather than merely economic metrics like Gross Domestic Product (GDP) growth

(Robeyns, 2005). In the context of urban expansion, this approach helps assess how changes in the urban environment affect individuals' ability to pursue their goals and live lives they consider worthwhile.

The Capability Approach distinguishes between functionings (achieved outcomes) and capabilities (the freedom to achieve various functionings). Functionings represent the various states of 'being and doing' that a person can achieve, such as being well-nourished, being employed, or participating in community life. Capabilities, on the other hand, are the real opportunities or freedoms people have to achieve these functionings (Alkire, 2002).

The Capability Approach provides a valuable lens for assessing the impact of urban expansion on human well-being. By focusing on people's real freedoms and opportunities, it offers a more comprehensive understanding of development outcomes than traditional economic measures alone, potentially leading to more equitable and sustainable urban development strategies.

1.10.12 Environmental Justice Theory

Environmental Justice Theory provides a framework for analyzing the fair distribution of environmental benefits and burdens across different social groups, making it particularly relevant for examining the impacts of urban expansion on peri-urban communities. This theory emerged in the 1980s as a response to the disproportionate environmental risks faced by low-income communities and communities of colour (Bullard, 1990).

At its core, Environmental Justice Theory posits that certain communities bear an unequal share of environmental hazards due to systemic inequalities and power imbalances (Schlosberg, 2007). In the context of urban expansion into peri-urban

areas, this theory helps illuminate how the costs and benefits of development are often unevenly distributed among different social groups.

One key aspect of Environmental Justice Theory is the concept of distributive justice, which focuses on the fair allocation of environmental goods and bads (Walker, 2012). In peri-urban areas, this might manifest as unequal access to green spaces, exposure to pollution from new industrial developments, or displacement due to urban encroachment on agricultural lands.

The theory also emphasises procedural justice, which concerns the fairness of decision-making processes related to environmental issues (Schlosberg, 2007). In the context of urban expansion, this aspect of the theory highlights the importance of inclusive planning processes that give voice to peri-urban communities in shaping development outcomes.

Environmental Justice Theory provides a valuable lens for examining the complex social and environmental impacts of urban expansion on peri-urban areas. By focusing on issues of distribution, procedure, and recognition, it offers a comprehensive framework for understanding and addressing the inequities that often arise in these transitional spaces.

1.10.13 Actor-Network Theory

Actor-Network Theory (ANT) provides a valuable framework for understanding the complex interactions between human and non-human actors in peri-urban systems. Developed by Bruno Latour, Michel Callon, and John Law in the 1980s, ANT challenges traditional sociological approaches by attributing agency to both human and non-human entities within networks (Latour, 2005).

At its core, ANT posits that social and environmental outcomes are shaped by the interactions between diverse actors in networks, rather than being determined solely by human actions or inherent structures (Law, 1992). In the context of peri-urban areas, this perspective allows for a more comprehensive analysis of the various forces influencing land use changes, resource flows, and social dynamics.

One of the key concepts in ANT is the notion of "actants," which refers to any entity that can act or be acted upon within a network (Callon, 1984). In peri-urban systems, actants might include human actors such as farmers, urban planners, and developers, as well as non-human entities like agricultural technologies, zoning regulations, and natural resources. By treating all these elements as potential agents of change, ANT provides a more nuanced understanding of the complex dynamics at play in transitional spaces between urban and rural areas.

The theory also emphasises the importance of "translation," which refers to the process by which actors align their interests and form networks (Callon, 1984). In peri-urban contexts, this might involve examining how different stakeholders negotiate land use changes, or how new technologies are adopted and integrated into existing agricultural practices. Understanding these translation processes can provide valuable insights into the power dynamics and decision-making processes shaping peri-urban development.

Actor-Network Theory offers a valuable lens for examining the complex interactions shaping peri-urban systems. By considering the agency of both human and non-human actors and focusing on network formation and translation processes, ANT can provide rich insights into the dynamics of these transitional spaces and inform more holistic approaches to peri-urban planning and management.

1.10.14 Institutional Analysis and Development Framework

The Institutional Analysis and Development (IAD) Framework provides a comprehensive approach to analysing how institutional arrangements affect resource management and livelihood outcomes in peri-urban areas. Developed by Elinor Ostrom and colleagues, this framework offers a structured way to examine the complex interactions between actors, rules, and resources in social-ecological systems (Ostrom, 2011). The IAD Framework focuses on the "action arena" where participants interact within a given situation. This arena is influenced by three main exogenous variables: biophysical conditions, community attributes, and rules in use (McGinnis & Ostrom, 2014). These variables might include land availability, population dynamics, and formal and informal governance structures in peri-urban contexts.

The framework helps researchers and policymakers identify the key elements that shape resource management and livelihood outcomes in peri-urban areas. For instance, it can illuminate how different property rights regimes affect land use patterns or how community norms influence collective action for managing shared resources (Ostrom, 2009). One of the strengths of the IAD Framework is its ability to analyse multiple levels of decision-making, from operational choices to collective-choice and constitutional choice levels (Ostrom, 2005). This multi-tiered approach is particularly relevant for peri-urban areas, where local, regional, and national policies often intersect and sometimes conflict.

The Institutional Analysis and Development Framework offers a valuable tool for understanding the intricate relationships between institutions, resource management, and livelihoods in peri-urban areas. Its systematic approach to analysing action situations and its recognition of the importance of context and multi-level governance

makes it well-suited to addressing the complex challenges of peri-urban development.

These theories and concepts have been integrated to form a comprehensive theoretical framework for the study. In other words, the theoretical framework examines the spatial and temporal dynamics of urban expansion into peri-urban areas, analyses the impacts on various forms of capital and livelihood strategies of peri-urban communities, and considers the political, economic, and ecological factors influencing these processes. The framework also assesses the adaptive capacities and resilience of peri-urban communities.

1.11 Organisation of the Thesis

This thesis comprises six chapters: an introduction, literature review, methodology, results, discussions, and conclusions and recommendations. A references and important notes are also presented at the end of the thesis.

The introduction sets the stage for the thesis, providing context and background for the study. It includes the problem statement, research objectives, hypotheses, significance of the study, and an overview of research questions. This chapter also presents a concise summary of the entire thesis structure.

The literature review offers a comprehensive analysis of existing research relevant to the study. It identifies gaps in current knowledge, situates the study within the broader academic context, and highlights the theoretical framework that underpins the research. This chapter critically evaluates previous studies and establishes the foundation for research methodology.

The methodology chapter describes the research design, data collection methods, and analytical procedures used in the study. Provides a detailed explanation of the

research approach, including the rationale for selecting specific methods. This section ensures that research is replicable and transparent, detailing how data were gathered, processed, and analysed.

The results chapter presents the study's findings clearly and systematically. It includes tables, graphs, and charts that illustrate key data points and trends. This chapter focuses on presenting the data without interpretation, allowing the reader to understand the empirical evidence generated through the research.

The Synthesis section interprets the results, linking them to the research questions and the literature review. It explores the implications of the findings, discusses their significance, and considers their theoretical and practical implications. This chapter also addresses any limitations of the study and suggests areas for future research.

The conclusion chapter summarises the study's key findings and contributions. It reiterates the importance of the research, provides final information, and offers recommendations based on the study's results. This chapter also presents the research gaps. This chapter serves as the closing statement, combining all aspects of the research.

The references section lists the sources cited throughout the thesis, following a standardised citation format. It ensures academic integrity and provides information for readers who need to locate the sources.

The appendices include supplementary material, questionnaires, and other relevant documents supporting the thesis's main text. They are organised logically and referenced within the main chapters as needed.

1.12 Chapter Summary

This chapter introduces the study on the empirical analysis of the impacts of urban expansion on the livelihood sustenance of peri-urban communities surrounding Addis Ababa City, Ethiopia. It outlined the background of the problem, the problem statement, the purpose statement, the research objectives, the research questions, the hypotheses, the significance of the study, and the theoretical framework. The next chapter reviews the related literature on the phenomenon under study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature reviewed for the study. The literature focuses on urban expansion and its impact on the livelihood support of peri-urban communities. The review was also contextualised to the communities surrounding Addis Ababa City in Ethiopia. The chapter covers the most relevant themes pertinent to the research objectives. Finally, the research gaps are synthesised, and the summary presented.

2.2 Urban Expansion of Addis Ababa

Addis Ababa, the capital of Ethiopia and a major diplomatic hub in Africa, is experiencing rapid growth and is among the fastest-growing cities on the continent. It is projected to have a population of approximately 3.86 million in 2022 (ESS, 2022). Addis Ababa expanded significantly from 99 km² in 1987 to 283.9 km² in 2017, resulting in the displacement of farming communities (Terfa et al., 2019). These displacements have profound socioeconomic and political implications for peri-urban farmers.

A study highlighted that urbanisation in Addis Ababa has led to the significant conversion of arable farmland into urban land, adversely impacting the livelihoods of local farming communities that rely on agriculture as their main economic activity (Koroso et al., 2021).

The expansion of Addis Ababa (also known as Finfinne) involved displacing indigenous inhabitants as part of the state's development efforts, leading to the commodification of farmlands, grazing areas, and cultural spaces through land

leases. The dispossession of Oromo farmers reflects broader political dynamics in Ethiopia (Debelo & Soboka 2022).

The rapid growth of the urban population and expanding settlement areas pose significant challenges for African cities. Addis Ababa, once the capital of the Abyssinian Empire, is now situated in the heart of Oromia. Before Menelik's conquest, the Tulama people inhabited the area, but were gradually displaced as the city expanded. This has led to a sharp rise in demand for ecosystem services in Addis Ababa, which heavily relies on its surrounding areas for these services (Geleta, 2014).

Addis Ababa has seen rapid physical expansion driven by spontaneous growth, which has resulted in the emergence of squatter settlements. Despite the city administration's efforts to prevent illegal construction, the number and size of illegal settlements have continued to increase. Demolitions have occurred where preventive measures failed (Abagissa, 2019).

Between 2006 and 2016, residential density increased in Addis Ababa while overall city density decreased. The land occupied by residential housing rose from 33% to 39%, and informal housing declined from 57% to 38%. By 2016, high-rise condominium occupation increased from 1% to 11%. Most new high-density developments are located near the city's eastern edge, which has implications for residents, infrastructure, and future development (Larsen et al., 2019).

The expansion of Addis Ababa has led to a loss of green infrastructure in peripheral areas. Doubling the population density could halve this loss. Densification would

concentrate development closer to the built area rather than spreading into farmland (Abo-El-Wafa, Yeshitela & Pauleit, 2018).

The urban area of Addis Ababa and its surrounding cities is expanding into the peri-urban region, resulting in significant farmland loss that directly impacts food production for the urban population. Settlement development also contributes to the loss of land suitable for cultivating important export products, high nutritional value, and importsubstituting products (Abo-El-Wafa, Yeshitela & Pauleit, 2017).

The rapid urban expansion in Addis Ababa and its surroundings has led to significant land use and land cover changes. The impervious surface expanded from 81.49 km² in 1987 to 591.85 km² in 2019, while vegetation cover degraded from 217.66 km² in 1987 to 157.8 km² in 2019 (Balew, 2022). The study conducted by Balew (2022) found a pronounced urban heat island effect in the urban area compared to the peripheral area. To reduce urban heat island effect and promote a healthy environment, increasing vegetation cover with dense tree canopies and green areas covered with grass and trees is essential for the city and its surroundings (Balew, 2022).

Research on urbanisation and climate change in Africa, particularly in Addis Ababa, Ethiopia, has shown that rapid urbanisation is the leading cause of flooding. To reduce the risk of flooding, the study recommends innovative growth management for urban expansion and dense inner-city development (Beshir & Song, 2021).

Addis Ababa's urban expansion from 1990 to 2020 showed that the most significant growth occurred within 10 to 22 km from the city centre, mainly through edge expansion, which accounted for over 61% of new development (Busho, Wendimagegn, & Muleta, 2021).

Agricultural land surrounding Addis Ababa has rapidly decreased due to urban expansion. Between 1986/7 and 2019/20, almost 90% of farmland has been converted for urban use, leading to reduced crop and livestock production and less grazing land (Duguma & Megento, 2022).

A study conducted by Feyisa et al. (2016) in Addis Ababa, Ethiopia, found that the outskirts were 3.7°C cooler than the central urban areas. It also showed an increase in heat intensity between 1985 and 2010. Despite this increase, the study suggests that there may be potential ways to mitigate urban warming in tropical climates, mainly through vegetation (Feyisa et al., 2016).

Unchecked urbanisation around Finfinne/Addis Ababa has worsened living conditions for the farming community, leading to growing land loss and inadequate compensation. However, urbanisation has also brought about alternative livelihood strategies (Tadesse & Imana, 2017).

In Addis Ababa, urban land use inefficiencies such as hoarding and fragmentation have led to uncontrolled sprawl and underutilisation of transferred land. Institutional weaknesses are the main contributing factors, particularly in implementing urban land lease policy. Koroso et al. (2021) recommended that the city should focus on improving urban land use efficiency (ULUE) to promote sustainable urban growth.

Between 1986 and 2010, the city's built-up area expanded by 120.93 km² due to the conversion of croplands, forests, and grasslands. This expansion mainly involved horizontal growth, posing a risk to the peri-urban environment. Household

characteristics play a significant role in determining participation in non-agricultural livelihood strategies. Displaced individuals unable to find alternative income sources tend to adopt an asset-depleting consumption style (Kasa et al., 2011).

Since 1994, squatter settlements have occurred in Addis Ababa, particularly in the Kolfe Keranio sub-city. These settlements are attributed to high housing standards and costs, delayed legal land provision, expensive city centre rents, government control of open spaces, limited code enforcement, and land speculation. Squatter settlement plot sizes are more extensive than legal land provisions, leading to inefficient land use and rapid city expansion (Melese, 2007).

According to Moisa (2021), Land Use Land Cover (LULC) data from 1990 to 2020 for Addis Ababa shows a 2.77 km²/year expansion of the built-up area, a decrease of 2.68 km²/year in agriculture and 1.78 km²/year in grasslands. The built-up area increased by 83.2 km², while agriculture and grasslands decreased by 80.4 km² and 53.4 km², respectively, due to rapid urban expansion (Moisa, 2021). About 30% of sub-Saharan Africa's population lives in cities, which is expected to double by 2040. Addis Ababa's recent development programmes have caused significant changes in land use and population density, leading to unequal distribution of amenities across the city (Weldegebriel et al., 2021).

2.3 Urbanisation as a Global Issue

The growth of urban areas has long-term effects on landscapes and livelihoods. Small to medium urban areas are especially noteworthy, as they expand their urban land faster than larger cities and experience a decrease in urban population density. This trend can be observed in regions such as India, China, North America, and Europe, where urban population densities have consistently decreased, with variations based on city sizes (Xu et al., 2019).

Over 60% of urban expansion has occurred on land previously used for agriculture. This trend is most prominent in China, Southeast Asia, and Europe. Converting

agricultural land for urban use has significant consequences for food security and environmental sustainability. For example, in countries like India and Nigeria, a large percentage of land (85 and 30%, respectively) has been repurposed for urban areas due to a decrease in urban population density (Güneralp et al., 2020).

Counterfactual analysis indicates that an estimated 125,000 km² of land was repurposed for urban use due to the declining urban population density. This land could have otherwise been maintained for agricultural purposes or natural vegetation. This underscores the importance of proactively managing urban land expansion, especially in small and medium cities, to preserve agricultural land in peri-urban regions while simultaneously creating inclusive and affordable urban landscapes (Güneralp et al.,

2020). In the past two decades, numerous urban areas have grown substantially due to rapid population increases and transformative economic, technological, and political changes. Around 3 billion people, nearly half of the world's population, reside in urban settlements. According to the United Nations, the percentage of the world's inhabitants living in urban areas has risen from less than 5% in 1800 to more than 50% in 2010 and is projected to reach 65% by 2030 (United Nations, 2010).

Urban growth is anticipated to be remarkably rapid in developing countries, especially in less urbanised cities and towns in Africa and Asia. With an urban growth rate of 3.4%, Africa is the fastest urbanizing continent and is projected to become predominantly urban by 2030 (United Nations, 2010).

The rapid pace of urbanisation, coupled with relatively low levels of planned urban development, has generated significant challenges for many cities. Among the most pressing are the proliferation of slums, squatter settlements, and other forms of

informal or illegal land development, particularly in rapidly expanding urban areas (UN-Habitat, 2020; United Nations, 2019).

More than one billion of the world's city residents live in inadequate housing, mostly in slums and squatter settlements. Around 37% of the urban population in developing regions lives in such conditions, rising to 62% in sub-Saharan Africa (Degu, Jafri & Asfaw, 2014). The burgeoning of new slums and squatter settlements underscores the need for sustainable urban planning and adequate housing and services to accommodate the growing urban population.

The physical expansion of urban areas generally presents multifaceted challenges and opportunities. Effective management of urban land expansion, particularly in small and medium cities, is critical to preserving agricultural land, ensuring food security, and creating sustainable and equitable urban environments.

2.4 Urbanisation in Ethiopia

The urbanisation process in Ethiopia has experienced significant and rapid growth primarily due to changes in the country's political structure and policies. From 1984 to 2007, there were notable changes in the distribution of urban populations in Ethiopia. According to Ermias, Bogaert, and Wogayehu (2019), this provides valuable insights for policy discussions. According to Benti et al. (2022), urban areas in Ethiopia are defined as areas with a population of at least 2,000 people, but less than 20% of the total land area is classified as urbanised. In these urban areas, more than 85% of the population resides in small towns. Ethiopia has a relatively low level of urbanisation compared to other African countries. Still, it has been experiencing

a strong annual urban growth rate of 4.63% (Benti et al., 2022). This growth rate has increased significantly, exceeding the average urban growth rate of the continent.

World Bank (2015) and UN-Habitat (2016) estimated Ethiopia's urban population grew at an annual rate of 4.2% between 1994 and 2015, a figure notably higher than both the country's general population growth rate of 2.5% and the average urban growth rate of 3.5% for Africa as a whole. Despite this rapid pace of change, Ethiopia's level of urbanisation remains comparatively low. Projections suggest that the urbanisation rate will reach 38% by 2050, which is still below the average for many sub-Saharan African countries. Historically, Ethiopia's urbanisation rate rose from 11.4% in 1984 to 13.7% in 1994, and further to 16.2% in 2007, demonstrating a gradual but steady upward trajectory (World Bank, 2015; UN-Habitat, 2016). The urban population grew at an estimated annual rate of more than 4.3% (Degu, Jafri & Asfaw, 2014). According to the Ministry of Urban Development and Construction (2011), it was predicted that by 2020, around 22 million people, equivalent to 30% of the population, would live in urban areas. Although Ethiopia is not highly urbanised compared to other nations, its urbanisation rate of 4.34% is above the average urbanisation rate of 3.95% in sub-Saharan Africa (Abeje, 2012). The primary drivers of unplanned urban growth in Ethiopia are primarily socioeconomic, including religious sites, local markets, and educational and administrative centres, with physical infrastructure playing a substantial but secondary role. Factors such as improved transportation infrastructure, rural-to-urban migration, and the growth of secondary cities have accelerated urbanisation. The trend of industrialisation and creating more manufacturing jobs is expected to be bolstered by public investments in newly built and planned industrial parks. Urbanisation is linked to significant improvements in social welfare. Increasing the

average intensity of nightlight in a village by three times is associated with a 42-46% increase in household welfare and a notable increase in non-food consumption, indicating an overall improvement in welfare and poverty reduction (Kibrom et al., 2022). Between 1987 and 2019, six towns in the Oromia Special Zone surrounding Finfinnee experienced significant expansion, leading to a fragmented urban environment and the depletion of natural land cover (Terfa et al., 2020). In response to these challenges, the Oromia regional administration established Sheger City in 2023 to address unauthorised settlements and manage urban expansion.

2.5 Land Tenures in Ethiopia

In Ethiopia, all land is owned by the state and allocated to individuals through land-holding rights. The land tenure system is formally categorised into rural and urban regimes. However, the expansion of urban areas into peri-urban zones has generated widespread insecurity among local communities, particularly due to fears of land dispossession. Paradoxically, new land recipients in peri-urban areas often acquire stronger and more formalised land rights than indigenous landholders during processes of urban development. This situation underscores the need for critical attention to land governance in transitional peri-urban areas of Ethiopia. Specifically, the mechanisms for land acquisition and allocation for urbanisation, as well as the effectiveness of existing legal frameworks, institutional arrangements, and governance structures, require urgent reform to ensure sustainable and equitable urban development that benefits all segments of society (Adam, 2014).

2.5.1 The three competing and conflicting interests

The competition for peri-urban land involves the state, private businesses, and local communities. This competition has resulted in the rapid conversion of farmland into urban property. While the government collects more revenue and developers and dealers make more profit as a result of this trend, it has also led to reduced opportunity and security for local communities in peri-urban areas. Therefore, intentional government intervention is necessary to accommodate the interests of all parties without conflict in urban expansion and development programs in urban fringe areas (Adam, 2020).

According to Adam (2014), the expansion of urban boundaries into peri-urban areas has instilled widespread fear of land loss among local communities. New recipients of land from peri-urban areas are granted better land rights compared to indigenous local peri-urban landholders. It is imperative to address the state of the land governance system in the transitional peri-urban areas of Ethiopia. Two aspects of land governance problems that need attention are land acquisition and delivery for urbanisation, and the efficiency of laws, structures, and institutions for land governance in transitional peri-urban areas. Both aspects urgently require reform in Ethiopia in order to promote sustainable and equitable urban development among all segments of society.

The predominant method of urban land acquisition for housing and other urban development purposes in Ethiopia involves conventional and state-controlled expropriation. However, recent research suggests that this approach has imposed undue pressure on peri-urban land and has been widely criticized for displacing and disrupting local farming communities in those areas. The challenges encountered in peri-urban areas necessitate exploration of alternative solutions by policymakers,

researchers, and other stakeholders. Drawing on international experiences with urbanisation and the growing demand for land, land adjustment has emerged as a promising alternative for land acquisition and delivery. Introducing this mechanism into Ethiopia's urban land development system is recommended to mitigate the negative urban development trends observed in peri-urban areas in the country (Adam, 2019).

In Ethiopia, land expropriation has a detrimental impact on previous land users as it diminishes their production and sources of income. In Bahir Dar, one of Ethiopia's rapidly expanding cities, affected farmers received compensation equal to only 37% of the value of their current crop yields and their potential growth. The present compensation framework overlooks the impact of inflation on crop prices, assumes consistent yields, and excludes the value of crop residuals. We advocate for an achievable discounted compensation framework that takes into account crop price and yield growth, which would render the compensation scheme more equitable and improve the situation for affected farmers (Admasu et al., 2019).

Urbanisation challenges and, indeed, urban management can be addressed through a proxy regional planning tool, cluster formation. The formation that focusses on the potential of small and medium towns. Small and medium towns are supposed to represent a necessary link between complex and sophisticated urban life and simple and undiluted rural existence. They tend to combine the attributes of the two space economies (urban and rural). The study suggested that the regulation of urbanisation in Ethiopia through clustering of settlements as a tool in urbanisation and urban management. The findings reveal that clusters can be formed in economic and settlement clusters within the framework of existing urban dynamism (small and medium cities) in Ethiopia. It can serve as a reliable instrument for stabilising

settlements and, consequently, sustainable urbanisation. Alaci (2010) recommends deliberate dispersal of mini-industrial and commercial corridors via cluster formation as a major instrument for deflecting the army of migrants (Alaci, 2010).

2.5.2 Urbanisation and Agricultural Land Issues in Ethiopia

The rapid urbanisation in Ethiopia has resulted in the conversion of peri-urban agricultural land into built-up areas, reducing available land for cultivation. Unauthorized housing encroachment due to unplanned city expansion has left peri-urban farmers with limited or no land for farming, increasing their vulnerability. It's crucial for governing bodies to control the spread of urbanisation onto agricultural land to avoid threats to food production (Ayele & Tarekegn, 2020).

According to a study conducted in Adama city of Oromia region by Bulti and Assefa (2019), it is recommended that planners and stakeholders prioritise sustainable development in areas where natural capital is being overexploited to prevent irreversible negative outcomes. The study also highlights the importance of creating a balance between ecological and socioeconomic needs in sustainable resource management (Bulti & Assefa, 2019).

In a study conducted by Gebrihet and Pillay (2020), the determinants of the urban land lease market in Mekelle City, Ethiopia, were examined. The study found that plot size, payment period, monthly income, accessibility to basic services, plot location, land use type, and lease type were all significantly associated with the markup price of urban land leases. Auctioneers were willing to pay a premium for larger plots with extended payment periods and access to basic services, particularly those designated for residential housing. Meanwhile, distances and plots inaccessible to basic services were found to have a negative association with the price of urban land leases (Gebrihet & Pillay, 2020).

In a recent study, Koroso et al. (2021) observed that urban land use inefficiencies are prevalent in sixteen Ethiopian cities. The study recommends enhancing urban land use efficiency ULUE and addressing issues such as land hoarding, urban sprawl, and informal settlements.

The urbanisation in Ethiopia has negatively impacted the livelihoods of the population, particularly those in poverty. Although monetary compensation is provided to affected rural residents, it may not be sufficient for their rehabilitation. Peri-urban farmers face eviction due to various reasons, and their concerns about property valuation, compensation, and policy implementation often go unaddressed. It is suggested to adopt a combination of rehabilitation strategies and establish effective grievance handling mechanisms for peri-urban farmers (Kosa & Mohammed, 2017).

The New York University and the Ethiopian Government have collaborated on a programme called the Ethiopia Urban Expansion Initiative, which focuses on expanding city boundaries, creating arterial roads, and preserving open spaces in 18 Ethiopian cities. While the programme has shown positive outcomes, it has also been criticized for disregarding land ownership and the livelihoods of peri-urban farming communities.

A study in northern Ethiopia found that urban households still rely on agricultural income despite limited farmland access. Better-off households combine farming with nonfarm skilled employment, while poorer urban households are less likely to engage in nonfarm employment. Experience in the nonfarm sector drives participation in skilled nonfarm employment more than land compensation. This challenges the assumption that cash injection facilitates the transition to urban livelihoods (Mezgebo & Porter, 2020).

The ongoing eviction of indigenous farmers for urban expansion negatively impacts their livelihoods. Economic policy reform, private investment, unmet housing demand, and public projects are driving this expansion. Policy limitations, conflicts, unplanned livelihoods, and poor saving habits adversely affect peri-urban farmers. Proposed solutions include full urban policy implementation, stakeholder collaboration, proper record-keeping, and continuous support for evicted farmers' livelihoods (Mohammed, Kosa, & Juhar, 2020).

Addis Ababa's urban spaces are shaped by aggressive urban planning rather than inclusivity and peace. Vital public spaces have been forcefully demolished and rebuilt to modernise the city, displacing the poor to accommodate the globalisation of urban Africa (Pedrazzini, Vincent-Geslin & Thorer, 2014).

In a newly established urban centre near Addis Ababa, inequalities due to urban expansion are expressed as 'fafee' in Afan Oromo (Oromo language). This term represents grievances against the incompetence of institutional or individual actors in providing required services (Soboka & Sori, 2021).

Urbanisation in Bahir Dar has displaced farmers, impacting peri-urban households' livelihood strategies. A study found that household age, education level, dependency ratio, and size positively influence livelihood choices, while household head gender, land size, and access to credit have negative impacts. The study suggests the need for policymakers to address the adverse effects of farmland loss in peri-urban areas (Tassie Wegedie, 2018).

Urban expansion converts peri-urban land into urban areas, creating tensions over land use and rights. A study in Addis Ababa and Hawassa found that this expansion led to increased insecurity among peri-urban farmers about their land tenure (Teklemariam & Cochrane, 2021).

The study Telila (2020) on urbanisation in eastern Ethiopia found that rapid urbanisation disrupts rural communities, leading to land grabbing. Poor urban and nearby rural communities feel insecure and unstable, with significant changes in their living patterns (Telila, 2020).

The study conducted Terfa et al. (2019) in three major cities of Ethiopia (Addis Ababa, Adama, and Hawassa) from 1987 to 2017 revealed that all the cities experienced accelerated growth in urbanized areas. The differences in the extent and direction of expansion in each city were mainly related to physical characteristics, urban master plans, and policies, with an increase in irregularity and dispersion of urban growth, representing strong evidence of urban sprawl. Large cities with strong economic growth in the country fail to effectively control the scattered nature of urban growth, requiring aggressive policy intervention. This study's approach allows for a deeper exploration of urban development patterns and the identification of priority areas for effective urban planning and management (Terfa et al., 2019).

Terfa et al.(2019) carried out a study in six towns in the Oromia Special Zone surrounding Finfinnee, Ethiopia, which is widely known to be experiencing dramatic growth. The study results highlight that all towns experienced accelerated growth in built-up areas and a highly scattered nature in spatial growth. Landscape ecology analysis confirmed a highly fragmented urban landscape, a significant loss of natural land cover, and disconnected and complicated agro-vegetation patches in all towns,

suggesting a lack of rigorous implementation of the master plan. The results also indicated that the Oromia special zone surrounding Finfinnee has failed to control urban sprawl to surrounding ecologically sensitive areas (Terfa et al., 2020).

Urbanisation in Ethiopia is unevenly distributed across regions, with almost half of the urban population concentrated in the core urban region. Within each region, the majority of the urban population is concentrated in just one or a few large urban areas (Tefaghiorghis, 1986).

In a nutshell, in Ethiopia, where land is state-owned, rapid and often inefficient urbanization involves the aggressive expansion of city boundaries into peri-urban areas, creating deep conflicts between state interests, private developers, and indigenous communities. This expansion is characterized by the expropriation of agricultural land, which displaces local farmers and creates tenure insecurity, as new land recipients often receive superior rights compared to indigenous holders (Adam, 2014; 2020). The literature highlights that current compensation models are inadequate for restoring livelihoods, failing to account for inflation or future yields, which leaves displaced populations vulnerable to poverty and food insecurity (Admasu et al., 2019; Kosa & Mohammed, 2017). Furthermore, this unplanned urban sprawl contributes to ecological fragmentation and land use inefficiencies (Terfa et al., 2020; Koroso et al., 2021). Consequently, scholars argue for urgent governance reforms, proposing alternative strategies such as land readjustment, settlement clustering, and revised compensation frameworks to ensure that urban development is both environmentally sustainable and socially equitable (Alaci, 2010; Adam, 2019; Bulti & Assefa, 2019).

2.6 Urban Sprawl

Urban sprawl is a global concern. In Kentucky, USA, it is rapidly expanding, even in less obvious areas (Kew & Lee, 2013). According to Li (2011), in China, about 4 million hectares of farmland have been repurposed by non-agricultural sectors, displacing over 50 million rural residents. This land conversion and abuse of land rights threaten sustainable land use due to institutional inadequacies (Li, 2011).

Similarly, farmland is converted in Norway into built-up areas, with central municipalities experiencing the most significant urban sprawl and farmland loss (Skog & Steinnes, 2016). The expansion of urban areas in Ethiopia resembles that in other countries. According to Kassa (2014), the urban expansion of Addis Ababa contributes to the economic advancement of farmers in the affected regions. It also transforms their lifestyle into an urban one. It offers indigenous people improved opportunities to be reclassified as urban and thereby engage in urban employment, which was not feasible under the previous agricultural system (Kassa, 2014). However, Kassa (2014) it failed to justify how far urban livelihood is better than rural livelihood. Second, the author needed to show whether peri-urban farming communities could adapt to new and non-farming livelihood strategies.

Contrary to (Kassa, 2014), the sprawl of Addis Ababa city has displaced farming communities in the peri-urban areas, leading to one of the most significant, deadly, widespread protests against land dispossession in the country's modern history. Expansion to farmlands has affected the socio-economic livelihood of agricultural communities surrounding the city through dislocation, resource disposition, and the reason why the situation has received an ethnic dimension. This study highlights that

in addition to natural urban growth, government corruption and land use for political leverage have played a significant role in the forced eviction of peasants (Bula, 2020).

The leading causes of urban sprawl are rapid population growth, high pressure on urban development, housing provision, changes in living standards, and technological changes. Furthermore, the study found that urban sprawl is desirable due to the benefits of spreading development, low rent in the periphery, and less pressure on the environment of the border belt. Urban sprawl's effects encompass the disruption of rural residents' means of living on the outskirts, land fragmentation, food scarcity, ecosystem changes, environmental pollution, decline in biodiversity, and loss of wildlife habitats. The study recommends environmental monitoring with geographic information systems and remote sensing techniques, environmental impact assessment, development control, farmland policy, land allocation, sustainable land use management, and enforcement of planning policies (Festus et al., 2020).

Sprawl is generally understood as the dispersed and inefficient growth of urban areas. Several indicators can be used to examine the impact of sprawl on critical land resources, including (1) the density of new urbanisation, (2) loss of prime farmland, (3) loss of natural wetlands, (4) loss of core forest habitat; and (5) increase of impervious surface (Hasse & Lathrop, 2003).

In Nekemte city in the western Oromia region, there was a high urban expansion with illegal land holding for housing due to the inability to pay the land lease, the forcing measure for completion of construction within 24-48 months under the lease contract. Low-income or squat people could not afford to comply with this city lease policy and were forced to squat (Begna, 2017).

2.7 Impact of Urbanisation

Urbanisation is one of the most pressing global issues. According to Firdaus & Ahmad (2011), between 1951 and 2001, the urban area of Delhi grew from 195.8 km² to 924.6 km², and the urban population rose from 0.1 to 2.3 million. The study conducted by Firdaus & Ahmad (2011), showed that almost 63% of the sampled households transitioned from agricultural to non-agricultural occupations. In comparison, almost 50% of the respondents reported a change in cropping patterns: food grains versus vegetables, fruits, and flowers. Firdaus & Ahmad (2011), revealed that residential complexes ($p < 0.01$) and household industries ($p < 0.05$) have a significant positive impact on agricultural land use patterns. The development of transportation networks, orchards and nurseries, and brick kilns is insignificant ($p > 0.05$) (Firdaus & Ahmad, 2011). Urbanisation has taken millions of acres of cropland. The converted croplands are 30-40% more productive than the new croplands (Andrade et al., 2022). Policies protecting existing farmland from urbanisation would help relieve the pressure on expanding agriculture into natural ecosystems (Andrade et al., 2022).

Ethiopian urban settings experienced an unprecedented rate of urbanisation through expansion. Horizontal urban expansion hurts the livelihood of the peri-urban agricultural community in Hawassa, Ethiopia. The livelihood of these communities has been at risk mainly due to the lack of effective urban governance and rules and regulations on land expropriation and compensation for farmers. The differences in wealth, power, educational background, family size, burdens, livelihood strategies, and diversity before and after expropriation were determining factors. Effective rules and regulations, in-kind compensation, pretraining, and post-coaching on marketable skills are recommended (Firew, 2010). Despite the intensification of the agricultural land area, there has been a decrease in agricultural livelihoods and a subsequent

reduction in the income contribution of natural resource-based livelihoods. Land use and land cover changes can be inferred as impacts of peri-urbanisation leading to degradation of agricultural land, deforestation, deterioration of wetlands, and destruction of wild habitat (Goswami et al., 2020).

The study conducted in Vietnam by Ha & Trung Kien (2019) shows urbanisation impacts income inequality. There is an inverted U-shaped relationship between urbanisation and income inequality. The high school enrolment rate and the proportion of agriculture affect reducing income inequality (Ha & Trung Kien, 2019). Another study in Vietnam shows that the poverty rate has decreased while urbanisation has happened rapidly in the past 20 years. It revealed a U-shaped relationship between the urbanisation level and the poverty level in Vietnam.

Furthermore, the estimated thresholds for urbanisation from the poverty reduction perspective are 40.19% and 43.68% in the static and dynamic models, respectively (Ha et al., 2021). In Akure South Local Government, Nigeria, urban growth (building area) is increasing, reducing vegetation and farmland and increasing rock outcrops. Over time, much farmland and vegetation has been converted for urban use (Ibilewa et al., 2021).

In the Greater Ho Chi Minh City, from 1990 to 2012, approximately 660.2 km² of cropland was converted to urban use, which is nearly five times the original urban land area. Additionally, 3.5 million people relocated to the region, resulting in a total population of nearly 12 million by 2012 (Kontgis et al., 2014). In the Yamuna River basin, India, urbanisation has adversely impacted the surface water drainage system, which is often clogged due to siltation (Kumar et al., 2020). In Nekemte, Western Ethiopia, built areas increased from 1996 to 2016, substantially reducing forest area, cultivated land, pasture land, wetlands, and riparian forest. The impacts of urban

expansion on the peri-urban environment can be reduced by controlling population growth and incorporating environmental issues into any urban and economic development programme (Megersa, 2018). The farming areas in the Klang Valley, urban agglomeration in Malaysia, have been transformed into built-up areas and infrastructure to support the notable increase in population over the last few decades. The level significantly affects the extremities of the urban climatological parameters and the spatial extent of the induced impacts.

The rapid increase in urban land use has transformed the agricultural landscape around freshwater lakes that are part of the urban ecological commons of the southern Indian city of Bengaluru. Marked degradation of land has adversely impacted water availability for local citizens and traditional users' livelihoods (Mundoli et al., 2015).

In Tamale, Ghana, swift urban growth has resulted in a succession phenomenon, leading to the conversion of valuable agricultural lands into alternative land uses perceived as the most optimal and beneficial. Urbanisation pressures negatively affect predominantly poor farming communities in the Tamale region. The policy should prioritise the protection of primary agricultural land. Urbanisation is necessary, but not to the extent of denying rural folks their primary source of livelihood (Naab et al., 2013). In emerging countries, urbanisation occurs along with fast population growth that follows rapid economic development, and the industries and population are centralised in large cities. Urban land use in the Jakarta Metropolitan Region expanded rapidly to suburban areas. Agriculture and forest land were mainly converted into urban land use, and consequently, urban and traditional agriculture landscapes were extremely mixed (Nagasawa et al., 2015).

Acquisition for urbanisation has caused a substantial loss of farmland in Hanoi, Vietnam. Peri-urban communes in western Hanoi could adapt to the loss of farmland without experiencing significant difficulties and transform their livelihoods for the better. In northern Vietnam, where the inherent lack of employment and income from agriculture and the favourable location induced local labourers to go beyond villages in search of new opportunities, they actively took advantage of the changes around them to find new means of livelihood to earn higher incomes. This study calls for improvements in the compensation scheme and urban planning processes to make urbanisation and land acquisition policies work for people living in northern Vietnam's peri-urban cities (Nguyen & Kim, 2020).

2.8 Land Grabbing/Land Expropriation

Domestic land grabbing is the process of expropriation and displacement by governments within their country's borders to improve development (Siciliano, 2014). According to Siciliano (2014), the domestic acquisition of land in the country results in urban expansion and the commercialisation of land to enhance food security and modernise agriculture. However, Tura (2018) defined land grabs as forced evictions based on flawed expropriation laws, which do not entitle farmers and pastoralists to a right to just compensation. As per Tura (2018), the Ethiopian government favours urbanisation and private investments at the cost of impoverished and vulnerable small-scale farmers.

Urban expansion is associated with a decrease in the intensity of agricultural land use. Together with the links between urbanisation, agricultural land, and agricultural production, these links imply that the expansion of agricultural land is highly likely with continued urban expansion (Jiang et al., 2013).

Moving to a city and being far from family or friends was strongly linked to decreased well-being. Investing sufficient resources in a compensation-based resettlement programme can benefit households displaced in the short term (Randell, 2017).

According to Gu (2022), the impacts of land expropriation indicate that families with migrant workers saw significant improvements in their socioeconomic status after land expropriation. This was evidenced by higher wage income and government compensation. However, households without migrant workers experienced a slight decline in their socioeconomic status, as their income stayed the same while their living costs increased.

Zhan (2019) argues that when peasants are compensated with valuable flats, commercial venues, and stable jobs, land expropriation does not necessarily lead to dispossession. This concept, called accumulation without dispossession (AWD), may present an alternative viewpoint during the era of neoliberal dispossession, as it has positive implications for social equality and livelihood security.

Urban land governance using efficient cadasters is essential to provide equal land access, adequate tenure security, sustainable land use, accountability of actors, and transparency. However, in Ethiopia, the operational role of the urban cadaster in improving urban land governance was limited due to the basic requirements needed for the operation of urban cadasters, including political stability, policy and legal clarity, technical capacity, sound organisational design, and social support were lacking (Berhanu et al., 2015).

The land utilisation system in Ethiopia is fraught with a range of issues, including insecure land tenure, fragmentation and reduced farm sizes, corruption associated with land hoarding by politically influential individuals and corporations, displacement of farmers and impoverished urban dwellers, and the problem of expropriation and

inadequate compensation for land taken from owners. The research suggests important reform initiatives concerning land ownership rights, land seizure and compensation, institutional capacity enhancement, safeguarding essential agricultural land and the local environment, and dealing with land grabbing and banking issues (Wubneh, 2018).

In China's land market, the direct land exchange between rural and urban users increases income inequality within the rural sector. This is because households on the outskirts of urban areas benefit more from these exchanges. According to Tan et al. (2020), implementing a tradable quota system can help lessen the effect of location on land prices, leading to a more equitable distribution of revenue from rural-urban land transfers within the rural sector. In Nigeria, a new imperative for improved tenure security and an integrated planning approach is suggested by (Onyebueke et al., 2020).

In the Howrah Municipal Corporation (HMC) of the Indian state of West Bengal, there is evidence of urban sprawl, or shrinkage, that indicates expansion of the built area, causing environmental encroachment. Urban encroachment and expansions into vegetative land cover significantly impede agricultural activities and production (Lasisi et al., 2017). In peri-urban rural areas, age, occupation, land size, and level of education had significant positive impacts on annual family income, while family size and gender exerted adverse effects. Low-yield land and youth emigration increased farmers' likelihood of losing their lands to urbanisation. In contrast, land size, yearly income, and age had adverse predictive effects on land loss (Brahima & Shixiang, 2020)—peri-urban areas. The size of agricultural land decreases and becomes unprofitable. As a result, farmers are eager to sell their land, seeking a fast profit. It is advisable to implement suitable planning policies to safeguard agricultural land in

peri-urban areas and guarantee that local communities reap the benefits of urban development (Samat et al., 2014).

The effects of land reforms on transactions on the peri-urban fringe, in the context of broader liberalisation processes, may increase vulnerability to conflict over land. In the Mexican city of Xalapa, disputes over informally developed land have escalated into violent encounters between groups of settlers and the state (Lombard, 2016).

The Addis Ababa city expansion programme is neither participatory nor supportive of farmers in the periphery and, therefore, negatively affects livelihoods, with women and youth being the main victims. The primary coping strategy for most displaced farmers is casual daily work since other, more productive opportunities have gradually become unavailable in the area. Future urbanisation programmes must be more comprehensive and participatory to ensure a transition to more stable and improved livelihoods (Feyera & Terefe, 2010).

In eastern Ethiopia, urbanisation dismantles the peri-urban community and grabs land from these societies. Urbanisation in peri-urban communities causes problems and nuisances to their future lives. Although peri-urban communities gain access to school and other social services, urbanisation negatively impacts their general living patterns (Telila, 2020).

2.9 Impact of Urbanisation on Farmland Loss

Peri-urban farmland in Ethiopia is rapidly converted to built-up uses as cities sprawl, revaluing land and displacing agricultural production. Synthesised evidence shows that weak governance has enabled informal housing encroachment, and that urbanisation-related losses of agricultural land are associated with declines in grain output— heightening peri-urban farmers' vulnerability. Targeted controls on

unplanned expansion and stronger compensation/resettlement frameworks are therefore critical to protect food production and livelihoods (Ayele & Tarekegn, 2020).

According to Brahima and Shixiang (2020), age, occupation, land size, and level of education have significantly impacted annual family income, while family size and gender exerted adverse effects. Low-yield land and youth emigration increased farmers' likelihood of losing their lands to urbanisation. On the contrary, land size, annual income, and age had adverse predictive effects on agrarian land loss.

The driving factors in Nepal's mountainous region included population growth, scattered settlement distribution, urbanisation, socioeconomic development, poor access to physical services, and poor implementation of agricultural development policies. Farmland abandonment adversely affects rural societies, both ecologically and sociologically (Chaudhary et al., 2020).

Evidence from China indicates a U-shaped relationship between farmland-use efficiency and the rate of urbanisation. At low levels of urbanisation, farmland productivity declines; however, at higher levels, technological progress associated with advanced urbanisation offsets these negative effects (Deng et al., 2020).

The future of farming, agricultural land, and farmers in peri-urban areas has become increasingly debated globally, particularly in light of extensive urbanisation. The issue is split between a pessimistic perspective that peri-urban agriculture is at risk and an optimistic perspective that, despite the challenges, agriculture continues to be in operation and, in some instances, is even expanding. In investigating the challenges

and opportunities generated by urbanisation and recent developments in Malaysia, Eltayeb

Elhadary, Samat, and Obeng-Odoom (2013) concluded that farmers have adopted various strategies that could be explained using positive and negative adaptation models.

Farmland in Ontario, Canada, is under immense pressure from development associated with population growth and urbanisation. The future sustainability of agriculture in Ontario depends on a stable land base and a precise understanding of the availability of farmland; however, in many communities, farmland is sacrificed for residential subdivisions, commercial developments, and aggregate operations, among other things (Epp & Caldwell, 2018).

Identifying and protecting vulnerable agricultural areas is a significant priority. Farmland's vulnerability in the face of competing land uses has been a problem, and effective planning tools still need to be improved, especially in identifying urbanisation risk areas (Gottero, 2019).

Land is a primary resource. The swift advancement of economic development, population expansion, urbanisation, and industrialisation stresses agricultural land, resulting in its transformation for non-agricultural purposes. Given agricultural land conversion and its impacts on food security, a mismatch prevails between the demand for and supply of land, leading to the conversion of agricultural land for non-agricultural purposes. The loss of agricultural land or conversion is the main factor

that causes food insecurity by reducing food production (Govindaprasad & Manikandan, 2014).

The likelihood of conflicts in compensating for agricultural land expropriation is influenced by the level of protection afforded to farmers' land rights and interests when self-interest is the prevailing preference. The seamless expropriation of agricultural land depends on strong reciprocal altruism and weak loss aversion preferences in the local government and farmers, which are influenced by various factors. These findings have consequences for the sustainable advancement of land, encompassing government engagement and farmer involvement, especially within developing nations (Hong et al., 2021).

According to the study by Huang, Du, and Castillo (2019), urbanisation significantly negatively affects farmland. Urbanisation causes much higher rates of farmland loss in medium-sized cities and the more developed eastern areas of China. China's dynamic balance policy has a significant positive effect on the farmland area. Huang and Castillo (2019) found that land financing and urban sprawl reinforce the negative impact of urbanisation on farmland areas.

According to Jawarneh (2021), urban expansion and the loss of primarily agricultural land are two challenges facing Jordan. Uncontrolled urban growth has presented a significant challenge to sustaining its prime croplands and developing comprehensive planning strategies. The study confirms the worldwide impact of urbanisation on the loss of the most productive agricultural land on the outskirts and the consequences for food production and food security.

As per Jiang and Zhang (2016), urban land rent and wages play crucial roles in converting agricultural land in China. Additionally, there is a correlation between per capita GDP, increased urban development, and agricultural land loss. As expected, agricultural financial support is inversely linked to agricultural land conversion, indicating a successful policy. Jiang and Zhang (2016) concluded that urban wages are the most influential positive factor, and agricultural financial support is the most influential negative factor affecting urban conversion of agricultural land.

Jose et al. (2022) explained that urbanisation has taken millions of acres of cropland, and its impact is estimated to be similar to the amount of land needed elsewhere to provide the same yield potential, determined by differences in climate and soil properties. The study concluded that converted cropland is 30–40% more productive than new cropland and recommends policies that protect existing cropland from urban expansion.

The research in India Kavitha et al. (2015) indicates that urbanisation is decreasing agricultural land. Over the years, urban expansion to the fringes has reduced agricultural land by 16.31%. With the increase in land and food security requirements, it becomes imperative to protect and conserve farmlands through policy and guidelines (Kavitha et al., 2015).

Due to rapid urbanisation in the areas surrounding Seoul, Korea, the loss of farmland was very significant. According to the study conducted by Kim, Kobayashi, and Mizuno (2003), although the greenbelt of urbanisation well enforced the environmental

protection of ecologically valuable land, farmland was not conserved compared to new residential development in the rapid growth area.

Rapid urban expansion is an essential contributor to environmental change in many parts of the world. Urban growth occurred mainly in areas with highly fertile soil for farming, while new farming expansion happened in soils of lesser quality. Consequently, the average soil quality of agricultural land has decreased in the Calgary-Edmonton corridor, which aligns with the findings of other studies on the effects of urbanisation on food security (Martellozzo et al., 2015).

Rapid urbanisation is accelerating the loss of agricultural land in Hanoi (Vietnam), raising concerns about providing food to inner citizens and the livelihoods of peri-urban farmers. Between 1990 and 2007, around one-third of the agricultural space in Hanoi was converted into developed areas due to urban growth trends (including infill, expansion, and linear branches). This study emphasises the need for immediate action to preserve agricultural land and speed up the establishment of a green belt in Hanoi (Pham et al., 2015).

Qi, Leif, Peilin, and Juan (2005) confirmed that urbanisation is one of the most critical driving forces for farmland loss in China, as it stimulates non-agricultural construction and the adjustment of agricultural structures.

Urbanisation in Hanoi has led to the large-scale conversion of agricultural land to urban uses. This transformation has long-term implications for farming households, particularly those with limited educational attainment, who face significant challenges in transitioning to alternative livelihood opportunities. In recent years, for example,

20,000 farmers have lost agricultural land annually, while the service of alternative vocational training is limited. Losing land makes people unemployed, brings about social criminals, and affects the continuation of agricultural production in the remaining agricultural fields (Quang et al., 2005).

In India, land acquisition from governments, increase in real estate growth, and continued demand for infrastructure development in the periphery of urban areas significantly impact peri-urban farmland and their livelihoods. In the coming days, farming in the peri-urban areas is likely to face many challenges, which require proper attention from the government and the need to establish a mechanism to regulate the sale of agricultural land around peri-urban areas to prevent further agricultural land loss (Ravi et al., 2016).

The influence of urbanisation processes on farmland is twofold: urban encroachments predominantly occur at the expense of farmland and result in farmland abandonment processes. For actual abandonment, the physical and economic size of the farms, parttime farming, and soil quality are the most relevant determinants. Socioeconomic variables play a more critical role in explaining semi-abandonment than actual abandonment. The temporary exclusion of farmland from agricultural production is related to urbanisation processes. Higher shares of urbanised and built areas, higher population densities, and favourable migration rates result in higher shares of semiabandonment (Sroka et al., 2019). The farmland area in Delhi, India, has been diminishing consistently and is projected to continue this trend, a prevalent occurrence in this area (Tang & Di, 2019).

According to the study conducted by Tuan (2021) in Vietnam on peri-urban land acquisition, land acquisition has affected those households whose land was expropriated in many ways, including economic, cultural, and social aspects. The same study analysed livelihoods and satisfaction with their quality of life. According to Tuan (2021), the unemployment rate increases but depends on the gender and age of the worker. The income of households has also declined by 190 USD per household. The misuse of compensation funds that were meant for them has also had a negative impact on their well-being. Furthermore, environmental pollution and social misconduct have added to the burden of households who have lost their land. Hence, most households want to return to their previous agricultural life.

Empirical evidence from peri-urban areas of Hanoi, Vietnam, indicates that farmland reduction exerts an indirect yet positive effect on household well-being. This outcome is largely attributable to the transition of affected households from agriculture-based livelihoods to non-farm economic activities (Tuyen et al., 2014).

No studies have quantified the impacts of farmland loss on livelihood choices in the context of increased farmland loss due to increased urbanisation and industrialisation in developed provinces. The results reveal that households have adapted to the new context by adopting livelihood strategies based on manual jobs and non-farm self-employment activities. Furthermore, although more considerable farmland owned per adult stimulates households to specialise in farming, emerging non-farm job opportunities make young rural workers less interested in farming activities (Tuyen et al., 2011).

2.10 Sustainable Livelihood

A person's means of living includes the skills, possessions (such as material items and social connections), and actions needed to sustain life. A sustainable means of living can help people manage and recover from stress and unexpected events while preserving or enhancing their skills and possessions. Research into the sustainable means of living for rural households is fundamental in addressing rural poverty and facilitating the transfer of rural land management rights, which is essential for achieving improved means of living and sustainable development.

Utilising survey data derived from a cohort of 240 rural households in Sichuan Province, China, the study employed a partial least squares structural equation model (PLS-SEM) to systematically elucidate the multifaceted interactions between livelihood capital, livelihood strategies, and agricultural land transfer (Xu et al., 2019). The empirical results demonstrate that farmers' adopted livelihood strategies exert a statistically significant adverse influence on the characteristics of land transfer, suggesting that shifts in household economic priorities may impede the formalization or efficiency of land market participation (Xu et al., 2019).

A higher non-agricultural labour force/income diversity index increases the likelihood of deploying plots. In contrast, a lower non-agricultural labour force/livelihood diversity index increases the likelihood of rolling in plots.

The livelihood strategy directly and negatively affects natural capital, and indirectly and positively affects land transfer. The livelihood strategy indirectly and positively impacts financial capital insurance, with land transfer having a direct negative and indirect effect through natural capital.

Financial capital insurance directly positively affects financial capital income. However, it indirectly negatively affects land transfer and natural capital, while the livelihood strategy has a direct and indirect positive impact through human capital. Physical capital and human capital are directly and positively impacted by livelihood strategy.

Specific moderating effects were observed, with non-agricultural-dependent farmers having higher physical capital, human capital, financial capital income, and rollout plot area than agriculture-dependent farmers (Shili et al., 2019).

The study conducted by Dalei & Gupta (2014), used an intertemporal sustainable livelihood security index (ISLSI) to cover 312 households in the Purnapani area in the Sundargarh district of Odisha state of India, shows that livelihood sustainability declined. At the same time, mining activity was ongoing and increased marginally during the post-mining period due to the beginning of ecological restoration in the mining-spoilt area (Dalei & Gupta, 2014).

Information obtained from surveys conducted by Ulukan et al. (2022) on 891 households in two regions of Tanzania (arid Dodoma and humid Morogoro) was utilised to create comprehensive sustainability indices that reflect the three pillars of sustainability (economic, environmental, and social) using 46 key indicators. The analysis revealed significant differences in the types that depended on different livelihood strategies, including, in particular, a 'Gathering-based' type in Dodoma and two 'Crop-based' types in both regions. These livelihoods significantly influenced the farming system's sustainability level (Ulukan et al., 2022).

The study conducted by Hua (2017) in Odisha (India), constructed a livelihood security index (LSI) to capture the respondents' livelihood security, considering habitat

security, health security, food security, and economic security. The study finds that beneficiaries need more facilities provided under the programme due to the introduction of the mixed theory approach. The study also suggests adopting a single-theory approach (cyclical perspective) to address poverty (Hua, 2017).

The study in the Sabar Kantha District of the North Gujarat region of Gujarat state analysed that the average mean score of all the selected sub-indicators of SLI of non-tribal respondents was higher than that of tribal respondents. The indicators of sustainable livelihood for farmers differed, encompassing consumption patterns, cultural events, traditions, health services, and financial systems (Prajapati & Patel, 2014).

The study by Rimal (2012) in Pokhara, Nepal, analysed the trend of urbanisation and the transition of cultivated land. Urban and industrial regions expanded substantially, while the area dedicated to farming and open fields reduced significantly between 1977 and 2010. In 1977, urban coverage was 6.33%, but by 2010, it had risen to 51.42%. Cultivated land decreased from 60.73 to 20.27% (Rimal, 2012).

In the Tarai region of Nepal, Rimal et al. (2018) concluded the annual urban growth rate from 1989 to 1996 averaged 3.3 but reached 8.09 and 12.61% from 1996 to 2001 and 2011 to 2016, respectively. At the district level, the urban growth rate and agricultural loss were weakly related to total population growth. The variability in this relationship suggests that concerted urban growth management can reduce losses of agricultural lands relative to historical trends despite continued population growth and urbanisation. The Tarai region has experienced considerable migration, resulting in urbanisation and alterations in land use and land cover (LULC). Inadequate urban planning and lenient policies have led to the transformation and fragmentation of

cultivated land in peri-urban areas. Urban growth and the decrease of farmland are anticipated to endure (Rimal et al., 2018).

The Household Livelihood Vulnerability (HLV) Index, Household Livelihood Security (HLS) Index, and Household Livelihood Diversity (HLD) Index were computed by Abankwah et al. (2021) based on primary data from the field. Livelihood assets describing the socioeconomic characteristics of agrarian households in the form of human, social, natural, physical, and financial capital needed to be better developed. Agrarian households have a negative perception of implementing the institutional framework for small-scale mining in rural communities in Ghana. The lives and assets of agrarian households are vulnerable to small-scale mining. Characterised by moderately low livelihood security and diversity, agrarian households must diversify livelihood portfolios to supplement income from on-farm activities. The study provides practical recommendations to improve the livelihoods of agricultural households in rural communities affected by small-scale mining (Abankwah et al., 2021).

The study conducted by Yang et al. (2021) in rural Chinese families revealed that sustainable livelihoods, including natural, social, financial, and human capital, significantly impact this classification of perceived family resilience. It concluded that rural families in China vary in their levels of family resilience, and the more physical and financial capital they have, the greater the internal cooperation within families. The more natural and traditional social capital families have, the less internal cooperation there is within families. The more human resources families have, the more resilience they have (Yang et al., 2021).

You & Zhang (2017), in China, assessed the sustainable livelihood security of China's provincial farmers and its three components, that is logical security, economic efficiency, and social equity. An SLS index is established, and the entropy weight method is used to determine the weight of the indices and analyses spatial distribution. The results indicate that the sustainable livelihood security index and its components vary between provincial regions, with the western provinces being the most adversely affected, sustainable livelihood, economic efficiency and social equity being the least secure (or relatively insecure) in the western provinces. In contrast, economic efficiency is most secure (or relatively secure) in the eastern and middle provinces, and social equity is most secure in the eastern provinces. The final remarks suggest policies designed to improve the security of sustainable livelihoods of farmers according to local regional circumstances (You & Zhang, 2017).

2.11 Sustainable Livelihood Security

According to Akter and Rahman (2012), livelihood security is a composite measure of a household's economic, food, health, educational, and empowerment security. Aidoo, Etuah, and Fialor (2021) stated that a household's livelihood security positively influences the diversity of the household's income. Increasing the ability to meet basic needs improves the financial capital of households needed to build the socioeconomic profile, livelihood strategies, and social network to reduce their susceptibility to the risk of small-scale mining. Empowering agrarian households to participate in community decisions, providing for their educational, health, and food production needs, and facilitating economic status improve their livelihood security and build their capacity to identify, exploit livelihood opportunities, and construct diverse livelihood portfolios. The Household Livelihood Vulnerability Index (HLV),

Household Livelihood Security Index and Household Livelihood Diversity Index (HLD) Index were computed based on primary data from the field.

The study conducted by Agyei et al. (2019) in Ghana identified urbanisation and the lack of community involvement in catchment management as key factors driving changes in land cover that have adversely affected the livelihoods of local fringe communities. This study highlights the threats of urbanisation to land cover changes and identifies the key drivers of change in land use (Agyei et al., 2019).

Etana et al. (2021) investigated how adaptation strategies affect the long-term viability of livelihoods by incorporating economic, social, and environmental factors to develop a sustainability index of life. It shows that farmers switching crop types, diversifying crops, planting improved seeds, participating in land management activities, and using irrigation had a higher sustainability index than the counterfactual case where they did not use them. Non-farm employment and migration significantly increased livelihood sustainability for the households. However, if nonusers used these factors, they would have reduced livelihood sustainability. Farmers with more than four adaptation strategies had more sustainable livelihoods than those with fewer strategies. The findings affirm that adaptation improves livelihoods (Etana et al., 2021).

Guha et al. (2018) calculated the economic efficiency index, ecological security index (SOC), equity index, and, finally, the Sustainable Livelihood Security Index (SLSI) from household data. They concluded that there is an urgent need to reorient development programmers and carry out priority-wise development investments in these vulnerable villages to provide resources and opportunities to ameliorate their

ecological security, economic efficiency, and social equity, which further sustainable livelihood security.

The study was carried out in Kolar District in Karnataka state to assess the livelihood security of farm households, their dependence on the market for food consumption, and the utilisation of benefits of developmental programmes. Four central farming systems, Crop + Dairy, Crop + Sericulture, Crop + Dairy + Sericulture and Crop + Sheep, were identified and concluded that overall livelihood security was better among C+D+S farm households. The benefit derived from development programmes was higher in C + D + S (R 22,105) farm households (Harishkumar, 2016).

The study conducted by Hassan et al. (2019) on the impact of improved maize varieties on farm household income and livelihood security of maize growers in Kashmir Valley revealed that although the adoption of improved varieties increases the cost of maize cultivation, these varieties improved yield levels, resulting in a significant decline in its cost of production. Adopter farms were observed to have relatively better endowments of physical, economic, social, human, and natural capital, and their livelihood was more secure than nonadopters (Hassan et al., 2019).

In this study, the state endowed with natural beauty, Uttarakhand, is analysed. The sustainable livelihood security index framework measures sustainable security of its social, ecological, and economic aspects. The state government is focused on investments in the hospitality sector because tourists come worldwide to enjoy the state's natural beauty. The capital city, Dehradun, leads the board with the top performance in the SLSI ranking, followed by the natural beauties, Nainital and Almora. Haridwar, the pilgrimage site, is among the top performers. The results of the

study were as expected. The government must develop policies to protect its ecological zones (Kumar & Begum Irfan, 2018).

The study conducted by Mabe et al. (2021) analysed the relevance of forests to the livelihood security of rural households in northern Ghana revealed that forests matter significantly in terms of livelihood security, with the forest livelihood zone recording higher livelihood security than the nonforest livelihood zone (Mabe et al., 2021).

A suitable method has been evolved to generate a Sustainable Livelihood Security Index (SLSI) for agricultural sustainability and to evaluate the existing state. Some measures have also been suggested to promote sustainable agriculture in Uttar Pradesh (Maurya et al., 2018).

Livelihood insecurity remains a significant concern for low-income countries. To provide a secure livelihood to the rural poor, the government of India has introduced a self-employment-type poverty alleviation programme, namely the National Rural Lifeline Mission (NRLM). In Odisha (India), a livelihood security index (LSI) was constructed to capture the respondents' livelihood security, considering habitat security, health security, food security, and economic security. Furthermore, the propensity score matching (PSM) method has estimated the programme's impact. The study finds a positive and significant effect of participation in the programme on livelihood security (Mishra & Debata, 2021).

In coastal communities in Bangladesh, livelihood security consisting of five components: (1) food, (2) Income, (3) Life and health, (4) House and properties, and (5) water security are analysed, and it concluded that the livelihood security model

produces a Livelihood Security Index can be used to evaluate and compare the household security of different livelihood groups (Mutahara et al., 2016).

Sustainable livelihood security is calculated across Indian states and union territories (UT) using secondary data from various sources and a composite livelihood security index. The analyses reveal widespread regional differences among states and UTs in different livelihood domains (Patidar, 2019).

A sustainable livelihood study conducted in the Bengaluru region of Karnataka state on the development of the poultry broiler sector showed that the broiler sector has played a vital role in improving the economic status of rural households, especially the vulnerable section, and has strengthened the security of the livelihood of poultry farming families in the study area (Desai & Prasanna, 2018).

2.12 Sustainable Livelihood Security Index

The concept of sustainable livelihood security has a broader generic meaning about sustainable development to ensure ecologically secure, economically efficient, socially equitable, and sufficiency in infrastructure in society (Garai et al., 2022). According to Mishra and Debata (2021), a Sustainable Livelihood Security Index (SLSI) is constructed to capture the livelihood security of households, considering habitat security, health security, food security, and economic security. A similar study conducted by Deshmukh, Nanaware and Kumbhar (2021) estimated the SLSI based on three main dimensions, that is, social equity, economic efficiency, and ecological security, along with its three sub-indicators dimensions.

Garai et al. (2022) conducted a study on the sustainable livelihood security of dairy farmers in West Bengal, India, using the SLSI using 17 indicators divided into four

subindices: the Ecological Security Index, Economic Efficiency Index, Infrastructure Sufficiency Index, and Social Equity Index. The Dairy-based Sustainable Livelihood Security Index's overall mean value was 0.38, indicating low sustainability status. In the case of subindices, the Infrastructure Sufficiency Index (0.49) and the Environmental Security Index (0.45) were more robust indices than the other two indices, the Economic Efficiency Index (0.32) and the Social Equity Index (0.29), which signified very lower-level sustainability.

A similar study by Ghabru, Devi and Singh (2017) calculated the SLSI for 26 Districts to estimate agricultural sustainability in Gujarat using Sustainable Livelihood Security. Sajjad and Nasreen (2016) evaluated agricultural sustainability using the SLSI characterised by three interacting component indices (ecological security, economic efficiency, and social equity). Sajjad and Nasreen (2016) gathered information on the different aspects of agricultural sustainability in 959 farmers' households and found that agricultural sustainability declined as the size of land holdings reduced. Almost one-third of the total sampled farmers had low agricultural sustainability. Economic efficiency and social equity influenced agricultural sustainability.

Kamaruddin and Samsudin (2014) describe the Sustainable Livelihoods Index (SLI) as a valuable tool to assess the livelihood elements of rural poor households. However, a SLSI based on the Sustainable Livelihood Approach (SLA) framework is used for poverty measurement using a total of 22 livelihood assets and outcome indicators from the data set of five groups of assets, namely human, physical, natural, social, financial assets and two groups of livelihood outcomes, which are food security and health status. Kamaruddin and Samsudin (2014) concluded that the SLSI was moved with the total household income and 90.91% of the households in the hard-core poor

group obtained SLSI below 0.5, indicating that households with a low income will also have a low SLSI.

Krishna et al. (2020) present a SLSI by selecting 20 indicators and positioning them within the ecological, economic, and social dimensions. The findings showed important factors including forest cover, net cultivated area, milk supply, groundwater availability, land productivity, food grain availability, rural road connectivity, electrified villages, and land degradation.

Kumar, Raizada, and Biswas (2014) assessed the sustainable livelihood status of Karnataka's total geographic area (TGA). Using empirical data, Kumar, Raizada, and Biswas (2014) estimated the ecological security index, economic efficiency index, social equity index, and SLSI at the district level for the entire state. The study concluded that 14 districts (51.8% of the state's TGA) classified as 'less sustainable' and 'significantly less sustainable', exposing 44.4% (27.14 million) of the state's population to the dangers of uncertain rainfall, high soil erosion rates, high social inequality, and poor resource use efficiency.

The SLSI approach can best be used to assess the sustainable development of agriculture and create a holistic perspective on the environment and socioeconomic development of the region (Sajjad, Nasreen, & Ansari, 2014).

The SLSI is a composite index that has three component indices, namely, the ecological security index (ESI), the economic efficiency index (EEI), and the social equity index (SEI). SLSI, based on its simplicity and flexibility, is one of the most comprehensive yet simple indices for measuring long-term livelihood security in rural areas. The study districts have low EEI and SEI rankings. However, they have high ESI

rankings and very low ranks in the gender development, education, health, and housing indexes. Therefore, the SLSI identifies the general development priorities and the nature and types of policies to be pursued in each study unit to improve livelihood security (Singh & Hiremath, 2010).

Another study by Singh and Nayak (2020) attempted to examine the livelihood status of nine agricultural zones (ACZs) in the State of Uttar Pradesh in India by adopting the United National Development Programme (UNDP) methodology of the SLSI for different ACZ. A total of 84 rational indicators were employed that covered seven dimensions of livelihood security, that is infrastructure security, agricultural sustainability, economic security, social security, food security, environmental security, and health security. The study findings revealed that the least access to basic amenities, the least social and health security, and higher reliance on agriculture for livelihoods were the main factors that influenced the lower livelihood security in the Bundelkhand zone. At the same time, better infrastructure and health facilities and less dependence on agriculture for livelihoods were the leading contributing indicators for the highest livelihood security in the Vindhyan Zone.

Sustainability is a complex phenomenon that encompasses economic, ecological, and equity dimensions. A minimal dataset was defined using principal component analysis and linear scoring methods. This dataset contains forest cover, livestock and human population density, cropping intensity influencing ecological concerns, groundwater availability, and milk availability impacting social equity issues. Furthermore, it encompasses the net cropped area, land productivity, labour productivity, food grain productivity, and fertiliser usage influencing economic efficiency. These are essential indicators for creating the sustainable livelihood security index (Sridhara et al., 2022).

The SLSI tool has the potential to identify the current sustainability condition and future needs to achieve and hold the sustainability tag. It can show the areas of urgent need to reorient development programmers. Investment in development should be a priority for vulnerable areas to provide them with the appropriate resources and opportunities to improve their ecological security, economic efficiency, and social equity that can ensure sustainable livelihood security for them (Guha, Barik, & Mandla, 2022).

Mishra & Debata, (2021) constructed a SLSI in the Sonepur District of Odisha (India) to capture the respondents' livelihood security, considering habitat security, health security, food security, and economic security. Furthermore, the impact of the National Rural Livelihood Mission (NRLM) programme has been estimated using the propensity score matching (PSM) method. The study conducted by Mishra & Debata, (2021) finds a positive and significant effect of participation in the programme on livelihood security. Therefore, low-income people should be encouraged to participate in the programme to strengthen their livelihood security (Mishra & Debata, 2021).

According to the study conducted by Mohammad et al. (2019) in Burdwan city of the Greater Kolkata metropolitan area and the Asansol Industrial Area Corridor, the rapid expansion of urban development and the built area into the administratively different suburbs and areas surrounding the large towns and cities caused peri-urban farmers to suffer from the negative consequences of unplanned urban growth, associated changes in land use, rapid social change and degradation of natural resources. As a result, this city has experienced problems such as sociospatial segregation, socioeconomic and cultural gaps, uncontrolled land markets and the spread of

informal development. The empirical findings show that the livelihood asset index (LAI) and the home quality of life index (HQLI) determined the sustainable livelihood of the community. The assessment of the livelihood asset index involves the examination of four key capitals: physical, human, financial, and social, which encompass 12 index components. Villages near the city have a high index, whereas far-distance villages have a low index. Finally, it is concluded that as the income asset increases, the quality of life also increases in the peri-urban villages of the Burdwan area (Mohammad et al., 2019).

The study conducted by Wu et al. (2022) in China evaluated SLS in the Eco-economic Zone of Poyang Lake comprehensively from the three aspects of ecology, economy, and society. It analysed their spatial patterns, identified the main constraints, and gave specific suggestions for improving rural sustainability management. The results showed that rural SLS in the inland Great Lake area tended to be vulnerable mainly due to lagging economic efficiency and unbalanced social equality, mediated by regional ecological characteristics (Wu et al., 2022).

Akter and Rahman (2017) constructed indices of household livelihood security (HLS) domains, namely, economic, food, health and education securities and empowerment, with data from 1,120 poor households in two urban settlements in Bangladesh. Akter and Rahman (2017) then jointly identify domain-specific socioeconomic determinants using a multivariate Tobit model. Akter and Rahman (2017) came up with a domain quintile analysis shows high levels of inequalities among these poor households. According to Akter and Rahman (2017) HLS domains are significantly positively correlated, and many factors significantly influence individual HLS domains.

Interventions aimed at improving education, provision of business training, and building land assets are suggested to improve livelihood security.

According to Pradhan et al. (2020) many studies have been conducted on the security of the livelihood of rural households in a more segregated way. Livelihoods are characterised as an assortment of economic activities that involve self-employment or wage employment by using endowments (both human and material) to generate adequate resources to meet the needs of the self-housewife sustainably with dignity. The essence of a person's livelihood is to be considered a means of securing the necessities of life. Livelihood security is a much broader and sometimes misconceived arena. Therefore, this paper intends to critically review the current literature and interpretations of the various aspects of livelihood security and offer some advice for a detailed understanding of sustainable livelihood security (Pradhan et al., 2020).

The study conducted by Mabe et al. (2021) in northern Ghana analysed and ascertained the security of the relevance of forests to the livelihood of rural households. It estimated household livelihood security using six security indices. The study's results revealed that forests matter significantly regarding livelihood security, with the forest livelihood zone recording higher livelihood security than the nonforest livelihood zone. The study established using Welch's to test a statistically and significantly higher livelihood security in the forest zone than in the nonforest zone (Mabe et al., 2021).

Sridhara et al. (2022) estimated normative sustainable indicators for Karnataka, considering 20 crucial indicators or variables that govern different dimensions.

Based on research conducted by Meraj et al. (2022), it was found that small-scale farming systems in India's semi-arid regions demonstrate a positive correlation between the SLSI and the integrated crops-livestock system, indicating a potential for restoring both economic and ecological sustainability. Meraj et al. (2022) used the ecological security index (ESI), economic efficiency index (EEI), and social equity index (SEI) to produce an improved integrated farming system (IFS) SLSI compared with benchmark farming in semi-arid regions. The study suggests that the improved IFS provided a more comprehensive range of livelihood security than the existing practices. Therefore, a paradigm shift from the component approach to an IFS-based resilient system is needed, which is economically viable, environmentally sustainable, and socially acceptable for developing semi-arid regions.

Banu & Fazal (2017) tried to depict livelihoods and their sustainability in the transforming economy of the peri-urban interface (PUI). Banu & Fazal (2017) assumes that peri-urbanisation adds complexity to household livelihood security and has been considered a stressor. Banu & Fazal (2017) employed the Sustainable Livelihood Approach to grasp households' livelihood situations. It also investigates how households adapt to PUI's transforming economic and social environment, examining their coping strategies.

2.13 Livelihood Assets/Capital

The livelihoods approach is people-centred, viewing livelihoods as the capabilities, assets, and activities required for a means of living that can cope with and recover from stresses and shocks, maintain or enhance assets and capabilities, and not undermine the natural resource base (Chambers & Conway, 1992; Serrat, 2017). It is inherently multi-disciplinary and descriptive, illuminating the diverse ways people

make a living and explicitly countering single-track (“monovalent”) development perspectives (Baumann, 2000; Scoones, 2009).

Operationally, the Sustainable Livelihoods Framework (SLF) organizes analysis around five forms of capital, human, social, natural, physical, and financial, and the institutions and policies that mediate access to them, shaping livelihood strategies (for example, intensification/extensification, diversification, and migration) and outcomes such as poverty reduction, well-being, and resilience (DFID, 1999; Scoones, 1998; Serrat, 2017). The framework embeds these processes within a broader vulnerability and policy context, macroeconomic trends, social differentiation, politics, demography, history, and climate, that structures opportunities and constraints (DFID, 1999; Scoones, 2009).

Consistent with new institutional economics, access to key resources, especially land as natural capital, is mediated by property rights and tenure regimes, which can either enable or constrain sustainable livelihood strategies (North, 1990; Scoones, 1998). The SLF is best seen as a practical, complementary tool for identifying priorities grounded in people’s own perspectives; it does not replace other approaches (for example, integrated rural development, participatory methods, sector-wide approaches) but helps link people to the environmental and institutional contexts that shape their choices (DFID, 1999; Serrat, 2008).

2.14. The Research Gaps

Based on the literature review provided, here are three critical research gaps identified:

There is a lack of comprehensive understanding of the holistic sustainable livelihood security of displaced communities around Addis Ababa due to urban expansion. While numerous studies have examined the qualitative and quantitative impacts of urban

expansion on income and poverty, there is limited empirical data available specifically on the composite sustainable livelihood security for Addis Ababa and its surrounding areas. The current research aims to address this gap by quantifying the impacts of urbanisation using a sustainable livelihood security framework and empirical data analyzed with a binary logistic regression model.

The literature reveals a mismatch between urbanisation policies and displacement practices in peri-urban farming communities around Addis Ababa. There is insufficient research on how existing policies and practices align with the needs and realities of displaced farmers. More studies are needed to examine the effectiveness of current compensation frameworks, land governance systems, and alternative land acquisition methods in promoting sustainable and equitable urban development while protecting the livelihoods of peri-urban communities. This study contributes to the knowledge for these gaps.

There is a gap in understanding the long-term livelihood adaptation strategies of displaced farmers in Ethiopia, particularly in the context of rapid urbanisation. While some studies have touched on the immediate impacts of displacement, there is limited research on how farmers adapt their livelihoods over time, including their ability to transition to non-agricultural activities, their use of compensation funds, and the role of social networks in facilitating adaptation. Additionally, there is a need for more research on the differential impacts of urbanisation on various demographic groups within peri-urban communities, such as women, youth, and the elderly.

2.15 Chapter Summary

This chapter addressed the literature review on urban expansion, urbanisation as a global issue, urbanisation in Ethiopia, and Land tenure in Ethiopia. The chapter also

reviewed the literature on land grabbing and land reform as an alternative to land grabbing, and the justification of land reform was also comprehensively discussed. A history of urbanisation in Ethiopia was interrogated as well. The chapter also reviewed the literature on sustainable livelihoods and discussed the framework for sustainable livelihoods. The next chapter addresses the research methodology employed in the study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter outlines the methodological framework underpinning the study. It presents the research strategy adopted and explains the rationale guiding the selection of the research design and associated methods. The chapter demonstrates how the study's objectives, research paradigm, design, and overall purpose were aligned to ensure conceptual coherence and methodological rigor. The chosen design not only structured the organization of the thesis but also guided the sequential conduct of the research process.

A foundational consideration in the development of the methodology was the articulation of an appropriate research philosophy. Research philosophy, often referred to as the philosophy of science, clarifies the ontological, epistemological, and axiological assumptions that shape the generation, interpretation, and evaluation of knowledge within a study. As emphasized by Saunders, Lewis, and Thornhill (2019), making these assumptions explicit is essential for ensuring consistency between philosophical stance, research strategy, and methodological choices. Creswell (2009) similarly refers to this orientation as a "philosophical worldview," highlighting its influence on research design and inquiry approach. Accordingly, this chapter discusses the principal research philosophies and situates the study within its selected paradigm, demonstrating how this orientation informed subsequent methodological decisions.

In line with Creswell (2009), a research design serves as the framework that links a study's guiding paradigm to its strategy of inquiry and specific data collection and analysis methods. Given the adoption of a case study approach, the chapter explains the research setting, case selection criteria, processes of access and entry, and the

roles assumed by the researcher. The embedded multiple-case study design is described in detail, with particular emphasis on the embedded units of analysis. The chapter further summarizes the sampling procedures, data collection techniques, and analytical strategies employed. While implementation and analysis are interconnected, this section specifically elaborates on the methodological procedures used for both qualitative (textual) and quantitative data analysis. Throughout, the rationale for methodological choices is articulated, and the interrelationships among research design, inquiry approach, and analytical techniques are clarified to ensure transparency and methodological robustness.

3.1.1 The Study Context

The research context that shaped the study is described in this section. The study examined the effects of urban growth on the ability to support themselves in the aftermath of Addis Ababa city, Ethiopia. The study was an empirical investigation. The study's main focus was on how urban growth affects the ability of peri-urban communities to support themselves. The study was also placed in the context of the Ethiopian communities that surround Addis Ababa city. Farmers who were formerly able to support themselves on their property have lost it due to urban growth in remote indigenous areas, leaving them vulnerable to the unfavourable externalities of urbanisation.

The following research questions, which were examined using the methods described in this chapter, served as a contextual guide for the study.

1. How do forced evictions resulting from urban expansion affect the livelihood security of peri-urban households?
2. Are there differences between the livelihood security of the evicted and non-evicted households in the study area?

3. Are there significant differences in economic/financial income disparities between evicted and non-evicted peri-urban households due to urban expansion, and how does this affect their economic well-being?
4. How do urban expansion and forced eviction influence the various components of livelihood security, including economic, social, human, land, physical capital, infrastructure service, Information Communication Technology (ICT), and food security) affect the impacts of urban expansion and eviction and associated factors?
5. How have urban expansion and forced evictions affected the food security of peri-urban farming households?

3.1. 2 The Study Area

The Lemmi Kura and Kura Jidda sub-city of the Addis Ababa city government and Sheger city of the Oromia region, respectively, in Ethiopia are the only areas included in the proposed study. The ten subcities out of eleven under the Addis Ababa municipal administration were founded in early 2002/03. In 2019/20, the Lami Kura sub-city was created as the 11th and final sub-city. By incorporating several Woredas from nearby subcities, particularly Bole and Yeka sub-cities, Lammi Kura sub-city was created. Ten Woredas, the lowest level of government structure in Addis Ababa, are found in the Lammi Kura sub-city. One of Addis Ababa's city expansion zones is the Lammi Kura sub-city (Figure 3.1). Individual localities of the Lemmi Kura sub-city covered by this study include Woreda 14 (Yeka Abbado), Woreda 2 (Ayat), and Woreda 6 (Bole Arabsa). Kura Jidda Woreda from the Kura Jidda sub-city of Sheger city of Oromia region was selected for comparison purposes.

According to the most recent data available from the Lammi Kura Sub-city Office of Urban

Agriculture and Rehabilitation, between 1997 and 2018, around 12,000 households had their farms taken away. Construction of condos at Woreda 2, 3, 4, 5, 6, 13, and 14 in the sub-city by the government and real estate development projects in Woreda 2 and 3 by private enterprises such as Ayat, Sunshine, Gift, Haile, and Addis Mender Real Estates, were the main causes of displacement. The Lammi Kura sub-city of Addis Ababa's Woreda 2, 6, and 14 experienced the greatest relocation. Based on the aforementioned information, the researcher was persuaded to choose the field of study at hand.

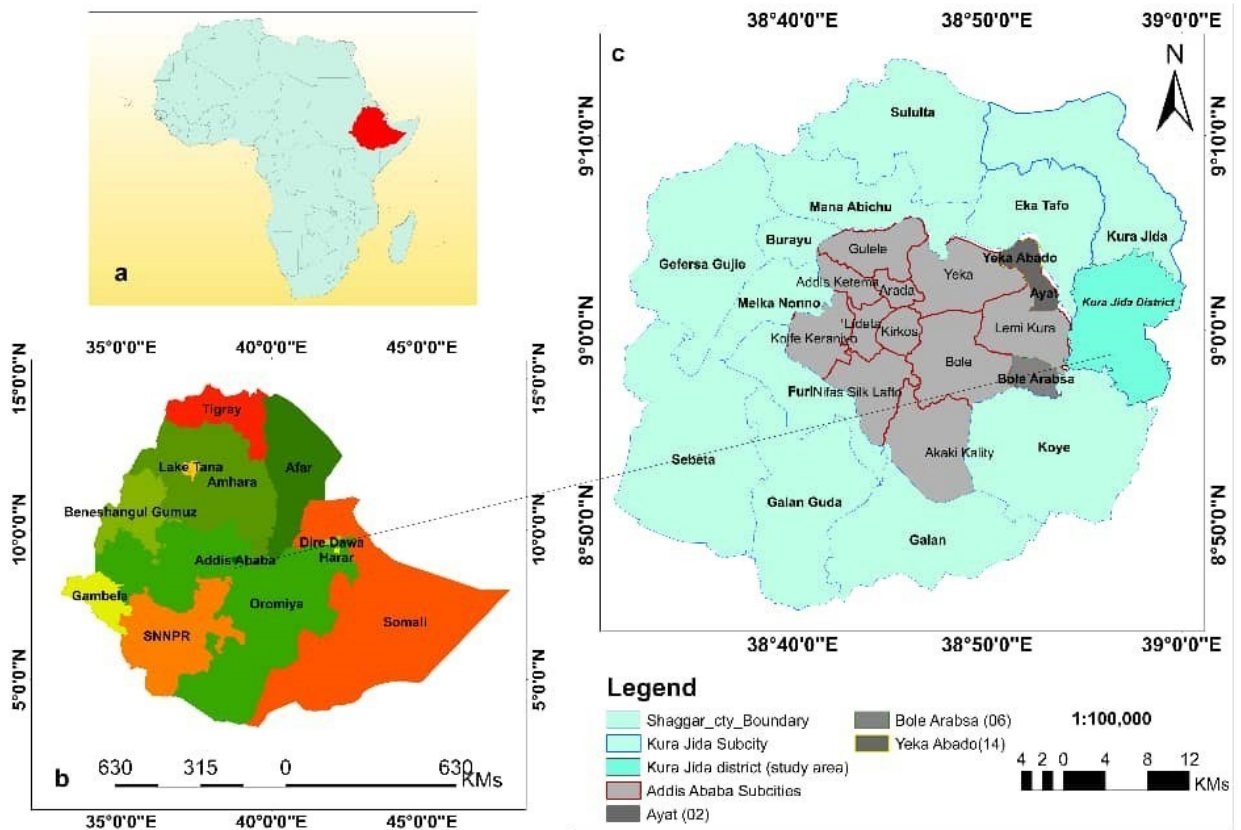


Figure 3.1: Map of the Study Area, Addis Ababa with Sub-Cities

Source: Researcher's own prepared map

Data collection and analysis, both quantitative and qualitative, are crucial to addressing the aforementioned central research concerns. Due to this and based on

the literature reviewed, the researcher decided to gather quantitative data from two sample groups of households (those that have been evicted and those that have not). The household survey provided a quantitative data. In addition, in-depth information regarding each research topic has been obtained from the community members who were chosen from the research areas through the use of qualitative data collected through Focus Group Discussions (FGDs) and Key Informant Interviews (KII). There were 60 KII selected from sample Woredas.

For the data analysis, inferential statistics such as the SLSI indexes and the binary logistic regression model were used. The research approach is expounded upon in the ensuing subsection.

3.2 Research Philosophy and Paradigm

The philosophical orientation of the researcher plays a central role in shaping the overall inquiry process, as it informs the selection of a research paradigm and guides decisions regarding design, methods, and justification of knowledge claims (Rao, 2018; Ryan, 2018). Ontological assumptions concerning the nature of reality, epistemological positions regarding what constitutes valid knowledge, axiological considerations about the role of values, and methodological reasoning collectively influence the structure and direction of a study. Drawing on the “research onion” framework proposed by Saunders et al. (2019), four major philosophical positions were critically examined: positivism, interpretivism, critical realism, and pragmatism. Positivism and post-positivism emphasize objectivity, structured measurement, hypothesis testing, and statistical inference, acknowledging that findings are probabilistic rather than absolute (Creswell, 2009; Ryan, 2018). Interpretivism or constructivism prioritizes the exploration of contextually situated meanings that are

co-constructed between participants and researchers (Crotty, 1998; Lincoln & Guba, 1985). Critical realism seeks explanatory depth by identifying underlying mechanisms that generate observable social phenomena (Bhaskar, 1975; Sayer, 2000). Pragmatism, in contrast, centers the research problem itself and endorses methodological pluralism, evaluating knowledge based on its practical consequences and usefulness (Johnson & Onwuegbuzie, 2004; Morgan, 2007).

These philosophical positions are closely linked to methodological choices. Positivist and post-positivist approaches commonly align with structured surveys, large-sample quantitative analysis, and statistical modeling. Interpretivist perspectives are typically associated with qualitative designs that elicit participants' meanings through interviews, observations, and document analysis. Critical realist studies frequently combine methods to identify and reason about generative mechanisms. Pragmatic approaches integrate quantitative and qualitative strands to address complex research problems in a coherent manner (Creswell & Creswell, 2018; Saunders et al., 2019).

After evaluating these ontological and epistemological alternatives, the researcher adopted a pragmatist paradigm. Given the multifaceted nature of urban expansion and its impacts on livelihood security, a single methodological tradition was considered insufficient to capture both measurable patterns and lived experiences. Consequently, a mixed-methods design was employed. The quantitative component, implemented through structured questionnaires, draws on post-positivist tools to estimate patterns, relationships, and levels of impact. The qualitative component, implemented through semi-structured interviews and related techniques, utilizes interpretivist reasoning to explore contextual meanings and underlying mechanisms. This integration was intentionally planned at the design stage to ensure philosophical

and methodological coherence rather than being introduced in an ad hoc manner (Johnson & Onwuegbuzie, 2004; Creswell & Plano Clark, 2018; Morgan, 2007).

3.3 Research Design

3.3.1 Research Design Overview

The research design of this study serves as the central framework through which the researcher systematically connected the research questions to the evidence required to answer them. In line with Sekaran and Bougie (2016) and Creswell and Creswell (2018), the design was conceived as an overarching blueprint specifying how data would be collected, measured, and analysed to ensure that the study's objectives were addressed in a rigorous and coherent manner. The researcher deliberately structured the design to integrate all key components of the inquiry into a logically consistent plan, thereby making explicit the reasoning through which empirical findings would substantiate the claims advanced (Saunders, Lewis, & Thornhill, 2019).

In conceptualising the study, careful attention was given to distinguishing between research design and research strategy. While some scholars use these terms interchangeably (Greener, 2008), the present study adopts the position that design represents the comprehensive framework aligning philosophical stance, research purpose, time horizon, and standards of evidence, whereas strategy refers to the specific approach, such as survey, case study, or ethnography, employed within that framework to generate data (Sekaran & Bougie, 2016; Saunders et al., 2019). Accordingly, the researcher treated strategy as nested within, and guided by, the broader design architecture.

Particular emphasis was placed on ensuring methodological robustness. The design was structured to enhance construct validity through clear operationalisation of key

variables and the triangulation of data sources. Internal validity was strengthened by anticipating alternative explanations and specifying appropriate analytical procedures. External validity and transferability were clarified through explicit definition of the study population, research setting, and the logic underpinning generalisation (Creswell & Creswell, 2018; Yin, 2014). In this way, the researcher ensured that the study design functioned not merely as a collection of techniques, but as a coherent and defensible inquiry capable of generating credible and analytically sound conclusions.

Exploratory research is undertaken to clarify phenomena that are not yet sufficiently conceptualised or where theoretical boundaries and relationships remain indistinct. It is particularly appropriate in contexts where existing evidence is limited, measurement tools are underdeveloped, or scholarly understanding of the issue is still evolving (Saunders, Lewis, & Thornhill, 2019; Stebbins, 2001; Babbie, 2013). Such designs typically rely on open-ended inquiry and flexible procedures to surface emerging themes, refine constructs, and generate provisional propositions that can inform more structured subsequent investigation (Sreejesh, Mohapatra, & Anusree, 2014; Edmondson & McManus, 2007).

In methodological terms, exploratory research often reflects an inductive orientation and makes extensive use of qualitative techniques, including literature reviews, key-informant interviews, in-depth interviews, focus group discussions, document analysis, and field observation. Limited quantitative probes may also be incorporated where appropriate (Sekaran & Bougie, 2016; Creswell & Creswell, 2018). The primary aim is not hypothesis testing but rather conceptual clarification, problem framing, and the identification of relevant variables and relationships. Typical outputs include

refined research questions, preliminary classifications, and improved operational definitions (Edmondson & McManus, 2007; Stebbins, 2001).

In designing the present study, the researcher carefully considered the potential value of a purely exploratory approach. However, given that the study's objectives extend beyond initial scoping to include descriptive, correlational, and explanatory analysis, an exclusively exploratory design was not adopted as the principal framework. Nevertheless, exploratory elements were deliberately incorporated at the formative stage. Preliminary interviews, systematic literature mapping, and instrument piloting were undertaken to refine key constructs, enhance measurement validity, and strengthen the overall design before full-scale data collection commenced (Edmondson & McManus, 2007; Saunders et al., 2019). Through this integration, the researcher ensured that exploratory procedures contributed to conceptual clarity and methodological robustness while remaining embedded within a broader mixed-methods design.

3.3.2 Descriptive Research Design

Descriptive research is designed to provide a systematic and accurate account of a phenomenon, population, or context by addressing questions of "who, what, where, when, and how many," rather than establishing causal relationships (Kumar, 2014; Saunders, Lewis, & Thornhill, 2019). In structuring this study, the researcher recognised the importance of documenting the characteristics, distributions, and observable conditions surrounding the research problem to establish a solid empirical foundation. Descriptive research thus serves to clarify key attributes of the study population and generate reliable baseline information that can support subsequent analytical and explanatory inquiry (Babbie, 2013; Sreejesh, Mohapatra, & Anusree,

2014). Unlike experimental approaches, it does not involve manipulation of variables or testing of causal hypotheses (Atmowardoyo, 2018).

Methodologically, descriptive designs may incorporate both quantitative and qualitative data sources. Surveys, structured interviews, direct observation, and documentary review are commonly employed to capture patterns and distributions (Sekaran & Bougie, 2016; Sreejesh et al., 2014). In the present study, the researcher utilised structured instruments to generate measurable indicators of livelihood conditions, while also integrating limited qualitative inputs to enrich contextual understanding. Although qualitative elements were included, the primary intention remained the systematic characterisation of existing conditions rather than causal explanation (Saunders et al., 2019; Creswell & Creswell, 2018). In this respect, the descriptive component builds upon earlier exploratory work by translating refined constructs into operational variables and measurable indicators.

The researcher also acknowledged that descriptive research is sometimes incorrectly equated with qualitative inquiry. While qualitative methods can contribute to descriptive objectives, descriptive design is defined by its focus on precise measurement, clear operational definitions, and transparent reporting that enables comparison across groups, locations, or time periods (Nassaji, 2015; Kumar, 2014; Babbie, 2013).

For the present study, a purely descriptive approach was deemed insufficient to address the broader research objectives, which extend beyond profiling toward examining relationships among variables. Consequently, the descriptive component is integrated with a correlational element, both non-experimental in nature, to move

beyond documenting “what exists” toward identifying patterns of association that can inform more robust explanatory analysis (Williams, 2007; Mohajan, 2020).

3.3.3 Causal (Explanatory) Research Design

Causal, or explanatory, research is concerned with determining whether, and to what extent, variation in an independent variable (X) leads to changes in a dependent variable (Y). In conceptualising this study, the researcher recognised that explanatory design extends beyond descriptive profiling to address why particular outcomes occur. Such designs require attention to temporal ordering, covariation, and the systematic consideration of alternative explanations (Shadish, Cook, & Campbell, 2002; Saunders, Lewis, & Thornhill, 2019). Whereas exploratory and descriptive components clarify constructs and document patterns, explanatory research tests theoretically grounded propositions regarding relationships among variables (Kumar, 2014; Saunders et al., 2019).

Causal inquiry may be pursued through experimental, quasi-experimental, or observational approaches. True experiments, such as randomized controlled trials, manipulate the independent variable and randomly assign units to conditions, thereby maximising internal validity (Shadish et al., 2002). Quasi-experimental designs approximate experimental logic where randomisation is impractical, employing strategies such as difference-in-differences, regression discontinuity, instrumental variables, or interrupted time series (Angrist & Pischke, 2009). Observational studies can also support causal inference under explicit assumptions, using techniques such as matching, weighting, panel-data modelling, or causal diagrams to structure adjustment strategies (Rubin, 1974; Pearl, 2009; Hernán & Robins, 2020). Across these approaches, causal reasoning is grounded in counterfactual logic, whereby the effect

of X is conceptualised as the difference between the observed outcome and the outcome that would have occurred under an alternative exposure (Rubin, 1974; Hernán & Robins, 2020). Mere statistical association is therefore insufficient; credible causal claims depend on a defensible research design and transparent assumptions (Williams, 2007; Shadish et al., 2002).

In designing the present study, the researcher acknowledged that practical and ethical constraints precluded the use of true experimental designs. Consequently, explanatory elements are addressed through non-experimental quantitative techniques capable of examining associations and estimating effects, while carefully considering potential threats to validity, including selection bias, history effects, maturation, instrumentation, regression, and attrition (Shadish et al., 2002; Asenahabi, 2019). Although explanatory research frequently relies on quantitative estimation methods such as regression and related inferential tools, qualitative evidence is incorporated to illuminate mechanisms and contextual dynamics, thereby strengthening the plausibility of the explanatory narrative (Creswell & Creswell, 2018; Maxwell, 2012).

Overall, the explanatory dimension of this study seeks to clarify specific linkages between urban expansion and livelihood outcomes using appropriate analytical logic and statistical procedures. Its credibility rests on the coherence of the design, the transparency of underlying assumptions, and explicit acknowledgement of methodological limitations (Saunders et al., 2019; Angrist & Pischke, 2009).

3.4 Research Approaches

In structuring this study, the researcher engaged with the three principal approaches to scholarly inquiry: qualitative, quantitative, and mixed methods. These approaches are

distinguished by their respective strategies for data collection, analysis, and inference (Creswell, 2009; Mouton, 2001). Although historically associated with distinct research traditions, contemporary methodological scholarship recognises their complementarity and the value of deliberate integration when the research problem demands it (Teddlie & Tashakkori, 2009). The choice of approach in this study was therefore guided by the nature of the research questions and the complexity of the phenomenon under investigation.

Qualitative approaches are particularly suited to exploring contextualised meanings, lived experiences, and social processes. They rely on techniques such as in-depth interviews, observation, and document analysis, with analysis typically proceeding through inductive and interpretive reasoning (Creswell & Creswell, 2018). Quantitative approaches, in contrast, prioritise measurement, structured instruments such as questionnaires, statistical modelling, and probabilistic inference to estimate patterns, distributions, and associations, and, where design permits, causal effects (Kumar, 2014; Creswell & Creswell, 2018). Each approach offers distinct strengths: qualitative inquiry provides depth and contextual insight, whereas quantitative analysis offers breadth, comparability, and generalisable patterns.

Recognising the multidimensional nature of urban expansion and its livelihood implications, the researcher adopted a mixed-methods approach. Mixed methods intentionally combine qualitative and quantitative strands within a unified research design to leverage their complementary advantages (Denscombe, 2010; Teddlie & Tashakkori, 2009). This integration occurs not only at the level of data collection but also during analysis and interpretation, enabling the study to connect statistical patterns (“how much” and “for whom”) with explanatory insights (“how” and “why”) (Eisenhardt, 1989; Yin, 2009; Dul & Hak, 2008).

In the present research, a mixed-methods logic was deliberately embedded from the design stage. Quantitative findings were used to identify measurable trends and associations, while qualitative evidence provided contextual depth and interpretive clarity. The strands were connected and integrated during interpretation to reinforce validity through triangulation

and to produce a more comprehensive and analytically robust understanding of the research problem (Creswell, 2009; Leedy & Ormrod, 2010; Teddlie & Tashakkori, 2009).

3.4.1 Qualitative Versus Quantitative Approaches

In framing the methodological architecture of this study, the researcher recognised that both qualitative and quantitative approaches proceed through a systematic research cycle: defining the problem, reviewing relevant literature, designing the study, collecting and analysing data, and drawing conclusions (Cooper & Schindler, 2014; Creswell & Creswell, 2018). Although these stages are common to both traditions, they are operationalised differently according to the underlying logic of inquiry. Despite these differences, both approaches share a commitment to producing credible, transparent, and ethically grounded knowledge. Their primary distinctions lie in research purpose, forms of data, modes of analysis, and the criteria used to evaluate quality and rigor.

Quantitative approaches typically emphasise measurement, numerical data, and statistical inference to establish patterns, distributions, and relationships. Qualitative approaches prioritise contextual understanding, meaning-making, and interpretive analysis of textual or observational data. In designing this study, the researcher carefully evaluated the strengths and limitations of each approach in relation to the research objectives. It was determined that reliance on a single methodological tradition would constrain the study's analytical depth and practical relevance.

Accordingly, the study incorporates a mixed-methods orientation, integrating the breadth and generalisability of quantitative analysis with the depth and contextual richness of qualitative inquiry (Creswell & Plano Clark, 2018; Teddlie & Tashakkori, 2009). This integration was not incidental but deliberately planned. Explicit decisions

were made regarding the timing, relative weighting, and points of connection between the two strands to ensure coherence and analytical complementarity. Through this structured integration, the researcher aimed to enhance explanatory power and strengthen the practical utility of the study's findings.

3.4.1.1 Rationale for Using a Mixed-methods Design

In determining the most appropriate methodological pathway, the researcher adopted a mixed-methods design to harness the complementary strengths of qualitative and quantitative approaches while addressing their respective limitations. This decision reflects a pragmatic orientation, whereby methods are selected based on their capacity to effectively address the research problem rather than adherence to a single methodological tradition (Morgan, 2007; Teddlie & Tashakkori, 2009). Quantitative methods provide strengths in measurement precision, comparability, and statistical inference, yet they may be limited in capturing participants' lived experiences and contextual dynamics. Conversely, qualitative methods offer depth, contextual richness, and explanatory insight, but are not intended for statistical estimation or broad generalisation (Creswell & Creswell, 2018). The integration of both strands was therefore intended to enhance the completeness, credibility, and robustness of the study's inferences (Greene, Caracelli, & Graham, 1989; Fetters, Curry, & Creswell, 2013).

Consistent with this rationale, the study was structured around an explanatory sequential design (QUAN → QUAL). The initial quantitative phase generated empirical estimates and examined associations among key variables. This was followed by a qualitative phase designed to interpret, clarify, and elaborate upon the statistical patterns identified (Creswell & Plano Clark, 2018). Furthermore, prior to the main survey implementation, the researcher conducted a limited qualitative "building" pilot

to refine constructs, improve item clarity, and strengthen measurement validity. This early-stage integration ensured methodological coherence and enhanced the reliability and validity of the instruments before full-scale data collection commenced (Fetters et al., 2013).

3.5 Research Strategy

In structuring the empirical component of this study, the researcher drew on the “research onion” framework to organise strategic choices, moving from philosophical positioning to time horizon and specific strategies of inquiry, including experiment, survey, archival research, case study, ethnography, action research, grounded theory, and narrative inquiry (Saunders, Lewis, & Thornhill, 2019; Melnikovas, 2018). The selection of a research strategy was undertaken deliberately and systematically, guided by three central considerations: the type of evidence required to answer the research questions, the inferential warrants necessary to justify claims, and established methodological standards within the field (Creswell & Creswell, 2018; Saunders et al., 2019).

Given that the study seeks to address predominantly “how” and “why” questions within real-life contexts, the researcher adopted a case study strategy (Yin, 2014). A case study approach is particularly appropriate when the boundaries between phenomenon and context are blurred, when in-depth understanding is prioritised over broad prevalence estimation, and when multiple sources of evidence can be triangulated to strengthen explanatory insight (Yin, 2014; Stake, 1995; Eisenhardt, 1989). These conditions closely align with the objectives of the present research, which examines complex livelihood dynamics within peri-urban settings shaped by urban expansion.

To enhance analytical depth and comparative insight, the study was structured as a multiple-case design with embedded units of analysis. This configuration enabled systematic comparison across selected peri-urban localities and relevant stakeholder groups while preserving contextual specificity (Yin, 2014; Eisenhardt, 1989). The researcher intentionally incorporated heterogeneous data sources to maximise evidentiary breadth and depth. These included a structured survey to profile key livelihood variables, documentary and archival materials such as policies and legislation, semi-structured interviews, and direct field observation. Such methodological triangulation strengthens construct validity and generates a more comprehensive explanatory account than reliance on a single data source (Cooper & Schindler, 2014; Yin, 2014; Creswell & Creswell, 2018).

While alternative strategies within the research onion framework were considered, not all were suitable for the nature of the research problem. True experimental designs, for example, were neither ethically nor practically feasible in this context. In contrast, the case study strategy aligns with the study's pragmatist orientation, emphasising problem-centred, context-sensitive inquiry and the use of methods most appropriate to illuminate the phenomenon under investigation (Morgan, 2007; Saunders et al., 2019).

Overall, the case study strategy, complemented by a structured survey and extensive documentary analysis, provides a methodologically coherent and analytically rigorous approach. It enables context-sensitive explanation, triangulated evidence, and analytic generalisation rather than statistical generalisation (Yin, 2014; Stake, 1995), thereby ensuring alignment between the research questions, the forms of evidence gathered, and the inferential claims advanced.

3.6 Research Process

The research undertaken in this study followed a systematic and deliberately structured process rather than a fragmented or ad hoc sequence of activities. In line with established methodological guidance, the researcher conceptualised the inquiry as a coherent progression linking research questions to evidence, analysis, and defensible conclusions (Creswell & Creswell, 2018; Saunders, Lewis, & Thornhill, 2019). Although the stages of research are often presented sequentially, the researcher recognised the inherently iterative nature of the process, allowing emerging insights to refine concepts, instruments, and analytical strategies as the study progressed (Maxwell, 2013).

The process began with problematisation and formulation of research questions, where the researcher clarified the central problem, delimited the scope of inquiry, and articulated precise, researchable questions aligned with the study's objectives and intended scholarly contribution. This was followed by a comprehensive literature review and theoretical framing, through which prior empirical findings were mapped, knowledge gaps identified, and an appropriate conceptual framework selected to guide operationalisation and interpretation (Booth, Colomb, & Williams, 2016; Saunders et al., 2019).

Subsequently, the researcher made explicit the philosophical stance and research design, articulating ontological and epistemological assumptions before selecting a pragmatist-oriented mixed-methods case study design suited to the research problem (Creswell & Creswell, 2018; Saunders et al., 2019). Ethical considerations were then addressed through appropriate approvals, informed consent procedures, confidentiality safeguards, and risk mitigation strategies, ensuring adherence to

established standards of responsible research conduct (Lincoln & Guba, 1985; Merriam & Tisdell, 2016).

The researcher proceeded with operationalisation and instrument development, translating theoretical constructs into measurable indicators and developing data collection tools, including questionnaires and interview guides. These instruments were piloted to assess clarity, reliability, and validity before full-scale implementation (Fowler, 2014; Creswell & Creswell, 2018). Sampling and case selection were then undertaken using criteria aligned with the study's explanatory aims, ensuring appropriate representation and contextual relevance (Yin, 2014; Patton, 2015).

During data collection, standardised procedures were followed for quantitative components, while qualitative data were gathered through interviews, document review, and field observations, with careful documentation to maintain an audit trail (Creswell & Creswell, 2018; Yin, 2014). Rigorous data management and quality assurance practices were implemented, including data cleaning, anonymisation, secure storage, and documentation of coding frameworks and analytical decisions (Miles, Huberman, & Saldaña, 2014; Lincoln & Guba, 1985).

The analysis phase involved both quantitative and qualitative procedures. Quantitative data were subjected to descriptive and inferential statistical analysis, with attention to assumptions, model fit, and reporting of uncertainty. Qualitative data were analysed through iterative coding, thematic development, and analytic memoing to ensure depth and interpretive coherence (Braun & Clarke, 2006; Charmaz, 2014). Given the mixed-methods design, explicit integration occurred through connecting and merging strands, allowing statistical patterns to be explained and elaborated through qualitative insights (Fetters, Curry, & Creswell, 2013; Creswell & Plano Clark, 2018).

Finally, the researcher engaged in inference, validation, and trustworthiness assessment, evaluating findings against appropriate criteria for validity, reliability, credibility, transferability, and confirmability. Triangulation, sensitivity checks, and transparent documentation strengthened the robustness of conclusions (Shadish, Cook, & Campbell, 2002; Lincoln & Guba, 1985). The study culminated in systematic reporting and dissemination, presenting methods and findings with sufficient transparency to permit scholarly scrutiny, while acknowledging limitations and outlining implications for policy and future research (Creswell & Creswell, 2018; Saunders et al., 2019).

By anchoring the inquiry within this structured and reflexive process, the researcher ensured that evidence was gathered, analysed, and interpreted in a manner that is ethical, transparent, and methodologically defensible, thereby contributing rigorously to the advancement of knowledge in the field.

3.7 Population and Sampling

Although urban expansion within Addis Ababa has resulted in the displacement of more than 12,000 households across the wider city administration, the present study delimited its empirical focus to a clearly defined and administratively identifiable population within Lemmi Kura Sub-City. Specifically, the target population comprised 415 displaced households who were formally registered by the city administration and currently receive direct monthly financial assistance in the form of a pension payment of approximately ETB 2,100.

The decision to concentrate on this subgroup was methodologically justified for several reasons. First, the 415 households constitute a traceable and verifiable cohort of displaced residents whose status has been officially recognized by the municipal authorities. This administrative recognition enhances the reliability of the sampling

frame and minimises coverage error. Second, the provision of monthly pension support indicates that these households have experienced substantial livelihood disruption, thereby making them particularly relevant for examining the socio-economic consequences of displacement under conditions of urban expansion. Third, the relatively homogeneous policy treatment of this group (that is, uniform pension support) provides a consistent baseline for analysing variations in livelihood outcomes within a comparable institutional context.

Accordingly, the study employed a two-stage sampling approach. At the first stage, purposive sampling was used to delimit the study population to the 415 displaced households in Lemmi Kura Sub-City who receive municipal pension support. This purposive selection was guided by the research objective of assessing the impacts of displacement on livelihood security within a clearly defined and administratively supported group. At the second stage, probability sampling techniques were applied: individual sample households were randomly selected from the 415-household roster to ensure representativeness and reduce selection bias.

This combination of purposive population delimitation and random household selection strengthens both the analytical focus and the statistical validity of the study. While the findings cannot be generalized to all displaced households across Addis Ababa without caution, they provide robust empirical insights into the livelihood dynamics of officially recognized displaced households in Lemmi Kura Sub-City.

3.7.1 Sampling Frame, Sample Size and Sample Selection

The study employed a multi-stage random sampling design to ensure representativeness while maintaining analytical comparability between treatment (displaced) and comparison (non-displaced) households. The sampling procedure was implemented in three sequential stages.

Stage One: Selection of Sample Woredas (Cluster Selection)

At the first stage, three administrative units, Woreda 2, Woreda 6, and Woreda 14, were purposively selected from the eight woredas constituting Lemmi Kura Sub-city under the Addis Ababa city administration.

The selection of these woredas was guided by the concentration and distribution of displaced/evicted households who are formally registered and receiving monthly financial assistance from the city administration. Specifically, these three woredas account for the largest share of the 415 officially recognized displaced households. The purposive selection at this stage ensured that the clusters included in the study captured areas most affected by urban expansion and displacement, thereby enhancing the analytical relevance of the research.

Stage Two: Random Selection of Treatment Households

In the second stage, a sampling frame was constructed using the official roster of 415 displaced households who are currently receiving monthly pension support from the city administration. From this list, 223 treatment households were selected using systematic random sampling.

Systematic random sampling involves selecting every n th household from an ordered list after determining a sampling interval (k), calculated as:

$$k=N/n$$

Where:

N = total number of displaced households (415)

n = required sample size (223)

After selecting a random starting point within the first interval, every k th household was chosen until the required sample size was achieved. In this case, every odd numbers starting from 1 to 415 were randomly chosen.

To ensure proportional representation, the total sample size (223 households) was allocated among Woreda 2, 6, and 14 proportionate to the size of displaced households in each woreda. This probability-proportional-to-size (PPS) allocation reduced sampling bias and ensured that larger clusters contributed proportionally more respondents than smaller ones.

This approach enhanced both statistical efficiency and internal validity by ensuring that each displaced household within the sampling frame had an equal and known probability of selection.

Stage Three: Selection of Comparison (Control) Households

To establish a valid counterfactual, a comparable group of non-displaced households was selected from Kura Jida Woreda, located within Sheger City, one of the closest administrative areas adjacent to Lemmi Kura Sub-City.

Kura Jida Woreda was chosen because:

- It is geographically proximate to Lemmi Kura.
- It shares similar agro-ecological, socio-economic, and demographic characteristics.
- It contains households that have not experienced displacement due to urban expansion.

From the official list of non-displaced households in Kura Jida Woreda, the same number of comparison households (223) was selected using systematic random sampling, following the same procedure applied to the treatment group. Maintaining

equal sample sizes across treatment and comparison groups enhances the power of statistical tests and facilitates balanced group comparisons.

Rationale for Multi-Stage Sampling Design

The use of a multi-stage sampling approach was methodologically appropriate for several reasons:

- Administrative practicality: It allowed the researcher to narrow the sampling frame systematically from sub-city to woreda to household level.
- Representativeness: Proportionate allocation ensured that each woreda's population size was accurately reflected in the final sample.
- Reduction of bias: Systematic random sampling minimized selection bias while maintaining randomness.
- Comparability: Selecting a geographically proximate control group enhanced the credibility of causal inference in assessing the impact of displacement.

Methodological Strength

By combining purposive cluster selection (for relevance) with probability-based household selection (for representativeness), the study achieved a balanced design that strengthens internal validity while maintaining reasonable external generalizability within similar peri-urban contexts.

This rigorous sampling framework ensures that the final dataset adequately represents both displaced (treatment) and non-displaced (comparison) households, thereby providing a robust basis for evaluating the livelihood impacts of urban expansion.

Determination of sample size:

The sample size for a known population can be determined using the following Taro

Yamane method or formula (Ahmed et al., 2021):

$$n = N / (1 + N (e)^2) \quad (1)$$

Where, n is the sample size.

N is the population under study.

e is the margin of error.

The sample size was calculated from the target population of 415 households that receive monthly subsistence or direct support from the City Government.

$$n = 415 / (1 + (415(0.05)^2))$$

$$n = 203.$$

The determination of the sample size for the first independent group (displaced households) was guided by standard statistical procedures for estimating proportions from a finite population. Given a total population (N) of 415 displaced households officially registered in the study area, the required sample size was calculated to achieve a 95 percent confidence level and a 5 percent margin of error.

Using conventional sample size determination formulas for finite populations, the minimum statistically required sample size was estimated at 203 households. To account for potential non-response, incomplete questionnaires, data recording errors, or attrition during fieldwork, a 10 percent contingency allowance was added. This adjustment increased the operational sample size to 223 households. The inclusion of a contingency buffer is a widely accepted methodological practice in survey research, particularly in field-based studies where logistical and respondent-related uncertainties may arise.

A sample of 223 households drawn from a population of 415 provides adequate statistical power to generate reliable estimates and ensures that sampling error

remains within the acceptable 5 percent threshold. This level of precision allows the study to make valid inferences about the broader population of displaced households in the selected woredas.

However, the research design extends beyond descriptive estimation. The study employs a comparative framework to examine differences in livelihood outcomes between displaced (treatment) households and non-displaced (comparison) households. In such quasi-experimental designs, maintaining balanced group sizes is methodologically advantageous. Equal or near-equal sample sizes across comparison groups enhance statistical efficiency, improve the power of hypothesis testing, and reduce the standard error of the estimated difference between group means or proportions.

Accordingly, an equivalent sample size of 223 non-displaced households was selected from the comparison group. This ensures symmetry in group representation and strengthens the validity of inferential analyses, including independent sample t-tests, regression modeling, and other comparative statistical techniques employed in the study.

As a result, the total sample size for the research amounts to:

$$223 \text{ (displaced households)} + 223 \text{ (non-displaced households)} = 446 \text{ households}$$

The overall sample of 446 households provides sufficient statistical power to detect meaningful differences in livelihood security indicators between treatment and comparison groups, while maintaining acceptable levels of precision and confidence. This balanced and adequately powered sample strengthens both the internal validity of the study and the robustness of its empirical findings.

Qualitative sample size determination:

To strengthen the credibility, dependability, and confirmability of evidence FGDs, the study stratified groups by sex (male/female) and assignment (treatment/control) and conducted 12 FGDs, enabling method and datasource triangulation to support overall trustworthiness (Lincoln & Guba, 1985). In qualitative inquiry, sample size is not determined by a fixed statistical formula; rather, it is guided by the research question and the attainment of thematic saturation (Isaacs, 2014). As a pragmatic rule of thumb, many methods texts suggest that approximately 12–26 participants can be adequate for qualitative studies, subject to saturation and study purpose (Isaacs, 2014; Kothari, 2004). Moreover, guidance specific to FGDs recommends conducting at least two groups per key characteristic to assess consistency of themes; given four defining strata (male/female × treatment/control), a minimum of eight groups would be advisable, and the study's threshold of ≥ 12 groups meets or exceeds empirical recommendations (Guest, Namey, & McKenna, 2017; Hennink, Kaiser, & Weber, 2019). More than 25 key informants (KI), who were purposefully chosen from both the displaced and non-displaced groups, participated in in-depth interviews as well. The 25-person sample size was considered adequate by the researcher to triangulate the qualitative and quantitative data that were gathered utilising various techniques. Subsequently, the data that was recorded was typewritten and entered into a computer. Subsequently, a narrative, descriptive and content analysis was performed on the qualitative data. An hour was all that each key informant interview lasted. In the FGD, only people who were at least eighteen years old were interviewed.

3.8 Data Collection

3.8.1 Household Survey

To generate reliable and comparable quantitative data from both treatment (displaced) and control (non-displaced) households, the study employed a structured household questionnaire as the principal data collection instrument. The questionnaire was designed to capture comprehensive information on demographic characteristics, socio-economic conditions, and key indicators associated with livelihood capital and livelihood outcomes. In line with the Sustainable Livelihoods analytical framework, the instrument included modules covering human, social, physical, financial, and natural capital, as well as income sources, asset ownership, coping strategies, and perceived well-being. The use of a structured format ensured uniformity in data collection across all respondents and enhanced comparability between the two study groups.

The questionnaire was initially developed in English and subsequently translated into Afan Oromo to facilitate clear communication and cultural appropriateness during interviews. Back-translation procedures were applied to ensure conceptual equivalence between the English and Afan Oromo versions. This process minimized linguistic distortion and enhanced measurement validity.

A total of ten experienced enumerators and two field supervisors were recruited for data collection. Prior to field deployment, a two-day intensive training was conducted in a classroom setting. The training covered the objectives of the study, detailed review of each questionnaire item, ethical considerations (including informed consent procedures), interviewing techniques, neutrality in questioning, and practical sessions using the digital data collection platform. Emphasis was placed on maintaining objectivity, minimizing interviewer bias, and ensuring confidentiality.

Following the training, the instrument was subjected to a pilot test involving 23 households. The pilot served multiple purposes: assessing clarity of questions, identifying ambiguous or culturally sensitive items, testing the logical flow of modules, and evaluating the functionality of the digital data collection system. Based on pilot findings, minor revisions were made, including rewording unclear questions, removing redundant items, and adding clarifying probes where necessary. These refinements enhanced both face and content validity.

To assess internal consistency and reliability of multi-item scales, Cronbach's Alpha reliability analysis was conducted. The resulting coefficient of 0.81 exceeded the commonly accepted threshold of 0.70, indicating satisfactory internal consistency among scale items. According to established statistical standards for reliability assessment, this value demonstrates that the instrument was sufficiently reliable for empirical analysis. No item scores required removal, as all items fell within the acceptable range of internal consistency.

Data were collected using Computer-Assisted Personal Interviewing (CAPI). Each questionnaire item was programmed into specialized data collection software developed by a programmer to ensure logical sequencing, skip patterns, and built-in validation checks. The use of CAPI minimized data entry errors, reduced missing values, and allowed real-time consistency checks. Enumerators conducted face-to-face interviews with household heads or eligible adult representatives. The study restricted participation to individuals aged 18 years and above to ensure informed consent and reliability of responses.

Field data collection was conducted between February 22 and April 15, 2024. Enumerators uploaded completed interviews daily to the central server. Continuous supervision was maintained throughout the data collection period. Field supervisors

conducted spot checks, back-checks, and daily review of submitted forms. The programmer further verified data integrity by examining time stamps, GPS coordinates (where applicable), logical consistency, and completeness. Any detected inconsistencies were communicated immediately to enumerators for field-level correction before progressing to subsequent clusters.

This systematic approach, combining structured questionnaires, rigorous training, pilot testing, reliability analysis, digital data capture, and multi-layered quality control, strengthened the accuracy, validity, and credibility of the quantitative dataset. The procedures ensured that the collected information reliably reflects the livelihood conditions of both displaced and non-displaced households within the study area.

3.8.2 Focus Group Discussions and Key Informant Interviews

The Woredas sample, which includes Woreda 2, 6, and 14 from Lammi Kura Sub-City, made up the focus group. To collect qualitative information from household heads belonging to the displaced and nondisplaced groups, distinct semi-structured questionnaires were created. At least four focus group discussions (FGDs) were conducted with adult males and females from both displaced and non-displaced groups in each sample, Woreda. It was determined that conducting 12 FGDs would be adequate to examine the qualitative data from the various categories of study population. A group of six to twelve people participated in each FGD. With the permission of the participants, the researcher used a tape recorder to capture the conversations.

During the FGDs, a tape recorder ensured that all important material was accurately recorded. Because it reduced the possibility of errors or omissions during notetaking, this approach was chosen over taking notes. The interviewer was able to concentrate

entirely on the talk using a tape recorder, as opposed to the additional burden of taking thorough notes, which is frequently time-consuming and distracting.

This method ensured that all pertinent information was documented for future use and that the interviews were comprehensive. The interviewer was able to focus and listen intently to the interviewees. As a result, the recording made it easier for the interviewer to review the content of the interviews after the fact. Similarly, during interviews, notes were recorded in a diary.

3.9 Statistical Models Specification

3.9.1 Sustainable Livelihood Security Index

As the data analysis chapter demonstrates, the second and third goals of the current study are to quantify the state of livelihood capitals and analyse the variations in the sustainable livelihood security parameters between the two research groups, respectively. The most important factors in each category of livelihood security that affect the total livelihood security of both displaced and non-displaced households were determined by the current study. The quantification modeling of all pertinent livelihood security criteria for each of the seven categories is displayed in the following phase.

To measure these two goals, the SLSI model was employed in the livelihood security assessment tool. The disparities in the sustainable livelihood security of displaced and non-displaced households were examined using the same livelihood assessment instrument. The SLSI was empirically proven to be an effective tool for assessing the livelihood security of rural communities in Gujarat, India, by Singh and Hiremalth (2010).

Similarly to this, Gwan (2017) examined the effects of urban growth on the standard of living using SLSI as a livelihood security assessment instrument. To determine a link

between urban expansion and farmers' lives, they examined farmers' income, assets, family size, farm sizes and types, and activities both before and after urban expansion. Indicator-based approaches such as the Sustainable Livelihood Security Index (SLSI) are widely used to profile household capitals (Singh & Hiremath, 2010). In a related vein, Udoh, Akpan, and Uko (2017) assessed the intensity of each livelihood capital among farming households using a composite index approach.

Using household survey data from the upper Minjiang River, China, Fang et al. (2014) applied logistic regression to examine how livelihood capitals (C_i) influence households' livelihood-strategy choice (Y), modelling the log-odds of strategy selection as a function of natural, human, physical, financial, and social capital indices. (Note: in logistic models the dependent variable is the strategy choice Y , while the capitals C_i are predictors.)

Fang et al. (2014) standardised every variable to measure the contribution of different capitals in livelihood strategies based on the following equation 2.

$$Z_i = (X_i - X) / S \quad (2)$$

Where x_i corresponds to the i^{th} measurement of the variable, x is the average value of x and S is the standard deviation. As a result, the livelihood capital C_i is written as shown on equation 3.

$$C_i = \sum W_i Z_i \quad (3)$$

Where C_i is the estimated value of the livelihood capital ($i = 1, 2, 3, 4, 5$), W_i indicates the weight of the i^{th} observation (i), and Z_i represents the normalized value for the i -th observation (i).

Gautam and Jha (2022) also created a SLSI based on various measures of farmers' livelihood security. A list of the seven elements was compiled. Food security, economic

security, ICT security, educational security, social security, institutional security, and infrastructure security were the seven components of livelihood security that were chosen for the study.

The following steps were used by Gautam and Jha (2022) to establish the livelihood security index as shown equation 4.

$$Z_{indj} = (\text{Indicator } j - \text{Min } j) / (\text{Max } j - \text{Min } j) \quad (4)$$

where Z_{indj} = standard indicator j ,

$\text{Max } j$ and $\text{Min } j$ = Maximum and minimum value of indicator j

Then, the 'Livelihood Security Index' for each indicator of the entire household was calculated by using the formula given on equation 5.

$$LS_j = \sum Z_{indj} / n \quad (5)$$

Where, LS_i = livelihood security for one indicator Z_{indj} = summated standardised score of all respondents for one indicator, n = number of households covered in the study.

Once the livelihood Security Index for one indicator is constructed, the composite overall "Livelihood Security Index (SLI)" is calculated by using the formula given on equation 6.

$$LSI = \sum W_i HLS_j / \sum W_i \quad (6)$$

Where, LSI = Composite Livelihood Security Index

HLS_i = Household Livelihood Security of j component

W_i = sum of weightage of all indicators.

The current study developed eight major components for livelihood security. These include economic security, social security, Human security, Physical asset security, Land security, Infrastructure security, ICT Security, and Food Security.

3.9.2 Binary logistic regression model

3.9.2.1 Justification for preferring Binary Logistic Regression Model

The researcher adopted binary logistic regression as it is often the preferred choice for modeling binary response variables due to its robustness, interpretability, and flexibility compared to alternative approaches.

One advantage of logistic regression is that its coefficients exponentiate directly to odds ratios, an effect-size measure that is straightforward to explain, unlike probit (whose coefficients do not map directly to odds ratios) or complementary log–log models, where exponentiated coefficients are typically interpreted as hazard ratios in discrete-time survival contexts (Hosmer, Lemeshow, & Sturdivant, 2013; Agresti, 2013; StataCorp, 2024; Allison, 1982).

Logistic regression is generally more robust to violations of multivariate normality and equal covariance assumptions than linear discriminant analysis (LDA). Classic comparisons show that when assumptions are met LDA can be slightly more efficient, but under nonnormality or mixed predictors logistic regression is preferred and remains reliable, whereas LDA performance can degrade markedly (Press & Wilson, 1978; Efron, 1975; Pohar, Blas, & Turk, 2004). Outliers can affect both methods, but logistic regression has well-developed diagnostics and robust estimation variants to mitigate influence (Pregibon, 1981; Bianco & Yohai, 1996).

3.9.2.1 Binary Logistic Regression Model Development

The research objectives require hypotheses testing of the impact of urban expansion and forced eviction on the livelihood security of peri-urban farming households. In this study, the following hypotheses were tested.

- a) There is a significant difference between the livelihood security of the evicted and non-evicted households in the study area.
- b) Urban expansion and forced evictions have significant impacts on the livelihood security of peri-urban farming households.
- c) Urban expansion and forced evictions have significant impacts on the economic security of peri-urban farming households.
- d) Urban expansion and forced evictions have significant impacts on the food security of peri-urban farming households.

The researcher employed the non-parametric Mann-Whitney U test for the comparisons of the two independent sample medians. Then, if the median SLSI of evicted minus the median SLSI of Non-Evicted $\neq 0$, the researcher rejects the null hypothesis that urban expansion and forced eviction significantly impact the livelihood security of peri-urban farming households. Actual analysis is presented in the data analysis chapter.

Table 3.1: Summary of the Sustainable Livelihood Security Index of the treatment and comparison research groups

Category	Evicted Households, Coded 1	Non-evicted Households, Coded 0
Sample Households	223	223
Economic Security Index (ESI)	X1	X21

Social Security Index (SSI)	X2	X22
Land Tenure security Index (LTSI)	X3	X23
Human Capital Security Index (HCSI)	X4	X24
Physical Assets Security Index (PASI)	X5	X25
Infrastructure Security Index (ISI)	X6	X26
ICT Capital. Security Index (ICT SI)	X7	X27
Food Security Index (FSI)	X8	X28
Median of the Sustainable Livelihood Security Index (SLSI)	X9	X29
Dependent Variable = Livelihood Secured =1 or not secured =0	X10	X30

The binary logistic model was used to analyse the sensitivity of livelihood security to livelihood capitals and the relationships between sustainable livelihood security and land expropriation/displacement and nondisplacement of farming households. The objectives of the current study were addressed using the binary logistics regression model. In the current study, the econometric model created by Tuyen, et al. (2014) was utilised in the current study to measure the different effects of farmland loss on the methods and results of household livelihood. Tuyen examined how and to what extent farmland loss has impacted rural Vietnamese households' means of subsistence using a number of regression models. In particular, three significant relationships were examined and evaluated:

1. The relationship between farmland loss and household livelihood strategies
2. The relationship between farmland loss and household livelihood outcomes (income and consumption expenditure).

3. The relationship between farmland loss and share of household income by source.

Using household survey data from the upper Minjiang River, China, Fang et al. (2014) applied logistic regression to examine how livelihood capitals (C_i) influence households' livelihood-strategy choice (Y), modelling the log-odds of strategy selection as a function of natural, human, physical, financial, and social capital indices.

The binary logistic regression model (Hosmer & Lemeshow, 2013) is obtained by applying the logistic distribution to a linear regression equation 7.

$$p = b_0 + \sum_{i=1}^m b_i C_i \quad (7)$$

P is the probability, b_0 is the constant, and b_i ($i = 1, 2, 3, m$) is the regression coefficient. In practice, the dependent variable (P) is not continuous. Therefore, we convert P into the probability ratio (Ω) of non-farm livelihood strategies. The logistic formula is stated on equation 8.

$$\ln(\Omega) = \ln\left(\frac{P}{1-P}\right) \quad (8)$$

where the \ln symbol refers to a natural logarithm and Ω is called logit (p). Then, we further obtain the following equation 9:

$$\text{logit}(p) = b_0 + \sum_{i=1}^m b_i C_i \quad (9)$$

Here $b_0 + \sum_{i=1}^m b_i C_i$ is our familiar equation for the regression line. P can also be computed from the regression equation. Therefore, if we know the regression

equation, we could theoretically calculate the expected probability for a given value of C_i . Equation 9 is transformed as shown on equation 10.

$$\Omega = \frac{p}{1-p} = \exp(b_0 + \sum_{i=1}^m b_i C_i) \quad (10)$$

Where \exp is the exponent function, opposite to the natural logarithm, we are interested in estimating the probability (for example nonfarm or farm strategy) because the value of C_i increased or decreased in one unit.

The derivative transformation of equation 11 is:

$$\Omega' = \exp\left(b_j + b_0 + \sum_{i=1}^m b_i C_i\right) = \Omega \exp(b_j) \quad (11)$$

Where $\exp(b_j)$ is the probability elasticity; it changes when C_i increases or decreases by one unit. Here, we define $\exp(b_j)$ as the sensitivity of livelihood strategies to livelihood capitals. The explanatory variable (C_i) includes natural, physical, human, financial, and social capital. Based on equation 11, we can calculate the $\exp(b_j)$ value. However, it should be noted that there is a positive relationship between livelihood capital and nonfarm livelihood strategies if the regression coefficient is positive. The probability of non-farm strategies increases by $\exp(b_j)$ times as the livelihood capital (C_i) increases by one unit.

Conversely, if the regression coefficient is negative, there is a negative association between livelihood capital and nonfarm livelihood strategies. For every unit increase in livelihood capital (C_i), the probability of agricultural livelihood strategies increases by $\exp(b_j)$. In this work, statistical analysis is carried out using SPSS 29.

Tora, Degaga, and Utallo (2022) employed a binary logistic regression model to test the hypothesis that household capital assets determine the livelihood security of lowland households. Consistent with best practice for dichotomous outcomes, the logit model was used because the dependent variable Y (household livelihood security status) had two categories (yes/no), while predictors X comprised both continuous and categorical measures (Hosmer, Lemeshow, & Sturdivant, 2013; Agresti, 2013). In this specification, the six capital assets, natural, human, physical, social, information, and financial, serve as multiple predictors of the odds that a household attains livelihood security (Tora et al., 2022; Pampel, 2000; Menard, 2010). Consequently, the multivariate binary logistic model (logit link) was specified for estimation and inference. Consequently, the model specification of the binary logistic regression with multivariate characteristics is presented on equation 12.

$$P(Y) = \frac{e^{b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n}}{1 + e^{b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n}} \quad (12)$$

where P is the probability of Y occurring e: natural logarithmic base b₀: interception at the y axis b₁: line gradient/slope b_n: regression coefficient of x_n x₁: predictor variable x₁ predicts the probability of Y. This can be shown in equations 13 and 14 with the logit function.

$$\ln \left(\frac{p}{1-p} \right) = a + b_1x_1 + b_2x_2 + \dots + b_nx_n \quad (13)$$

$$\text{Logit}(p) = a + b_1x_1 + b_2x_2 + \dots + b_nx_n \quad (14)$$

In which p is the probability that a case belongs to category 1, $p/1-p$: odds, a constant, n is the number of predictors and the regression coefficients. In the study setup, the independent variables (x) are the six livelihood assets accessed by the study households that predict the attainment instances of households' livelihood security. Consequently, the six livelihood assets (predictors) are described as x_1 = natural capital, x_2 = human capital, x_3 = physical capital, x_4 =social capital, x_5 = information capital and x_6 = financial capital. The values of b_1 to b_6 are the estimated parameters that are the individual coefficients of the explanatory variables x_1 to x_6 . The purpose was to examine the impacts of capital assets on households' livelihood security of households in the drought-prone Gamo lowland areas.

Coulibaly and Li (2020) used two models, namely, multiple linear regression and logistic regression models, to analyse their data. In both cases, multicollinearity was assessed using two collinearity statistics: the variance inflation factor (VIF) and tolerance values. The below multiple linear regression model equation 15 was used to determine how the socio-economic variables predicted the annual income of the farmers.

$$Y = \alpha + \beta_1x_1 + \beta_2x_2 + \dots + \beta_9x_9 + \varepsilon \quad (15)$$

Where Y indicates the respondent's income; x_1 , x_2 and x_3 represents age, the socioprofessional structure, and land size; x_4 means the level of education; x_5 indicates family size; x_6 indicates food problem; x_7 is the gender; x_8 denotes the family member in migration; x_9 stands for land registration. Furthermore, α denotes the constant, β_1 , β_2 ..., and β_9 indicate the respective coefficients of the independent variables, whereas ε is the error term in the model.

The logistic regression model, described in the below equation, was used to examine how various variables influenced the likelihood that farmers being victims of urbanisation as shown on equation 16.

$$\ln(PX / (1 - PX)) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} \quad (16)$$

The subscript i is the i th observation in the sample; PX is the probability that an event occurs for an observed set of variables X_{1i} ; PX is the probability that the household has livelihood security (secure livelihood) or not. B_0 is the intercept term, and $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients of the explanatory variables X_1, X_2, \dots, X_k .

The present researcher tried to link the outcome of the SLSI to a logistic regression model to analyse the data, which is the first econometric model to be used in the context of sustainable livelihood security in the peri-urban area. This research is one of the few studies that adopted the logistic regression model to analyse the impacts of urbanisation-induced displacement on the livelihoods of peri-urban communities.

Therefore, in the present study, the dependent variable on the livelihood security of the peri-urban households that are secured or not secured is estimated using logistic regression shown on equation 17.

$$\ln(PX / (1 - PX)) = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} \quad (17)$$

The subscript i is the i -th observation in the sample; PX is the probability that an event occurs for an observed set of variables X_{1i} ; PX is the probability that the farmer is a victim of urban expansion. B_0 is the intercept term, and $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients of the explanatory variables X_1, X_2, \dots, X_k .

Multicollinearity was assessed using the two collinearity statistics' variance inflation factor

(VIF) and tolerance values. Finally, the researcher analysed the data using SPSS version 29.

Table 3.2 shows the explanatory variables that influence the livelihood security of peri-urban farmers. The dependent variable is the probability that the farmer is displaced due to urban expansion.

Table 3.2 Variable labels and their expected effects

Independent Variables	Description of Variables	Expected effect
X1	Gender of the head of the household (TypeHH) 1= Male, 0= Female	+ve
X2	categorical age of the respondent (AgeRes) (age >=18= 1, < 18 =0)	+ve
X3	Family members engaged in continuous productive activities (income-generating activities) (FamSize) continuous	+ve
X4	Literacy rate of wives (LevEdu) (Literate =1, illiterate=0)	+ve
X5	Economic security(secured =1, Non-secured=0)	+ve
X6	Social security(secured =1, Non-secured=0)	+ve
X7	Land security (secured =1, Non-secured=0)	+ve
X8	Human resources security(secured =1, Non-secured=0)	+ve
X9	Physical resource security(secured =1, Non-secured=0)	+ve
X10	Infrastructural security (secured =1, Non-secured=0)	+ve
X11	ICT Security (secured =1, Non-secured=0)	+ve
X12	Food security (secured = 1, nonsecured = 0)	+ve
X13	Eviction(1), Non-eviction(0)	-ve

In	$(P_x/(1-P_x))$	P_x is the probability that the household's
Dependent		livelihood is secured = 1, otherwise=0
Variable		

Note: "+ve" and "-ve" denote positive and negative associations/ relationships, respectively.

Qualitative data analysis approach:

Qualitative data from twelve focus group discussions (FGDs) were analysed using a rigorous thematic analysis approach. The researcher first undertook immersion and familiarisation by repeatedly and carefully reading all transcripts to develop a holistic understanding of the dataset. Systematic coding then followed, beginning with the generation of initial codes through the identification and labelling of salient statements, concepts, patterns, and recurring issues relevant to the study's research questions. Coding was conducted line-by-line for a subset of transcripts and subsequently applied more broadly across the remaining materials. Next, related codes were clustered into candidate themes and sub-themes, which were iteratively reviewed and refined through comparison and contrast across all twelve FGDs to identify convergent and divergent patterns and to ensure a comprehensive synthesis. The themes and sub-themes were then defined and named by developing clear operational definitions and concise, evocative labels. Finally, an interpretive synthesis was produced and reported by integrating the thematic findings into a coherent narrative, supported by direct participant quotations drawn from the FGDs to illustrate and substantiate the synthesised experiences, while emphasising shared patterns and noting any site-specific nuances.

3.9.3 Hypotheses Tested

The researcher calculated the p-values for all the independent variables. Based on the p-values for each independent variable, the researcher accepted or rejected the null hypothesis, which states that there is no relationship between the various components

of livelihood security (economic, social, human, land, physical capital and infrastructural service, ICT, and food security) and sustainable livelihood security in the context of urban expansion-induced eviction. The eviction/non-eviction variable was also included in the model to evaluate the impact of eviction on sustainable livelihood security. The negative sign of the β value of the variable would indicate that there is an inverse relationship between sustainable livelihoods and eviction. The lesser odds ratio of the variable would indicate that the evicted households have less sustainable livelihood security than the nonevicted households.

Similarly, the researcher calculated the p-values for all the economic variables. Based on the p-values of the economic variables, the researcher accepted or rejected the null hypothesis that urban expansion and forced evictions have no significant impact on income and economic variables.

Finally, the researcher calculated the p values for all the food security variables. Based on the p-values for food security variables, the researcher accepted or rejected the null hypothesis that urban expansion and forced evictions have no significant effect on the food security of peri-urban farmers.

3.10 Validity and Reliability in Quantitative Research

Ideas about validity and reliability originated in the natural sciences and psychometrics and were later adapted to the social sciences, including quantitative and qualitative traditions (Yazan, 2015; Messick, 1995). In quantitative research, reliability concerns the consistency of measurement (for example, internal consistency, test–retest, inter-rater), whereas validity addresses the warrant for the inferences drawn from scores, commonly organised as construct, internal, external, and statistical-conclusion validity (Shadish, Cook, & Campbell, 2002; Heale &

Twycross, 2015). External validity refers to the generalizability of findings across populations, settings, and times. Internal validity concerns whether a study's design supports causal interpretation by ruling out rival explanations (for example, selection, maturation, history), rather than the representativeness of the sample per se (Shadish et al., 2002). In qualitative research, parallel quality criteria are framed as trustworthiness, credibility, transferability, dependability, and confirmability, supported by triangulation, audit trails, thick description, and reflexivity (Lincoln & Guba, 1985).

3.10.1 Research Validity

Validity concerns the degree to which evidence and theory support the interpretations of measures for their intended uses (that is, the warrant for inference) (Messick, 1995). In this study, the researcher pursued impartial interpretation of qualitative materials (for example, triangulating interview/FGD narratives with available records) to minimise bias and ensure that findings faithfully reflected the phenomenon in context (Lincoln & Guba, 1985).

Empirically, validity was examined through factor analytic and correlational techniques for quantitative measures, complemented by triangulation and audit trails for qualitative strands (Lincoln & Guba, 1985).

These procedures collectively address whether the study's measures (a) represent their constructs, (b) behave as theory anticipates with external criteria, and (c) distinguish target constructs from related but non-identical ones, thereby enabling independent verification and confirmability of conclusions.

3.10.2 Research Reliability

Reliability is the extent to which a measure is free of random error and yields consistent scores across administrations, items, and raters (Schindler, 2021; Nunnally

& Bernstein, 1994). In quantitative research, three common strategies assess reliability: test–retest (temporal stability), split-half (internal consistency across parallel halves), and Cronbach’s alpha (internal consistency across all items) (Chua, 2020; Tavakol & Dennick, 2011). Given time and resource constraints, this study emphasised Cronbach’s alpha to evaluate internal consistency of multi-item scales. Following conventional guidance, $\alpha \geq 0.70$ was treated as acceptable, ≥ 0.80 good, and ≥ 0.90 excellent; values > 0.95 may indicate item redundancy (Nunnally & Bernstein, 1994; Tavakol & Dennick, 2011). Instruments used 5point Likert-type items consistent with standard survey practice (Sekaran & Bougie, 2016).

Evidence for instrument reliability was also drawn from prior studies. The Vannsimpco Leadership Survey demonstrated strong test–retest reliability ($r = 0.91$, $p < 0.001$) in a pilot with diverse leaders (Vann et al., 2014). The Technology Acceptance Model (TAM) scales likewise show robust internal consistency: studies report $\alpha \geq 0.70$ for perceived usefulness and perceived ease of use (Lease, 2005), with recent estimates of $\alpha = 0.84$ and $\alpha = 0.89$, respectively (Zarafshani et al., 2020). These precedents, together with the present study’s alpha diagnostics, support the dependability of the measures employed.

3.11 Trustworthiness in qualitative research

Qualitative studies are sometimes criticised for lacking rigour; without explicit quality procedures, “research loses its utility and becomes fiction” (Morse, Barrett, Mayan, Olson, & Spiers, 2002, Golafshani, 2003). Following Guba and Lincoln’s (1985) framework, rigour is established through credibility, transferability, dependability, and confirmability, which parallel internal validity, external validity, reliability, and objectivity in quantitative traditions.

Credibility (truth value) was strengthened via method and data-source triangulation (for example, interviews, FGDs, documents), member checking of case descriptions, and prolonged engagement with the data, ensuring that interpretations reflect participants' accounts and contextual realities (Guba & Lincoln, 1985; Morse et al., 2002; Yin, 2014).

Transferability was addressed by providing thick description and by using a multiple-case design that enabled cross-case pattern matching and assessment of theoretical replication, rather than statistical generalisation (Eisenhardt, 1989; Yin, 2014). Evidence of saturation—no emergence of substantially new categories, also supported claims of transferability across similar contexts (Guest, Bunce, & Johnson, 2006).

Dependability was promoted through a case study protocol and an audit trail (data management procedures, codebooks, memos), facilitating procedural transparency and potential study replication in comparable settings (Guba & Lincoln, 1985; Yin, 2014).

Confirmability (analytic neutrality) was supported by reflexive journaling, memoing, and documentation of analytic decisions, recognising that qualitative inquiry cannot be valuefree but can make researcher positionality explicit (Ponterotto, 2005; Guba & Lincoln, 1985). Together, these strategies meet established criteria for qualitative rigour and render the findings open to independent scrutiny.

3.12 Integration of Quantitative and Qualitative Data

This study integrated quantitative results with qualitative evidence from twelve FGDs to develop coherent, policy-relevant inferences about peri-urban Addis Ababa livelihoods and eviction impacts, while the precise integration timing and some variable/theme labels remain unspecified.

The study is situated in peri-urban Addis Ababa and its surrounding areas in Ethiopia, focusing on farmers' livelihood conditions and the effects of urbanisation-induced household eviction on composite sustainable livelihood security across multiple capitals (economic; land/natural; human; social; physical; financial). The results and findings are explicitly stated to be derived from the quantitative and qualitative data analysed in Chapter 4, and these findings address the study's research objectives and questions.

Two empirically distinct but substantively linked strands underpin the study: (i) quantitative results presented in Chapter 4, and (ii) qualitative data from 12 FGDs analysed using a thematic analysis approach (immersion and familiarization, systematic coding, theme generation/refinement, defining and naming themes, and interpretive synthesis supported by participant quotations). Integration in mixed methods research is generally understood as the intentional "interaction" between strands so that the combined knowledge yield is greater than treating strands as separate, parallel products (O'Cathain et al., 2010; Fetters et al., 2013).

Integration was organized around the study's three objectives: identifying factors influencing peri-urban farmer livelihoods; examining the level and importance of eviction impacts on composite sustainable livelihood security across capitals; and analysing the relationship between eviction and sustainable livelihood assets of displaced households. Mixed methods literature recommends making the objective-to-strand link explicit, because integration is strengthened when both datasets are intentionally brought to bear on the same analytic targets (Fetters et al., 2013).

Quantitative and qualitative analyses were conducted as analytically distinct processes within Chapter 4, producing (a) quantitative findings and (b) thematic qualitative

findings from 12 FGDs. This separation-then-integration logic is consistent with core mixed methods practices in which each strand is analysed with methods appropriate to its data type prior to explicit merging at interpretation/reporting (Fetters et al., 2013).

Integration was then performed at the interpretation and reporting level by aligning qualitative themes with the quantitative findings relevant to each objective. At this level, mixed methods guidance identifies three common mechanisms of integration: integration through narrative (example, “weaving” qualitative and quantitative results together by concept), integration through data transformation (quantitising or qualitisng), and integration through joint displays (structured tables/figures linking strands) (Fetters et al., 2013). Based on the information provided, integration through narrative synthesis is directly supported (because qualitative findings are described as reported through a coherent narrative with quotations, and results/findings are said to be derived from both data types in Chapter 4), whereas the use of data transformation and formal joint displays is unspecified and should not be claimed unless documented.

Where coherence between strands was assessed, mixed methods literature characterizes this as evaluating the “fit” of integrated findings, that is, the extent to which qualitative and quantitative results converge, complement one another, or diverge in informative ways (Fetters et al., 2013). The study’s integrated conclusions, used to support the proposed policy framework for improving peri-urban farming community livelihoods, constitute overall mixed-methods inferences; in mixed methods terminology, such overarching conclusions are often described as “meta-

inferences,” although the explicit use of that term in the thesis is unspecified (Tashakkori & Teddlie, 2010).

3.13 Research Ethics

Ethical considerations, including informed consent (explaining purpose, use of data, anonymity, and right to withdraw), confidentiality, and measures to minimize potential distress, were paramount throughout the research process. Ethical approval was obtained from CAES Ethics committee of UNISA with NHREC Registration #: REC-170616-051, Ref #: 2024/CAES_HREC/2693, dated 1/02/2024.

Research ethics require respect for persons, beneficence, and justice, ensuring that knowledge is never pursued “at any cost,” and that participants’ rights are protected throughout (National Commission, 1979; Saunders, Lewis, & Thornhill, 2019). In this study, three principles were operationalised most directly:

Informed consent and voluntary participation. Participants received a clear statement of aims, procedures, risks/benefits, data uses, and their right to withdraw without penalty; written consent was secured for interviews and implied/explicit consent for surveys, consistent with international guidance (National Commission, 1979; Saunders et al., 2019).

Confidentiality and anonymity. Identifiers were removed or masked; only aggregated findings are reported. Access-controlled storage and de-identification procedures were used to minimise re-identification risk (Saunders et al., 2019).

Researcher independence and integrity. The researcher disclosed any potential conflicts of interest, maintained professional detachment, and practised reflexivity to reduce undue influence on data collection/interpretation (Saunders et al., 2019).

Additional safeguards: prior-permission and proper attribution for any borrowed items; strict avoidance of plagiarism; no financial or other inducements; minimisation of physical/psychological risk; transparent data management (secure archiving for a defined period); and prohibitions against fabrication or falsification, with accuracy ensured through audit trails and triangulation to support trustworthiness.

Together, these measures align with established ethical frameworks and ensure that the study is conducted with rigor and respect for participants' rights and welfare (National Commission, 1979).

3.14 Chapter Summary

The researcher employed diverse statistical techniques to explicate the correlation between the specified variable and the qualitative data, including content, narrative, and descriptive analysis. A number of statistical analyses were conducted for this, beginning with the data collection procedure and continuing through the survey design development, sample size analysis, preliminary data and distillation analysis, data cleaning, descriptive analysis, and normalcy analysis. Should important assumptions not be met, the data was to be assessed for analysis using multiple regression or nonparametric tests. The investigator came to the conclusion that the mixed method of quantitative and qualitative research design might be fulfilled by employing a nonparametric test, specifically the Mann-Whitney U test.

To comprehend the rationale behind the study's mixed-methods, quantitative and qualitative-research strategy, this chapter addressed research concepts. Subsequently, a comprehensive synopsis of both the primary quantitative and qualitative methodological techniques is presented, educating readers and reviewers on the study's objectives and the methodology used to collect and prepare the thesis data for analysis and subsequent research responses and conclusions. In-depth

discussion of the study's nature, a case study, is also included to give readers a comprehensive understanding of this research framework (Saunders, et al. 2009).

The study employed logistic regression and a composite index model for the quantitative data analysis. Thematic analysis was also used to interpret interview and FGD data.

Accordingly, Chapter 3 outlined the methodological foundations of the study. It examined the overall research process, methodological orientation, underlying research philosophy, research strategy, and key methodological decisions. The chapter further described the study population, clarified the research objectives and approaches adopted, and explained the integration of qualitative and quantitative research designs.

In addition, detailed accounts were provided of the primary and secondary data collection methods and the procedures used for data analysis. The chapter also addressed issues of validity and reliability, outlining the measures taken to ensure the credibility, consistency, and robustness of the research findings.

Having established the methodological framework of the study in Chapter 3, including the research design, data collection procedures, analytical techniques, and measures to ensure validity and reliability, the discussion now turns to the empirical results. Chapter 4 presents and interprets the findings derived from the field data, linking them directly to the research objectives and examining the implications of urban expansion and displacement on the livelihood security of peri-urban farming households.

CHAPTER FOUR: RESULTS AND INTERPRETATION OF THE FINDINGS

4.1 Introduction

This chapter presents the empirical findings of the study and provides a comprehensive interpretation of the results in line with the stated research objectives. The central aim of the study was to examine the effects of urban expansion on the livelihoods of farming households residing in the peri-urban areas of Addis Ababa and its surrounding villages. Drawing on the data collected through field surveys and complementary analytical tools, the chapter systematically evaluates how processes of urban growth and associated displacement influence livelihood outcomes among affected communities.

The analysis focuses on identifying the key determinants shaping the livelihood conditions of peri-urban farming households and assessing the magnitude and statistical significance of urbanisation-induced displacement on the five pillars of the Sustainable Livelihood Framework: human, financial, social, natural, and physical capital. Particular attention is given to understanding how the loss or transformation of agricultural land and related assets alters household livelihood strategies and overall livelihood security.

In addition, the chapter explores the relationship between displacement and changes in sustainable livelihood assets, examining whether and to what extent urban expansion undermines or reshapes households' access to critical capital resources. The findings are synthesised to inform the development of a conceptual framework that explains the interaction between urban expansion and livelihood sustainability among farming communities in the peri-urban interface of Addis Ababa.

4.2 Demographic Characteristics of the Respondents

4.2.1 Gender of the Respondents

The total data set of the sample comprised 446 households. Of these, 128.3% were female headed 71.7% were male headed households. Of the 223 non-evicted category of households, 9.0% were female headed, while 41.0% were male headed. Among the 223 evicted households, 19.3% were females, and 30.7% were males.

Table 4.1 Gender of the respondents

Eviction Status	Gender of the head of the household		Total
	Female	Male	
Non-Evicted HH	40 (9%)	183 (41%)	223
Evicted HH	86 (19.3%)	137 (30.7%)	223
Total	126	320	446
Percent of the total	28.30	71.70	100.00

Source: Own survey (2024)

The results further show that female-headed households are disproportionately represented among the evicted households, that is, constituting about 19.3% of the total households notwithstanding the fact that they only accounted for 9.0% of non-evicted households. On the other hand, the male-headed households, although more prevalent in overall, reflect a lower eviction rate relative to their total representation 30.7% of the evicted as compared to the 41.0% non-evicted households.

4.2. 2 Ages of the Respondents

The age of the respondents is categorised as productive and non-productive, as shown in Table 4.2. Respondents are classified as being in the 'productive age' (between 18 and 60 years) and 'non-productive age' (above 60 years), which is also considered old age.

Of the total sample of 446 households (HHs), 29.4% were older than 60 years and 70.6% were between 18 and 60 years old, constituting the productive age group. Within the non-evicted category of households, totalling 223 HHs, 10.1% of these were age categories older than 60 years. The remaining 39.9% were within the productive age group between 18 and 60 years.

Table 4.2: Age of the respondent

Eviction Status	Age of the Respondent		Total
	Old and unproductive age over 60 years	Productive age 18-60 years	
Non-Evicted HH	45 (10.1%)	178 (39.9%)	223
HH evicted	86 (19.3%)	137 (30.7%)	223
Total	131	315	446
Percent of the total	29.4	70.6	100

Source: Own survey (2024)

On the other hand, of the 223 categories of evicted households, 19.3% were over 60 years old, while 30.7% were between 18 and 60 years of age of the productive age category. The results further show that the old category (above 60 years) was substantially over-represented among the evicted households. It is also noted that

the productive age group that is, 18 to 60 years constitutes the greater proportion in both categories—nonevicted (39.9%) and the evicted (30.7%) of the households. This reflects a relatively lower vulnerability to eviction compared to the old category.

4.2.3 Family Size

The categories the households into small families (1-4 members) and large families (5 or more members) are shown on Table 4.3. Small families (1-4 members) constituted 42.8% of the total households, while large families (above 4 members) constituted 57.2%.

Table 4.3 Family size

Status Eviction		Large family	Small family	Total
		with >4 family members	with 1-4 family members	
Non-Evicted HH		135 (30.3%)	88 (19.7%)	223
Evicted HH		120 (26.9%)	103 (23.1%)	223
Total	Count	255	191	446
	% of the total	57.2%	42.8%	100.0%

Source: Own survey (2024)

Large families are more prevalent overall but show a slightly lower eviction rate (26.9%) compared to their non-evicted counterparts (30.3%). Small families, while less prevalent overall, exhibit a higher proportion among the evicted households (23.1%) compared to the non-evicted households (19.7%).

4.3. Expropriated Land Size

The surveyed households lost both farm and residential lands during the period from 2000 to 2018. The land was expropriated for various purposes such as real estate development, government housing projects, and infrastructural developments.

Table 4.4 presents the average expropriated land in two categories: total farmland in hectares (Ha) and residential area in square meters (m²). The data is from a survey conducted in 2024 and comprises 446 observations.

Table 4.4: Land expropriated at household level

Land Type	No. of HH	Mean	Std. Deviation
Total farmland expropriated in (Ha)	223	1.34	2.19
Residential area expropriated in (m ²)	223	183.56	470.71

Source: Own survey (2024).

As shown in Table 4.4, the mean value of the total expropriated farmland is 1.34 Ha. This indicates that, on average, approximately 1.34 Ha of farmland were expropriated per household. The standard deviation is 2.19 Ha, which suggests a high variability in the amount of farmland expropriated. The large standard deviation relative to the mean indicates that the amounts of expropriation varied significantly between the evicted households.

Similarly, the mean value for the expropriated residential area is 183.56 m². This average figure indicates that around 184 m² of residential land were expropriated per

evicted household. The standard deviation of 470.71 m² is even more substantial compared to the mean, highlighting an extremely wide range in the amount of expropriated residential land. This high standard deviation indicates that, while some residential plots may have been relatively small, others were significantly larger, resulting in considerable data dispersion.

The data reflect substantial variability in land expropriation, both in terms of farmland and residential areas. This variability can be attributed to several factors, including the differing size of landholdings, and the purpose for which the land is expropriated.

4.4 Factors Influencing Sustainable Livelihood Security

Research Question One: What are the factors that influence the sustainable livelihood security of the farming communities that live in urbanisation-induced displacement communities and the nondisplaced communities?

The peri urban farmers currently living in Lemmi Kura sub-city of Addis Ababa, were forcibly evicted from their farmland and grazing land during the Ethiopian People Revolutionary Democratic Front (EPRDF) government administration, particularly from 2000-2018, without any prior agreement or arrangement for their relocation. This led to severe consequences, including loss of livelihood, food insecurity, and deterioration of their living standards, as they were forced to purchase everything from the market like urban residents.

The qualitative data obtained from the evicted households highlight the multifaceted and severe consequences of forced eviction in the peri-urban farming communities. The following themes analysed from the qualitative data illustrate the factors that influenced the sustainable livelihood security of the evicted households.

i. Loss of Agricultural Land

Across all sites, participants described state-led, coercive land acquisition marked by minimal consultation and opacity. Prolonged uncertainty preceded demolition and expropriation. Typical accounts included "They came with papers and police; we had no choice but to watch our homes demolished" (Gari Tera), and "Decisions were made far away, by people who don't know our lives" (Dage). The land taken, cropland, pasture, and forage, was foundational to household survival. Evictees described profound power asymmetries and intimidation, with little recourse to responsive grievance mechanisms.

The loss of agricultural land directly and inexorably led to chronic and severe food insecurity, a stark transformation from previous self-sufficiency or food security reported across all twelve communities. Prior to eviction, communities were largely food self-sufficient. Afterwards, they struggled profoundly: "Our families have experienced hardship and hunger" (P3-FGD12, Q4). This statement was a common refrain in discussions across all Woredas. "Our means of subsistence have declined since we were uprooted from our land. Because of the severe difficulties... farming income has decreased" (P6-FGD12, Q21.i), directly impacting food purchasing power and availability. Participants in Dage (FGD4) and Chorso (FGD3) detailed the shift from diverse diets based on their own produce to monotonous, insufficient purchased food.

The loss of agricultural land and assets, inadequate compensation, the disruption of livelihoods and social networks, and the challenges in accessing basic services have led to a significant deterioration in their living standards and overall well-being. The experiences of the participants underscore the need for robust and equitable land tenure policies, effective compensation and resettlement programmes, and

comprehensive support mechanisms to address the complex impacts of urban expansion on vulnerable Peri-urban communities.

ii. Inadequate compensation for loss of land

Compensation was universally criticized as derisory, delayed, and non-transparent. Reported rates (for example, 3.75–58 birr/m² in Beke 2) were viewed as far below replacement cost and quickly consumed for subsistence. Monetary compensation was universally described as meager and insufficient to replace lost assets or secure alternative livelihoods. The reported rates in Beke 2, "The price per square meter varies from 3.75 to 58 Birr" (P4-FGD12, Q12), were considered insultingly low, a view shared by participants in Dage (FGD4) and Chorso (FGD3) who cited similar, if not identical, figures. The money was often quickly consumed for basic needs: "grain and consumed it as compensation" (P6-FGD12, Q13), a pattern reported across all sites, indicating the failure of compensation to facilitate any form of investment or recovery.

The evictees received inadequate compensation for their lost land and assets, and the government's promises of long-term support were not fulfilled. This has led to a miserable living situation, with no satisfaction and a deterioration of their standard of living. The livelihoods of the evictees depended heavily on their agricultural land and the rearing of livestock. The loss of this land has led to the cessation of their primary source of income, forcing them into inferior daily labour jobs. Participants lack the skills and experience to engage in non-agricultural activities, making it challenging for them to adapt to the urban economic landscape.

iii. Lack of strong and enforceable land tenure and rights

FGD participants consistently felt their long-held usufructuary rights to land were dismissed. "Practically speaking, though, this ownership was denied as urbanisation increased because farmers had no say over their land" (P1-FGD8, Q41). This sentiment

from Gadara was echoed in Gari Tera (FGD1, FGD2, FGD9) and Sefera (FGD10). The government was widely perceived as making arbitrary choices: "this land grabbing is the result of a choice made by the government" (P8-FGD12, Q16), a perspective shared across all sites.

The evictees highlighted the discrepancy between the stated land ownership in the constitution of Ethiopia, which recognises the land as the common property of the government and the people, and the practical reality in which their land rights were denied during the urban expansion process. The lack of a strong and enforceable land tenure policy has left participants vulnerable to land grabs by powerful entities, facilitated by institutional weaknesses and corruption.

iv. Disruption of Social Networks and Support Systems

The social networks and support systems of the evicted households have been disrupted due to forced eviction. Although they maintain some level of community-based support through traditional structures like "Afosha," the strength and effectiveness of these networks have weakened. The displacement has led to the separation of families and friends, with some community members whereabouts unknown, undermining the social cohesion and resilience of the affected communities. The government's promises of providing job opportunities for displaced people were not fulfilled. The evictees, especially the youth, lack access to training and support to develop new skills and create employment or business opportunities, leaving them vulnerable and unable to secure their livelihoods.

The social fabric of these communities, while showing elements of resilience, was severely damaged by displacement and its consequences. Eviction led to families being "dispersed" (P3-FGD12, Q4), a phenomenon reported with great sorrow in

Aboye (FGD6) and Gadara (FGD7). Community networks and traditional support systems like Iddir and Afosha, while still valued and attempted, were significantly weakened by physical scattering, economic hardship, and the overwhelming stress of individual household survival.

The trauma of displacement was acute and widely reported across all twelve FGDs. "Our lives were turned upside down; we sold our livestock, lost our land, and some of us were sick from our wrath" (P3-FGD12, Q4). The explicit mention of "some attempted suicide so they wouldn't have to witness what was happening to their relatives" (P3-FGD12, Q4) in Beke 2, while extreme, pointed to the severe psychological distress, including rage, stress, anxiety, depression, and hopelessness, that participants across all sites articulated. The feeling of being "left to live in the streets or under the control of strangers while we wait for assistance" (P1-FGD12, Q10) encapsulated the pervasive sense of abandonment and despair found in Gari Tera (FGD1, FGD2, FGD9), Dage (FGD4), and Sefera (FGD10).

v. Cultural practices, traditions, and social identity

Despite the disruption caused by forced eviction, the evictees have been able to maintain their cultural practices, traditions, and social identity to a significant extent. The continued proximity and cohesion of the evicted community have helped to preserve their cultural heritage. However, evicted persons express concerns about the possible erosion of their cultural identity in the face of urban expansion and interaction with other cultural influences.

The loss of ancestral land was inextricably linked to the erosion of cultural heritage, practices, and communal identity across all communities. While communities strived to maintain their culture ("Agriculture has long been a part of our culture and upbringing," P6-FGD12, Q15), and its loss meant more than economic ruin, the

pressures of displacement, urban integration, and economic hardship posed significant threats. Concerns were raised in Gadara (FGD8) and Aboye (FGD6) about the intergenerational transmission of cultural knowledge and local languages (primarily Afan Oromo in these areas) being undermined.

The loss of farmland inherently meant the loss of specific sites tied to ancestral connections, traditional rituals, and community gatherings, a point lamented in Burkaa (FGD5) and Bake 1 (FGD11).

vi. Access to Basic Infrastructure and Services

The evictees have access to basic infrastructure and services, such as healthcare, education, and transportation, in their new location. However, they face challenges related to the quality and reliability of these services, including issues with healthcare, water supply, and road infrastructure. The disruption and inadequacy of these essential services have a significant impact on the overall well-being and livelihood security of the displaced communities.

While physical proximity to some services like schools and health facilities might have occasionally improved for some households not completely relocated, this was consistently overshadowed by severe concerns about the quality, actual accessibility, affordability, and adequacy of these services. This nuanced finding was present across most sites.

Participants in Gadara (FGD8) and Sefera (FGD10) acknowledged that schools or health posts might be physically closer. However, this was almost invariably followed by strong condemnations of the quality of education ("teachers are not good," "no books" - P5-FGD8, Q74) or healthcare ("no medicine," "long queues" - P7-FGD8, Q75). Affordability also became a new barrier for previously self-sufficient households.

Even in areas where some evictees were resettled or remained, access to clean and reliable water, sanitation, waste disposal infrastructure, and consistent electricity supply were frequently cited as inadequate or absent. Participants in Beke 2 (FGD12), Dage (FGD4), and Gari Tera (FGD1) specifically noted the inadequacy of water and other basic supplies (P4-FGD8, Q78, referencing similar sentiment across sites).

4.5 Comparative Analysis of Sustainable Livelihood Security of Evicted and Non-evicted Households

This section addresses the quantitative aspect of the study with respect to study research question 2. The section compares the sustainable livelihood security of the evicted and non-evicted households in the Peri urban area of Lemmi Kura sub city of Addis Ababa and Kura Jidda of Sheger city. The analysis explores whether forced eviction creates differences in SLS of the evicted and non-evicted households. Taking into account all precautions related to similarities in the two independent sample groups, the quantitative data collected using a questionnaire were analysed using SPSS version 29.

Forced evictions, often carried out in the name of urban development and modernisation, have devastating consequences for displaced individuals and communities. This section presents the results of the study with respect to Woreda 14, Woreda 2, and Woreda 6 of the Lemmi Kura Sub city of Addis Ababa, and Lemmi Kura Woreda of Sheger city in Oromia, Ethiopia, examining the experiences of evicted farmers and the long-term impacts of forced eviction on their livelihoods, economic stability, and overall well-being. Figure 4.1 provides a stark illustration of the human and economic costs of forced evictions and underscores the need for a fundamental

rethinking of urban development policies that prioritise the rights and well-being of existing communities.

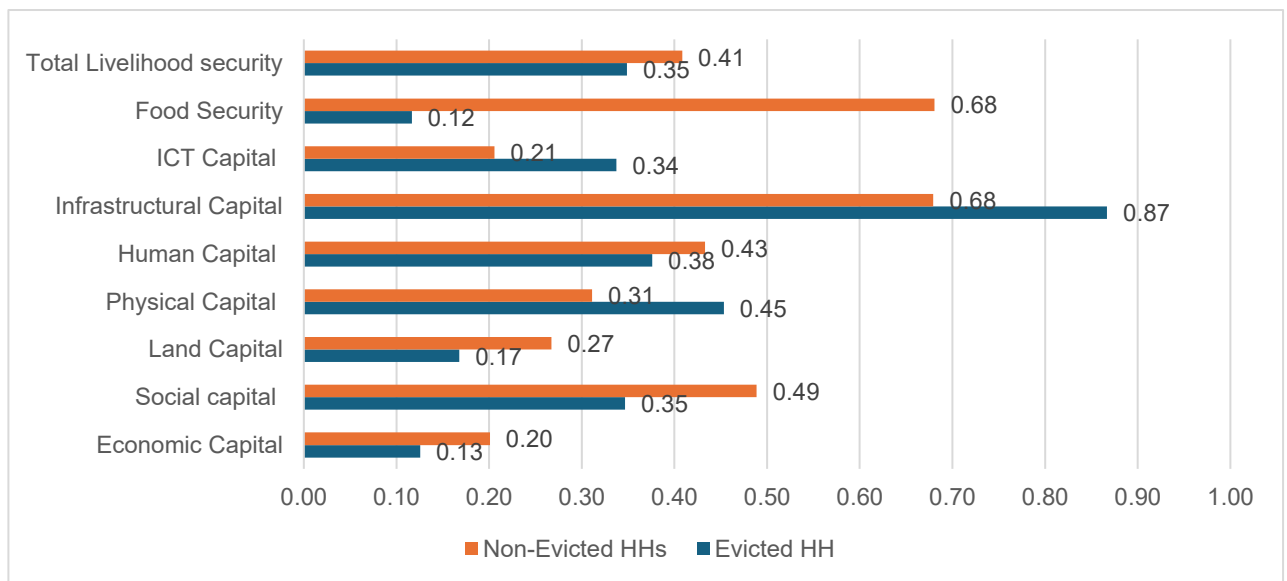


Figure 4.1: Sustainable livelihood security of evicted and non-evicted households

Source: Own survey (2024)

As shown in Figure 4.1 above, the non-evicted households have higher indexes than the evicted households in terms of SLS (0.41), economic (0.20), social (0.49), land (0.27), and human capital security (0.43), and Food security (0.68). On the other hand, evicted households have better indexes than non-evicted households in terms of access to public services infrastructures (0.87), ICT (0.34), and physical capital (0.45) such as houses.

As shown in Annex 1, the Mann-Whitney U test revealed a significant difference in Sustainable Livelihood Security (SLS) medians between evicted (Median = 0.3339) and non-evicted households (Median = 0.4275), $U = 16180$, $z = 6.381$, $p = 0.000$, $r = 0.3021$. This shows that the median SLS for evicted households of 0.3339 is lower than the median SLS for non-evicted households of 0.4275. These results show a

statistically significant p -value, implying that the two medians of the SLS are not equal. This means there is a statistically significant difference between the medians of the evicted and non-evicted households. Therefore, the researcher has strong evidence to reject the null hypothesis.

The researcher applied the effect size formula to determine the level of effect. The effect size (r) formula of $\text{Effect size}(r) = z/\sqrt{n}$ is calculated as 0.3021 ($z = 6.381$, $n=446$, square root (SQRT) of $446 = 21.1187$, $r=6.381/21.1187=0.3021$), which reflects the medium level of effect.

The results indicate that evicted households have significantly lower SLS compared to non-evicted households. This suggests that eviction disrupts the livelihood security of affected households. The medium effect size highlights the substantial nature of this disruption. These results are consistent with previous research showing that eviction leads to livelihood instability, financial pressure, and decreased well-being.

Evictions began in 2000 in Ethiopia, with land primarily expropriated for condo and real estate development. The loss of agricultural land, pastureland and access to quarry areas has had far-reaching consequences. A participant in this study poignantly described eviction as a process that "upended" their lives, forcing the sale of livestock and leading to extreme poverty (FGD3). The displacement resulted in the scattering of families, loss of income and livelihood, and significant psychological distress. These findings are consistent with research in other contexts, such as Lagos, Nigeria, where forced evictions have been shown to significantly disrupt the socioeconomic livelihoods of the urban poor (Roberts & Okanya, 2022). The long-term impacts of this displacement can be seen in the erosion of community networks, cultural heritage, and the transmission of traditional knowledge and skills from generation to generation.

4.6 Impact of Urban Expansion and Forced Eviction on Sustainable Livelihood Security

4.6.1 Quantitative Impact of Forced Eviction on Sustainable Livelihood Security

This section addresses the research question of investigating the level and significance of the impact of urbanisation-induced displacement on sustainable livelihood security. Sustainable livelihood approaches have become increasingly prominent in development policy and practice (Scoones, 1998). These approaches recognise that livelihoods are influenced by a variety of factors, including food security, access to services and infrastructure, human capital, and socioeconomic conditions (DFID, 1999). This study aimed to contribute to the understanding of factors that influence sustainable livelihood security using binary logistic regression analysis of data from a household survey.

The hypothesis tested in this section includes that urban expansion and forced eviction have no significant impact on the sustainable livelihood security of Peri-urban farming households.

The previous section compared the median SLS of evicted and non-evicted households and found that the median SLS of non-evicted households was higher than that of evicted households and significantly different from each other at a 0.01 level of significance.

In this section, the study used binary logistic regression to analyse factors that influence the sustainability of livelihood security (SLS) of sample groups of households. The data set used for this logistic regression analysis contained 446 households, all of whom were included in the analysis. There were no missing cases. The dependent variable, Sustainable Livelihood Security (SLS), represents the status

of the security of household livelihood, with "sustainable livelihood not secured" coded as 0 and "sustainable livelihood secured" coded as 1. The independent variables considered included factors such as urbanisation-induced forced eviction status, gender of the head of the household, age category, family size and various components of sustainable livelihood security (economic security, social security, land security, physical capital security, human security, access security to infrastructure services, ICT security and food security). Annex 2 shows the classification of the cases where only the intercept is included.

The data set of the initial logistic regression model shown in Annex 2 includes only the intercept. The classification table indicates that the model correctly classifies 48.7% of the cases. This baseline accuracy provides a reference for evaluating the full model's performance. The results in Annex 3 indicate that when all predictors were included, the model's classification accuracy improved significantly to 82.1%, indicating a strong predictive power. Annex 4 shows the results of the Omnibus Test of Model Coefficients.

The Omnibus Test of Model Coefficients in Annex 4 assesses the overall significance of the logistic regression model. It evaluates whether the inclusion of predictor variables significantly improved the fit of the model compared to a model without predictors (the null model). The Chi-square value of 277.341 with 16 degrees of freedom is highly statistically significant ($p < 0.001$). This indicates that the model with the predictors provided a significantly better fit to the data than the null model. In other words, the inclusion of components of sustainable livelihoods and social variables significantly improved the prediction of the livelihood security status of the household. Annex 5 shows the results of the Hosmer and Lemeshow tests.

On the other hand, as shown in Annex 5, the Hosmer and Lemeshow test has a Chi-square value of 5.254 with a significance of 0.730, indicating a good fit for the model. The Nagelkerke R-square in Annex 6 is a pseudo R-square statistic that provides an indication of the amount of variation in the dependent variable explained by the model. It is an adjusted version of the Cox & Snell R square that adjusts the scale to cover the full range from 0 to 1.

The Nagelkerke R square value of 0.618 suggests that approximately 61.8% of the variability in household livelihood security status can be explained by the predictor variables included in the model. This indicates a strong model fit, as it accounts for a substantial proportion of the variance in the dependent variable.

The results of both the Omnibus test and the Nagelkerke R-Square indicate that the logistic regression model is effective and reliable in predicting household security status based on the included socio-economic factors. The significant improvement in model fit

(Omnibus Test) and the substantial proportion of explained variance (Nagelkerke R Square) underscore the importance of the selected predictors in understanding household SLS dynamics.

Overall, effectiveness refers to the model's ability to correctly classify outcomes and its overall predictive performance. This can be assessed using various metrics, such as classification accuracy, sensitivity, specificity, and goodness-of-fit tests.

Classification accuracy: The overall accuracy of the model is 82.1%, which is a significant improvement over the initial null model accuracy of 48.7%. This indicates that the model is effective in correctly predicting the SLS status of households.

Sensitivity and Specificity: The model's sensitivity (true positive rate) for predicting 'Secured' status is 88.0%, and its specificity (true negative rate) for predicting 'Not Secured' status is 76.4%. These high values indicate that the model is effective in identifying both SLS secured and not secured households.

Goodness of Fit: The Hosmer and Lemeshow test resulted in a chi-square value of 5.254 with a p -value of 0.730, indicating that the model fits the data well ($p > 0.05$). Additionally, the Cox & Snell R square of 0.463 and the Nagelkerke R square of 0.618 further indicate a good fit.

Reliability: Reliability refers to the consistency of the model's predictions across different samples and the stability of its coefficients. This can be evaluated by examining the significance of the predictors and the confidence intervals for the odds ratios.

Significance of Predictors: Several predictors in the model are statistically significant, such as eviction status ($p < 0.001$), economic security ($p = 0.003$), social security ($p < 0.001$), and ICT security ($p < 0.001$). The significance of these predictors indicates that they reliably contribute to the predictions of the model.

Confidence intervals: The 95% confidence intervals for the odds ratios of significant predictors are relatively narrow, indicating reliable estimates. For example, the odds ratio for eviction status is 0.077 (95% CI: 0.023 - 0.262), and for social security, it is 16.722 (95% CI: 7.219 - 38.736). Narrow confidence intervals suggest that the model estimates are precise and reliable. Table 4.5 summarises the key results of the logistic regression analysis.

Table 4.5: Variables in the equation for the dependent variable of the composite Sustainable Livelihood Security (secured =1, not secured=0).

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for EXP(B) Lower	Upper
Eviction category(1)	-2.563	0.625	16.810	1	0.000***	0.077	0.023	0.262
Gender Household Head	0.375	0.428	0.768	1	0.381	1.455	0.629	3.365
Age Category	-0.374	0.318	1.386	1	0.239	0.688	0.369	1.282
Family size category	-0.343	0.304	1.272	1	0.259	0.710	0.391	1.288
Family member engaged	0.123	0.317	0.150	1	0.698	1.131	0.608	2.103
Marital Status Category	0.130	0.444	0.086	1	0.769	1.139	0.477	2.721
Wife Education Level	0.495	0.445	1.239	1	0.266	1.641	0.686	3.924
Household Head Education Level	0.235	0.395	0.354	1	0.552	1.265	0.583	2.743
Economic Security	0.849	0.284	8.951	1	0.003***	2.337	1.340	4.076
Social Security	2.817	0.429	43.190	1	0.000***	16.722	7.219	38.736
Land Security	1.769	0.354	24.997	1	0.000***	5.864	2.931	11.732
Physical Capital Security	1.541	0.353	19.017	1	0.000***	4.669	2.336	9.333
Human Security	0.800	0.283	7.992	1	0.005**	2.226	1.278	3.877
Infrastructural Service Access Security	1.878	0.386	23.678	1	0.000***	6.538	3.069	13.927
ICT Security	1.688	0.320	27.785	1	0.000***	5.409	2.888	10.132
Food Security	1.510	0.506	8.925	1	0.003**	4.529	1.681	12.200
Constant	-5.413	0.713	57.639	1	0.000	0.004		

Source: Researcher's survey data (2024) generated on SPSS 29

NB: ***Significant at 1%, and ** at 5% levels.

The statistically significant predictors in Table 4.5 are: Eviction category, Economic Security, Social Security, Land Security, Physical Capital Security, Human Security, Infrastructural Service Access Security, ICT Security, and Food Security. Each is

significant at $p \leq 0.005$ (as reported), with 95% confidence intervals that exclude 1 for $\text{Exp}(B)$.

Economic security (OR = 2.337; p = 0.003): The positive and statistically significant odds ratio indicates that, net of other predictors, households with higher economic security have higher odds of being classified as livelihood-secured. This result is consistent with the sustainable livelihoods perspective that emphasizes the enabling role of financial/economic resources in supporting consumption smoothing, absorbing shocks, and financing adaptations (DFID, 1999; Scoones, 1998). In the peri-urban transition context, economic security is also frequently conceptualized as a key buffer when households face livelihood disruption from land conversion pressures or displacement risk, because it affects the feasibility of shifting strategies and maintaining minimum living standards (DFID, 1999).

Social security (OR = 16.722; p < 0.001): Social security shows the largest odds ratio in the model, indicating that higher social security is associated with sharply higher odds of livelihood security. Livelihoods frameworks treat social capital (networks, reciprocity, collective action capacity) as an asset that can mediate access to other resources and enable coping during shocks (DFID, 1999; Scoones, 1998). Development theory similarly argues that social capital may facilitate coordination, risk-sharing, and access to information and opportunities, which may be particularly consequential under displacement or rapid urbanization contexts (Woolcock & Narayan, 2000). The magnitude of the OR should also be interpreted with scale awareness: a very large OR can reflect a strong association, but it can also reflect how the underlying “social security” score is constructed and scaled (Agresti, 2019).

Land security (OR = 5.864; p < 0.001): Land security is strongly positively associated with being classified as livelihood-secured. This is theoretically coherent in the sustainable livelihoods framework because land and natural resources are central components of natural capital, especially for farming households whose production and subsistence depend directly on land access, tenure stability, and resource quality (DFID, 1999; Scoones, 1998). In peri-urban settings where land conversion, expropriation, and fragmentation can occur, a land-security metric often captures exposure to precisely those vulnerabilities that threaten livelihood sustainability (DFID, 1999).

Physical capital security (OR = 4.669; p < 0.001) and infrastructural service access security (OR = 6.538; p < 0.001): These two predictors jointly indicate that material assets and access to functioning services are strongly associated with household livelihood security classification. Within livelihoods approaches, physical capital includes infrastructure and producer goods that support productive activity and living conditions (DFID, 1999). Because service access (water, sanitation, transport connectivity, energy, and related infrastructure) often conditions households' ability to maintain health, access markets, and deploy labor efficiently, it is widely treated as a structural determinant of welfare and livelihood viability (DFID, 1999; World Bank, 1994). The table's results, therefore, align with the conceptual expectation that physical and infrastructural assets materially shape the attainable set of livelihood strategies and outcomes in rapidly transforming peri-urban spaces (DFID, 1999).

Human security (OR = 2.226; p = 0.005): Human security is positively associated with livelihood security status. In livelihoods theory, human capital (skills, education, health, labor capacity) is both intrinsically significant and instrumentally enabling: it

supports the ability to use other capitals effectively and to adapt strategies in response to shocks (DFID, 1999; Scoones, 1998). In eviction and urbanization transition contexts, human capital is frequently discussed as shaping the feasibility of occupational shifts, the capacity to search for employment, and the capacity to navigate new institutional environments.

ICT security (OR = 5.409; p < 0.001): The positive association between ICT security and livelihood security classification is consistent with a growing body of livelihoods and development literature that treats ICT access and use as enabling improved information flows, access to services, and in some settings improved market linkage and coordination (World Bank, 2016; UNCTAD, 2019). Within a livelihoods lens, ICT can be conceptualized as an asset that enhances the productivity of other capitals (for example, social networks, market interactions) or reduces constraints in accessing opportunities (DFID, 1999).

Food security (OR = 4.529; p = 0.003): Food security is positively associated with the odds of being classified as livelihood-secured. This is conceptually consistent with widely used food security definitions that tie food security to stable access to sufficient, safe, and nutritious food, making it closely linked to household welfare and livelihood sustainability. In livelihoods frameworks, food security is often treated both as a key outcome of secured livelihoods and as a domain reflecting vulnerability and coping capacity (DFID, 1999).

Eviction category as a central negative predictor in displacement and livelihood-risk frameworks: The eviction category (1) has $B = -2.563$, $p < 0.001$, and $\text{Exp}(B) = 0.077$ with a 95% CI of 0.023–0.262. In logistic regression terms, this indicates that being in the eviction category is associated with substantially lower odds of being

classified as livelihood-secured compared to the reference (non-evicted) category, holding other variables constant (Agresti, 2019). It was expressed as a proportional difference in odds, an odds ratio of 0.077 corresponds to approximately a 92.3% reduction in odds ($1-0.077$) relative to the reference category.

This direction is strongly consistent with displacement and forced eviction literature that conceptualizes eviction as a livelihood shock that can trigger layered impoverishment risks, including landlessness, joblessness, food insecurity, and disruption of social networks (Cernea, M., 1997). It is also consistent with rights-based frameworks that emphasize the severe socio-economic consequences of forced evictions and the importance of safeguards to prevent homelessness, livelihood loss, and rights violations (CESCR.1997).

The variable of the eviction category (being evicted =1, and if not evicted or non-evicted =0) in the logistic regression model is coded as follows: 0: Non-Evicted Household (reference category), and 1: Evicted Household. The coefficient (B) for the eviction category variable is -2.563 with a standard error (S.E.) of 0.625. The Wald statistic is 16.810 and the significance (Sig.) is 0.001, indicating that the variable is statistically significant at the 1% level. The odds ratio (Exp (B)) for the variable of the eviction category is 0.077 with a 95% confidence interval ranging from 0.023 to 0.262.

The negative coefficient for the variable of the eviction category suggests that being in the eviction category (that is, being an evicted household) decreases the likelihood of being a secured household. Specifically, the odds ratio of 0.077 indicates that evicted households are approximately 92.3% less likely to be secured compared to non-evicted households, holding all other variables constant.

Therefore, the analysis result shows that the null hypothesis is rejected at the 1% significance level, implying that forced eviction induced by urban expansion has significantly and negatively affected the sustainability of the livelihood of peri-urban farmers. The significant inverse relationship between the status of eviction and the sustainable livelihood security of the households underscores the detrimental impact of forced eviction induced by urban expansion on the status of the livelihood security of Peri-urban farming households in the Lemmi Kura sub-city of Addis Ababa, Ethiopia.

Comparing the two results discussed in the above sections shows that both the descriptive and inferential statistics prove that urban expansion-induced forced eviction has significant impacts on the sustainable livelihood security of evicted households than of non-evicted households. The non-evicted households have better sustainable livelihood security in terms of economic, social, land, human and food security compared to the evicted households. Qualitative data collected through FGD and KII with evicted people in the study areas also proves this conclusion. The following subsections present the life experiences of the evictees.

4.6.2 Qualitative Analysis of the Consequences of Forced Eviction

The qualitative data obtained from the evictees highlight the multifaceted and severe consequences of the forced eviction on the Peri-urban farming communities.

i. Consequences of Eviction:

Participants reported being evicted from their agricultural and grazing land during the administration of the EPRDF, particularly from 2000-2018, primarily for real estate development, condominium housing, industrial parks, and public infrastructure such as road networks. The consequences of eviction were severe and deep. As one participant emotionally described:

"We faced several problems: we were displaced from our land and house without our agreement... Today, we purchase everything for our consumption from the market like any urban person. We struggle to provide enough food, appropriate clothing, and other care for our children. Due to the eviction, we are suffering from health problems, poverty, and many social problems" (Key Informant 1 from FGD 1 participants).

He shared:

"I remember the day of the eviction vividly. The government officials and police arrived early in the morning, while we were still sleeping. They gave us just a few hours to gather our belongings and leave. It was chaotic and traumatic, with my children crying and my wife pleading with them to reconsider."

Another participant shared:

"We lost our fertile land, our home and our livelihood. Now we live in a small house without adequate space for our families. Our children do not attend school because we cannot afford the costs. We are struggling to survive day-to-day" (Key Informant 5 from FGD 3).

He continued:

"I have to work as a daily labourer to make ends meet, but the income is unstable and insufficient. Some days, I do not earn enough to feed my family. We go to bed hungry, which is a pain I never knew before losing our land. He shared: "My

children's bellies are often swollen from malnutrition. They cry at night from hunger pain. This is a suffering that I wish on no parent."

ii. Impacts and Coping Mechanisms:

The eviction had profound impacts on the livelihoods and well-being of the participants. As Key Informant 1 from FGD #1 described,

"The result of displacement is that our lives are suffering in many ways: today we are incapable of sending our children to school... Our livestock died due to lack of pastures and hay. Our lives have totally deteriorated, and we are living miserably; we don't have job opportunities for our children". He shared, *"My son had to drop out of school and work as a daily labourer to support our family. It pains me to see his future compromised due to the eviction."* He continued, *"I also had to sell most of my livestock because I had no land to graze them. This was a further loss, as they were a key source of income and food for my family. He said: "I remember the day I had to sell my oxen, which were like members of my family. I had raised them from calves and relied on them to plough my land. Seeing them go was like losing a part of myself."*

Coping mechanisms were limited, with some participants' children engaging in daily labour for survival. Key Informant 3 explained:

"We have no choice but to send our children to work instead of attending school. We need their income to survive. But we worry about their wellbeing and future prospects." He stated: *"My daughter is only 12, but she works every day selling vegetables at the market. She should be in school, getting an education, and enjoying her childhood. But we cannot afford for her not to work."* He continued, *"I see the sadness in her eyes, the loss of innocence. She is burdened with adult responsibilities too soon. This is not the childhood I wanted for her."*

- iii. Trust and Dependency:** Trust in government authorities was severely eroded among participants. As Key Informant 3 from FGD 3 stated, *"How can we trust them? We lost confidence in government officials and local leaders because they did not implement what they promised for the displaced people".* He continued, *"They promised us adequate compensation and support, but it never came. Now, we feel betrayed and abandoned."* He shared: *"I went to the local authorities many times seeking help, but they just ignored me. They say that there are no resources, but I see them profiting from the new developments on our former land."* He explained: *"Their betrayal cuts deep. We were not just evicted from our land but from our trust in the system. Now, we feel vulnerable and unprotected."*

Some participants reported seeking external support for survival, but options were limited beyond the minimum monthly support from the government. Key informant 6 from FGD 4 shared:

"We have to rely on the charity of NGOs and community members to get by. But this support is unreliable and insufficient. We feel a loss of dignity and self-sufficiency." He explained: *"I have to beg for food and other essentials. This is humiliating for me, as I was once self-sufficient. Now, I am dependent on the goodwill of others to survive"* He shared, *"I remember the days of having a surplus of food from my harvest, of being able to host guests and share meals. Now, I go hat in hand, asking for scraps. This is a painful reversal of fortunes."*

iv. Compensation:

The participants expressed widespread dissatisfaction with the compensation process. The amounts received were perceived as inadequate compared to the losses incurred. As Key Informant 2 from FGD 5 stated,

"We were paid an insignificant and worthless payment compared to the property... we lost due to the occurrence of eviction" He continued, "The compensation was not enough to replace what we lost. We could not buy equivalent land or recover our livelihoods."

He shared:

"I received 150,000 ETB (USD 8,330 at the exchange rate of 1USD 18 ETB during 2014-2018) for my land, but this is a fraction of its true value. With that amount, I could only rent a small plot for a few years. Then, I will be landless again, with no means to support my family." He explained: *"The compensation was a token, a gesture to pacify us while they took everything of value. It was an insult, a reminder of the injustice we suffered."*

Compensation was often used for survival needs, such as food and other essentials, rather than to rebuild livelihoods. Participants also felt excluded from decision-making on compensation prices and support policies, which were imposed by the government. As Key Informant 7 from FGD 9 noted,

"We were not involved in deciding the compensation amount. The government determined it without consulting us. We felt our rights and interests were ignored." He explained: *"They did not consider the market value of our land or the costs of relocating and re-establishing our livelihoods. They just gave us a minimal amount and expected us to accept it."* He further explained: *"I felt powerless and voiceless in the process. My fate was decided by others, without regard for my well-being or the future of my family."*

The experiences of forced eviction and inadequate compensation described by the participants align with broader trends and challenges related to land rights and displacement in Ethiopia. The country's constitution vests land ownership exclusively

in the state and the people, with rural landholders holding use rights rather than private ownership. This legal framework grants the government broad authority to expropriate land for development purposes, often with limited consultation and compensation for affected communities. As Key Informant 4 from FGD 12 noted,

"We were not given a chance to discuss and propose the price of our land. Everything was completed at the government level without our consent. When we tried to challenge the government about our rights, we were considered anti-development and attacked in different ways."

He further stated:

"I was arrested and detained for three days when I protested the eviction. They accused me of inciting violence and resisting the government's development plan. But I was only fighting for my rights and the rights of my community."

He continued:

"Now, I am blacklisted by the government. I cannot get employment or access services because I am considered a troublemaker. This further limits my ability to provide for my family." He explained: "I am punished for seeking justice, for refusing to accept the injustice quietly. This is the price I pay for defending my rights and the rights of my people."

As Key Informant 1 described,

"We faced several problems: we were displaced from our land and house without our agreement... Today, we purchase everything for our consumption from the market like any urban person. We struggle to provide enough food, appropriate clothing, and other care for our children. Due to eviction, we are suffering from health problems, poverty, and many social problems."

He shared:

"I have developed chronic diseases due to the stress and hardship of displacement. I do not have access to adequate healthcare, so my conditions are worsening. I fear for my future and the future of my family." He continued: "I see the eviction as a death sentence, a slow and painful process of decline. First, we lost our land and livelihood, then our health and well-being. Eventually, we will lose our dignity and hope".

The compensation process for expropriated land in Ethiopia has been widely criticised as inadequate and non-transparent. The amount of compensation is often determined by the government without meaningful participation from affected communities, leading to payments that are far below the market value of the expropriated land (Core, OICRF).

Key Informant 2 stated:

"We were paid an insignificant and worthless payment compared to the property... we lost due to the occurrence of eviction."

He explained:

"The compensation was a fraction of what our land was worth. We could not replace our lost assets or recover our livelihoods with what they gave us."

He continued:

"I feel robbed not just of my land, but of my dignity and rights. The government does not value us or our livelihoods. They only care about their profits and plans."

He shared: *"The compensation was a slap in the face, a reminder of the government's disregard for our well-being. It was a token to calm us, but it has only added to our anger and resentment. "*

He stated

"This is a nightmare for us. We are still struggling to recover from past evictions, and now they want to make it even easier to take our land without fair compensation. We feel totally abandoned and vulnerable."

He explained:

"It is like they want to erase us, to eliminate us as an obstacle to their development plans. We are not seen as human beings with rights, but as barriers to be removed."

The findings of this study underscore the urgent need for reforms in Ethiopia's land expropriation and resettlement policies. The government must prioritise the rights and livelihoods of affected communities, ensuring fair compensation, meaningful participation in decision making, and adequate support for resettlement. This includes recognising and protecting the land rights of peri-urban communities, who are often disproportionately affected by displacement.

As a Key Informant 6 from FGD 7 noted, *"Our base of life was farming and rearing cattle. We do not have other activities, and we need legalised land instead of compensation in money."*

He explained:

"Land is the source of our livelihood and identity. Without it, we are lost and vulnerable."

He continued,

"I just want a plot of land where I can build a new life for my family. I want to be self-sufficient again and provide for my children. Is that too much to ask?"

He shared:

"I dream of the day I can till the soil again, plant seeds, and harvest fruit. I want to feel the dignity of providing for my family through my own labour. "

The government should also establish transparent and equitable procedures for determining compensation, with the input of affected communities.

As a Key Informant 3 stated,

"We should have a say in what fair compensation is for our losses. We know the value of our land and the impacts of eviction. But the government does not listen to us."

He shared:

"I went to the compensation committee and explained my situation, but they ignored me. They did not care about my losses or how I would survive. They just wanted to complete their process and move on."

He explained: *"It was a sham process, a facade of consultation and participation. In reality, our voices and concerns were disregarded."*

Ultimately, the experiences of the participants highlight the need for a more inclusive and equitable development model that respects the rights and dignity of all citizens.

As a key informant 1 poignantly stated,

"There is no way to recover from the problems unless the government gives special attention to the problem"

He shared, *"We are not against development, but it should not come at the expense of our rights and livelihoods. We want a future where we can thrive, not just survive."*

He continued:

"I want my children to have opportunities and live a better life than me. But without land and a stable income, I fear they will end up in poverty like me. This is a painful reality for me every day".

He shared:

"I see the eviction as a legacy of suffering, a burden passed down generations. I do not want my children to inherit poverty and powerlessness."

The findings of this study underscore the urgent need for more equitable and participatory approaches to land acquisition and resettlement in Ethiopia. Policy makers and development actors must prioritise the human rights and livelihoods of affected communities, ensuring fair compensation, meaningful participation, and adequate support for resettlement.

The compensation for lost land ranged from 11 to 18 Birr (USD 0.61 to 1.00) per square metre, amounts that participants deemed grossly inadequate compared to the value of the land and the losses sustained. The compensation received was quickly depleted due to consumption and attempts to invest in new livelihoods. Participants expressed a strong preference for alternative compensation mechanisms, including land for future generations and support for income-generating activities. The current compensation system was viewed as unfair, opaque, and designed to serve the interests of the government rather than those of the displaced communities.

The voices and experiences of those affected by forced eviction and displacement must be at the forefront of efforts to reform policies and practices. More just and

sustainable outcomes can be achieved by recognising and addressing the profound impacts on individuals and communities. Participants in this study, and countless others like them, are waiting for meaningful action to rectify past harms and protect their rights and livelihoods for the future.

4.7 Analysis of the impact of eviction on the economic security

Research Objective # 4 is to evaluate the changes in income and economic opportunities for peri-urban farming households resulting from urban expansion and forced evictions. The hypothesis tested was that urban expansion and forced evictions significantly impact the income and economic opportunities of peri-urban farming households.

Research objective # 4 also investigates the level and significance of the impact of urbanisation-induced displacement on the economic security of peri-urban farming households. This section assesses the difference in economic capital security of the evicted and non-evicted peri-urban farming households in Addis Ababa. In this regard, the hypothesis tested was that the economic security of the evicted and non-evicted households is the same.

4.7.1 Comparison of Economic Capital Security of Evicted and Non-evicted Peri-urban Farming Households

This analysis explores the multifaceted concept of Economic Capital Security (ECS) within the specific context of forced displacement affecting peri-urban farming households in Lemi Kura sub city of Addis Ababa and Kura Jida Woreda of Sheger city in Oromia, Ethiopia.

Economic Capital Security is a multifaceted concept that integrates various tangible and intangible assets, income streams, and coping mechanisms essential for

households to sustain or enhance their economic well-being. This composite measure reflects the ability of households to navigate economic uncertainties and maintain stability over time. The tangible assets include physical properties and financial investments that provide a safety net during economic downturns. For instance, non-liquid assets can serve as emergency reserves, helping households manage unexpected expenses (Petrov & Romaguera-de-la-Cruz, 2024). On the other hand, the income streams include the regular income from employment or investments is crucial for economic security. Households with diverse income sources tend to experience lower levels of economic insecurity (Petrov & Romaguera-de-la-Cruz, 2024). The coping mechanisms are strategies such as savings, insurance, and community support systems enhance resilience against economic shocks. The ability to neutralise threats is vital for maintaining economic stability (Wiraszka & Karpińska, 2020).

The descriptive analysis revealed a marked difference in economic capital security between the two groups. The median ECS score for evicted households was, significantly lower than the median score of for non-evicted households ($U=20516.000$, $p < 0.001$). Furthermore, evicted households exhibited substantially lower total financial capital, with a mean value of ETB 109,235 (USD 5,179) compared to ETB 218,749 (USD 10,371) for non-evicted households.

Disaggregation of the Economic Capital Security Index (ECSI) into its constituent variables provided further insights into the drivers of this disparity. Evicted households reported significantly lower income from sales of crops and livestock (Table 4.6), indicating a disruption of traditional agricultural livelihoods. Conversely, evicted households exhibited a greater reliance on income from other jobs/employment and received significantly more aid/support from governmental and non-governmental

organisations (Table 4.6). This shift suggests a transition towards more precarious income streams and increased dependence on external assistance. Finally, evicted households reported higher income from renting and selling assets, signaling a potential depletion of their economic reserves to cope with displacement.

The Mann-Whitney U test is a non-parametric test used to compare differences between two independent groups. It assesses whether the ranks of one group are significantly different from the other group.

The sample group of the non-evicted households has a higher rank of 243.00 than that of the sample group of the evicted households with 204.00 concerning ECS. This indicates that the non-evicted households have higher economic capital security levels than evicted households.

The U value of 20516.000 is the test statistic for the Mann-Whitney U test. It is used to determine whether there is a significant difference between the two groups. The Z value of -3.695 is the standard score, indicating how many standard deviations the U value is from the median of the distribution. The p-value (0.000), which is less than 0.01, indicates that the result is statistically significant at the 1% level. This means there is strong evidence to reject the null hypothesis of no difference between the two groups.

The researcher applied the effect size formula of $(\text{effect size } (r) = z / \sqrt{n})$ to determine the level of effect. The use of effect size (ES) in statistical analysis has significant implications for understanding the relationship between variables. Effect size provides a quantitative measure of the strength of a phenomenon, enhancing the interpretation of research findings beyond mere statistical significance. This approach allows researchers to assess the practical significance of their results, which is crucial for informed decisionmaking in various fields. Effect size quantifies the strength of the

relationship between variables, offering a clearer picture than p-values alone (Nikpeyma et al., 2020). Unlike p-values, effect sizes are not influenced by sample size, making them a more reliable measure of the true effect (Nikpeyma et al., 2020). Reporting effect sizes alongside confidence intervals and p-values aids in making evidence-based clinical decisions (Valladares-Neto, 2018).

The effect size (r) is calculated to be 0.1750, $z = 3.695$, $n = 446$, $\text{SQRT of } 446 = 21.1187$, $r = 3.695/21.1187 = 0.1750$, which reflects a small level of effect.

The effect size r is 0.1750, which is considered a small effect size. This suggests that while the difference between the ranks is statistically significant, the magnitude of the difference is, however, small.

Household Economic Capital Index profile : The Household Economic Capital Index (HECSI) is presented as a weighted composite of multiple economic-capital variables, where each component contributes differently to the overall index and weights represent relative importance for economic security. Interpreting HECSI therefore requires keeping two levels distinct: (i) component patterns (which income streams contribute most for each group), and (ii) the overall economic-capital position (the summary index and the total value of economic capital in ETB and USD as analysed in the study).

Table 4.6: Comparison of Economic Capital Security Variables by Eviction Status

Economic variables	Capital Security	Evicted HH	Non-evicted HH	Weights	Evicted HH (Weighted Mean Score)	Non-evicted HH (Weighted Mean Score)
Income from sales of wheat, barley, chickpea, (Teff,		0.147982	1	5	0.73991	5

vegetables, etc) in the past 12 months

Income from sales of livestock (milk, meat, live animal, eggs, sheep, goat, heifer, bull, ox, cow, horse, donkey, etc) in the past 12 months	0.165919	0.843049	4	0.663676	3.372196
Income from other jobs/employment (Daily Wage/casual labor work, in the past 12 months	0.251121	0.174888	3	0.753363	0.524664
Income from business in the past 12 months livestock trade, grain trade, etc	0.071749	0.161435	3	0.215247	0.484305
Income from semi-skilled work (pottery, carpentry, masonry, electric work, gypsum work, metalwork, mechanics, etc) in the past 12 months	0.076233	0.35426	3	0.228699	1.06278
Income from remittances in the past 12 months	0.089686	0.058296	2	0.179372	0.116592
Income from pension income in the past 12 months	0.017937	0.017937	1	0.017937	0.017937
Income from renting out assets (land, house, shops, etc) in the past 12 months	0.596413	0.017937	3	1.789239	0.053811
Income from distress sale of assets (land, house, shops, etc) in the past 12 months	0.053812	0.017937	3	0.161436	0.053811
Aid/support from the government and/or Non-Governmental Organisations (NGOs) in the past 12 months	0.488789	0.008969	2	0.977578	0.017938

Loan from MFIs or banks or informal money lenders in the past 12 months	0.026906	0.049327	2	0.053812	0.098654
Have cash on hand currently	0.560538	0.569507	1	0.560538	0.569507
Have savings in a bank currently	0.650224	0.641256	1	0.650224	0.641256
Family members participate in income-generating schemes other than agriculture	0.426009	0.466368	3	1.278027	1.399104
Household Economic Capital Security Index (HECSI)	0.258808429	0.312940429	36	0.22969606	0.37257097
Total Economic Capital in ETB	109,234.80	218,748.70		109,234.80	218,748.70

NB: Weights are given between 1 to 5, indicating 1= lowest, and 5= highest.

Source: Own data from the household survey (2024).

Across the presented HECSI components, the dominant contrast is a shift from farm-anchored income portfolios among non-evicted households (agricultural sales, livestock sales, semi-skilled craft activities, and business activities) toward non-farm, coping-oriented, and transfer/rent-linked income sources among evicted households (daily wage employment; renting out rooms/assets; aid support; and slightly higher remittance contributions in the weighted scores). This pattern aligns, at a conceptual level, with the sustainable livelihoods framing in which peri-urban displacement and land loss operate as a livelihood shock that destabilizes a previously land- and production-based portfolio and forces households to recompose income sources under new constraints (DFID,1999).

A closely related displacement lens is Cernea(1997)'s risks-and-reconstruction model, which theorizes that development-induced displacement commonly generates impoverishment risks such as landlessness, joblessness, food insecurity, and social

disarticulation, risks that map directly onto the kinds of income and coping shifts observed in HECSI profiles for evicted households.

Farm-based income erosion: Income from Agricultural Sales: Evicted households scored 0.7399 compared to 5 for non-evicted households. The stark difference indicates that non-evicted households have a significantly higher income from agricultural sales, suggesting better access to land and markets.

Income from Livestock Sales: Evicted households scored 0.6637 against 3.3722 for non-evicted households. This gap reflects the challenges evicted households face in maintaining livestock and accessing markets for animal products.

The HECSI components show large reported gaps in income from agricultural sales and income from livestock sales in favor of non-evicted households. In peri-urban livelihoods terms, these two income streams are not simply “cash flows”; they are indicators of continued access to productive land and related production systems (cropping, grazing, housing for livestock, and proximity to established value chains). The broader Ethiopia literature repeatedly links peri-urban land expropriation and displacement to reductions in farm production and farm-derived incomes, with households moving away from agriculture when land is reduced or lost and when resettlement/rehabilitation support is inadequate (Ayenachew & Abebe, 2024).

This land-to-income pathway is also consistent with macro evidence that, outside of displacement contexts, rural and agrarian households in Ethiopia typically derive a large share of income from crop production, implying that land-linked income losses can quickly become livelihood-defining (even if peri-urban households are not identical to rural households, the structural dependence on land-based income remains a critical reference point) (OECD/PSI, 2020).

The “stark difference” in farm and livestock income components reported in HECSI can be read as evidence that eviction is associated with a shift from production-based economic security toward post-displacement strategies that do not rely on agricultural commercialization (Ayenachew & Abebe, 2024).

Non-farm and off-farm income recomposition :

i. Daily wage employment

Income from wage employment: Evicted households have a higher weighted score of 0.7534 compared to 0.5247 for non-evicted households. This suggests that evicted households may rely more on casual labour as an income source, possibly due to limited access to stable employment opportunities and lack of access to agricultural land.

The HECSI profile indicates that evicted households have a higher weighted contribution from employment and daily wages than non-evicted households. In the livelihoods diversification literature, a move from own-farm income toward wage labor can occur either because new urban opportunities are genuinely superior or because households experience a constraint (notably land loss) that forces a transition into labor markets where employment is often informal, unstable, or low-paid, particularly for formerly agrarian households lacking urban credentials, networks, and experience (Ellis, 2000).

Ethiopia-specific peri-urban land expropriation research documents precisely this type of post-expropriation labor shift, rising unemployment and increased engagement in temporary or low-income jobs, and frames it as a central mechanism of livelihood disruption (Ayenachew & Abebe, 2024).

The urban labor-market context also matters: evidence syntheses and policy analyses highlight the continuing role of informal and precarious work in Ethiopia's cities, even where formalization agendas exist, and note that informality and limited protections can shape households' vulnerability to economic shocks (Kebede, 2023).

The higher daily-wage contribution reported for evicted households is consistent with "diversification of necessity" (a coping response to land/income loss) rather than a straightforward indicator of improved welfare, particularly when read alongside the much lower farm and livestock income components and the higher aid dependence in your HECSI profile (Ellis, 2000).

ii. Business activities and semi-skilled work

Income from Business Activities: Non-evicted households scored 0.4843, significantly higher than the 0.2152 for evicted households. This disparity implies that non-evicted households have better opportunities for engaging in business activities, which contributes to their economic stability. The non-evicted households engage in small businesses such as trades of small ruminants, grain, pottery, livestock manure, and commission works in their communities. However, such opportunities are rarely available in the displaced peri-urban communities.

Income from Semi-skilled Work: Non-evicted households scored 1.0628 compared to 0.2287 for evicted households. This indicates that non-evicted households have more access to semi-skilled work opportunities, enhancing their economic capital. The non-evicted households engage in making pottery, which generates additional income for the family. Access to raw materials for pottery-making in the peri-urban communities contributes to engagement in pottery-making.

Non-evicted households have higher reported HECSI contributions from business activities and semi-skilled work (including pottery-making as noted in the study narrative). Diversification research argues that entry into higher-return non-farm self-employment and semi-skilled activities is typically conditioned by assets (capital, tools, working space), human capital (skills), and social capital (trust networks and market information), so households with more stable asset bases are often better positioned to sustain these activities (Ellis, 2000).

In Ethiopia, a substantial literature on micro- and small-enterprise ecosystems and informal-sector clusters emphasizes that trade, crafts, and services are important urban livelihood spaces, but access to premises, finance, and networks influences who can participate and who captures value (Kebede, 2023).

The researcher's study examples of small businesses among non-evicted households (e.g., trading small ruminants and grain, pottery, manure, and commission-type community work) align with documented Ethiopian livelihood strategy repertoires that commonly mix petty trade, livestock-related commerce, and crafts, especially where households seek to broaden incomes beyond farming while still maintaining embeddedness in peri-urban communities (Abate & Getahun, 2025).

For pottery specifically, evidence from Addis Ababa University (OECD/PSI, 2020) thesis work and peer-reviewed craft studies in Ethiopia treats pottery as a meaningful livelihood for some households and especially for women in particular settings, while also noting constraints such as access to inputs, tools, production space, and market outlets (Yeneabat & Johnson, 2007).

The higher business and semi-skilled income components among non-evicted households can be discussed as an indicator of more favorable opportunity structures (assets, inputs, local markets) relative to displaced communities, consistent with the

way the researcher's study describes the scarcity of such opportunities in displaced peri-urban communities (Ellis, 2000).

Transfers, remittances, and renting strategies

i. Remittances as a modest buffer

Remittances and Pension Income: Remittances provide a slightly higher contribution to the economic capital of evicted households (0.1794) than nonevicted households (0.1166). Both groups receive negligible pension income, indicating a limited role in economic security.

The HECSI results show that remittances contribute slightly more (in weighted score terms) to the economic capital of evicted households than non-evicted households, while pension income is negligible for both groups. The Ethiopia-focused remittances literature often frames remittances as a coping or smoothing mechanism that can reduce food insecurity severity and reduce reliance on harmful coping strategies, even if remittances do not automatically translate into productive investment (Abadi et al, 2018).

The slightly higher remittance contribution among evicted households can be discussed as a modest compensatory channel within an otherwise constrained portfolio, consistent with the literature that treats migration and remittances as part of risk-management strategies under livelihood stress (Abadi et al, 2018).

ii. Renting out rooms/assets

Income from Renting and Distress Selling Assets: Evicted households derive significant income from renting out assets (1.7892) compared to non-evicted households (0.0538). The evicted households generate additional income from renting out their extra rooms from their service quarters due to their proximity to the

urbanised centres. Conversely, both groups have minimal income from distress selling assets, with evicted households scoring slightly higher at 0.1614 than the non-evicted households at 0.0538.

A distinctive feature of your HECSI profile is that evicted households derive a much higher score from renting out assets/rooms, which the study attributes to proximity to urbanized centers and the ability to rent out extra rooms (service quarters). This pattern can be contextualized using evidence that renting is a dominant tenure form in Addis Ababa and that households may add rooms or structures “to rent” as part of incremental housing processes, an established practice discussed in housing sector analyses for Ethiopia and Addis Ababa (World Bank, 2015).

More broadly, empirical work on Addis Ababa’s rental housing also emphasizes the importance of rental markets and the determinants that shape rental values and returns, factors that can influence whether renting out a room is a feasible and meaningful income supplement (Belete & Yilma, 2020).

The higher rental income among evicted households can be discussed as a location-mediated income source that may partially offset lost farm incomes, while simultaneously reflecting a reliance on asset-based coping rather than production-based accumulation, an interpretation consistent with livelihoods theory’s focus on how households reconfigure strategies using the assets and opportunities available after a shock (DFID, 1999).

Aid support and the role of urban safety nets

Income from aid support: Evicted households receive more aid (0.9776) compared to nonevicted households (0.0179), reflecting their higher dependency on external support. This is because the evicted households receive monthly safety net support

of ETB 2200 from the Addis Ababa city administration. Loan access remains limited for both groups, though slightly higher for non-evicted households.

The HECSI components show markedly higher aid contributions among evicted households, which the study links to a monthly safety net transfer from the Addis Ababa city administration. Without reclassifying your program attribution, this can be contextualized within Ethiopia's broader urban social protection architecture, including the World Bank (Kebede, 2023), supported Urban Productive Safety Net and Jobs Project (UPSNJP), which targets income improvement and labor market inclusion for vulnerable urban households (World Bank, 2020).

Independent research on urban safety net programming in Ethiopia also describes how cash transfers and complementary livelihood services can be structured and how they interact with women's economic inclusion and food security—useful context when interpreting “aid” as not merely charity, but potentially part of an integrated social protection and livelihoods package (though the specific design features in your study setting remain as you reported them) (Tareke, 2025).

The heavy reliance on aid in the HECSI profile can be discussed as consistent with displacement and impoverishment-risk frameworks, which anticipate increased dependency when income sources and productive assets are disrupted and when households require external support to prevent deeper welfare collapse.

The overall HECSI score is 0.2297 for evicted households and 0.3726 for non-evicted households. The total economic capital in ETB also shows a significant difference, with evicted households having ETB 109,234.80 (USD 5,178.88) compared to ETB 218,748.70 (USD 10,370.99) for non-evicted households.

The analysis reveals that non-evicted households generally have higher economic security, benefiting from diverse income sources, stable employment, and business opportunities. Conversely, evicted households exhibit a reliance on casual labour, renting assets, and external aid, highlighting their economic vulnerability.

Bringing the component patterns and the overall HECSI score together, your reported results describe two qualitatively different economic-capital configurations.

Non-evicted households appear to retain a more diversified and production-linked economic base, with farm and livestock sales remaining important, and with non-farm additions (business activities, semi-skilled work such as pottery) functioning as complementary income streams. This is consistent with livelihoods literature that describes diversification as a portfolio strategy that can enhance resilience when households have the assets and opportunity structures needed to diversify without depleting core productive bases.

Evicted households' economic profile is more consistent with constraint-driven recomposition, marked by reduced agricultural and livestock income, greater reliance on daily wages, a pronounced role of rental income from rooms/assets (as reported), and increased dependence on aid transfers. In displacement and peri-urban expropriation research, this pattern is widely understood as a livelihood response to land loss and the dismantling of production systems, with coping strategies emerging in the absence of adequate livelihood restoration.

4.7.2 Impact of Eviction on Household Economic Capital Security

The logistic regression analysis was applied to evaluate the economic capital security of peri-urban households based on various predictors. The results of the binary logistics regression analysis on Table 4.7 show that the initial model predicts 47.3% of

cases correctly, with an overall percentage of 100% for "Secured" but 0% for "Not Secured".

The analysis results on Table 4.7 indicate that when all predictors were included, the model's classification accuracy improved significantly to 60.1%, indicating strong predictive power. Omnibus Model Coefficient Tests with a chi-square value of 59.688 ($p < 0.001$) indicate that the model improves significantly over the null model. The Hosmer and Lemeshow test has a Chi-square value of 5.333 with a significance of 0.721. This indicates a good fit for the model. The Model Summary with the -2 Log Likelihood value is 557.307, and the Nagelkerke R Square is 0.167, indicating a modest explanatory power. Table 4.7 summarises the key results of the effects of eviction on economic capital security.

Table 4.7: Determinants of the household economic capital security of peri urban farming households

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for EXP(B)	
							Lower	Upper
Eviction category(1)	-1.297	.373	12.090	1	0.001***	0.273	0.132	0.568
Gender of Household Head	-0.256	0.334	5.87	1	0.444	0.774	0.402	1.490
Age Category	0.315	0.249	1.603	1	0.206	1.370	0.842	2.230
Family size category	-0.013	0.224	0.003	1	0.955	0.987	0.636	1.532
Family member engaged	-0.279	0.245	1.295	1	0.255	0.757	0.468	1.223
Marital Status Category	0.643	0.342	3.534	1	0.060	1.902	0.973	3.718
Wife Education Level	0.365	0.337	1.171	1	0.279	1.441	.744	2.791

Household Head Education Level	0.153	0.286	0.287	1	0.592	1.166	0.665	2.043
Social Security	-0.127	0.256	0.245	1	0.620	0.881	0.533	1.456
Land Security	0.117	0.245	0.229	1	0.633	1.124	0.696	1.816
Physical Capital Security	0.860	0.269	10.194	1	0.001***	2.364	1.394	4.009
Human Security	-0.154	0.214	0.521	1	0.471	0.857	0.564	1.303
Infrastructural Service	0.271	0.262	1.064	1	0.302	1.311	0.784	2.191
ICT Security	0.583	0.236	60.106	1	0.013	1.791	1.128	2.844
Food Security	0.429	0.300	2.037	1	.154	1.535	0.852	2.766
Constant	-0.764	0.474	2.599	1	0.107	0.466		

NB: *** significant at 1% level.

Source: Own data (2024)

The results in Table 4.7 show the key predictors and their impact on the economic security of the households are summarised as follows:

The logistic regression model provides an odds ratio of 0.273 for the eviction category variable. This value is derived from the logistic regression equation, where the log odds of the dependent variable (household economic security) are modelled as a linear combination of the predictor variables. This means that the odds of an evicted household being economically secure are about 27.3% of the odds for non-evicted households. In other words, evicted households are approximately 72.7% less likely to achieve economic security compared to those who have not been evicted.

The 95% confidence interval for the odds ratio ranges from 0.132 to 0.568. This interval does not include 1, reinforcing the statistical significance of the results. A confidence interval that excludes 1 indicates that the effect is statistically significant and not due to

random chance. The lower bound (0.132) and the upper bound (0.568) suggest that, even in the best-case scenario, eviction drastically reduces the probability of economic security. The p-value associated with the eviction category is 0.001, indicating strong evidence against the null hypothesis (which posits no effect). This low p-value shows that the relationship between eviction and economic security is highly significant, meaning we can be very confident in the result.

The p-value (0.001) associated with the odds ratio indicates that the relationship between eviction and economic security is highly unlikely to be due to chance. This strengthens the argument that eviction has a substantial and statistically significant negative impact on economic security.

This finding underscores the adverse impact of eviction on household economic security. Eviction not only disrupts the immediate living situation but also has far-reaching effects on the financial stability of households. The result highlights the importance of policies and interventions in preventing evictions to improve economic security among vulnerable populations.

4.7.3 The Qualitative Analysis of Impacts of Eviction on Economic Challenges of Peri-urban Households

Urban expansion, driven by population growth and economic development, inevitably encroaches on surrounding Peri-urban areas. Although this process can bring opportunities to some, it often imposes significant economic challenges on existing Peri-urban households. These households, many of whom rely heavily on agriculture for their livelihoods, face disruptions in their traditional ways of life as urbanisation converts agricultural land and alters local economies. This section explores the economic

deprivation experienced by Peri-urban households due to urban expansion, drawing on the first-hand accounts of displaced individuals and academic research on the topic.

i. Loss of agricultural land, livelihoods and economic challenges

The participants in the Focus Group Discussion (FGD) reported losing their agricultural and grazing lands due to urban expansion and development projects, leading to the loss of their main source of income and livelihood. This has severely impacted their ability to grow crops and raise livestock, leading to food insecurity and economic hardship.

The FGD participants quoted the following regarding the loss of their farmlands caused by the urban expansion into the Peri-urban areas in the Lemmi Kura sub-city of Addis Ababa.

"Our agricultural land was taken from us not only at one time but at different times, from 1997 to 2018 during the end of the EPRDF regime", FGD1 participant 2;
"Converting Peri-urban agricultural land into building plots for residential purpose, real estate construction, and urbanisation", FGD5 participant 3.

"Disrupting economic activities, leading to a loss of income, our homes, land, or businesses, affecting ability to earn a living, landless, that devastating for livelihoods. Loosing agricultural land or grazing, housing, and other income-generating activities results in food insecurity, affecting mental and emotional well-being", FGD2 participant 3.

"We evicted from our farmland during the Ethiopian Prime Minister Meles Zenaw Administration period; in the year 2003/2011", FGD3 participant 1. "Due to the eviction, we lost our agricultural/ farmland and grazing land for the condominium housing programme and urban expansion", FGD6 participant 1.

"We faced several problems: We were displaced from our land and house without our agreement and arrangement of preconditions for us. As a result of displacement, today, we purchase everything for our consumption from the market as any urban people. We are challenged to provide sufficient food, appropriate clothing, and other care for our children", FGD1 participant 1.

Participants in the FGDs reported a significant decline in their household income and economic stability after evictions, leading to increased food insecurity, loss of assets and dependence on external aid. The loss of their agricultural livelihoods and the lack of alternative employment opportunities have contributed to their economic challenges and deprivation.

Participants expressed their feelings as follows:

"Since we were displaced; our family's income situation has declined dramatically from time to time, which has resulted in the local community being exposed to hunger in the process" - P1. "As is well known, there is no conventional work outside of agriculture. Our land has been taken away from us so that we cannot do agriculture. Unemployment is a great challenge, and our income is much lower than before" - P5. "Rising food and energy prices have resulted in acute poverty in our communities. Food instability is further compounded by supply-chain disruptions resulting from this eviction and the loss of agricultural land" - P3.

The forced eviction and loss of land had severe consequences for the Peri-urban farming households. They lost their primary sources of livelihood, including agricultural land, grazing land, and other assets. This led to a disruption of their way of life, a loss of income, and an inability to support their families, particularly in terms of education, food and employment opportunities.

Participant 1 expressed the devastating impact of the loss of land on their livelihoods:

"Our lives are suffering as a result of displacement in many ways. For example, we cannot provide our children with the education they need today, and our animals perished due to the lack of hay and grazing grounds. Our lives have completely fallen apart, and we are sad; we are unable to provide our children with employment opportunities because there is no conventional work outside agriculture, our land has been taken away from us so that we cannot do agriculture" [FGD #8].

ii. Challenges in Transitioning to Non-agricultural Livelihoods

Participants struggled to transition to non-agricultural livelihoods due to a lack of education, skills, and experience in urban economic activities. They expressed the need for targeted training and support to develop the skills necessary for alternative employment and entrepreneurship. The inability to find suitable jobs has caused further economic hardship and social challenges for displaced households.

The FGD participants mentioned:

"It is very difficult to transition to new livelihood activities, because a farmer needs education to start a non-farming business or he has to have experience starting a new business, and they do not have the skills to do so" - P1.

"In contrast to conventional farming, non-agricultural urban activities require various skill sets. We need to change to accommodate new economic sectors, including manufacturing, services, and small businesses. It becomes essential for a smooth transition to acquire the abilities necessary for these activities. However, all households may not have the means or access to training programmes necessary to pick up these abilities" - P5.

"Even not getting a job since we were evicted, some of our families are falling on the streets and begging, others have migrated to another region where is unknown, others have their marriages broken up because of land taken away from them and lack of livelihood arose" - P1.

Further, the participants expressed as follows:

"As we told you that our base of living is farming and cattle rearing, until we evicted from our land the sources of our revenue were agriculture products, today this income ceased, and we forced to inferior job as daily labourer."

"Our life is strongly associated with agricultural land; during our removal from our land, which is a source of our income without any precondition, families suffered was inevitable." - P4.

"We evicted people have experienced the skill of farming land and related activities overtime, so we have a strong interest and demand for the work we have experienced for years and competing in other sectors of activity is not feasible for displaced community" P2.

"After the incidence of displacement, the government promised to arrange a job opportunity for victims. However, the government did not respect what he promised" P1.

"The displacement affects every member of the family; it is clear that the youth is one of the vulnerable groups in the community. However, there is no significant and meaningful support on training which motivates youth in creating employment opportunities and business creation skills to secure their live" P2.

iii. Inadequate Compensation and Resettlement

The participants expressed their dissatisfaction with the compensation they received for the lost farmland, describing it as "very modest" and "insufficient". They felt that compensation was inadequate to purchase replacement land or housing. Some participants suggested that in-kind compensation, such as housing or business opportunities, would be more beneficial.

The FGD participants from Woreda 2, 6 and 14 of Lemmi Kura sub-city explained their dissatisfaction regarding the compensation for the expropriated farmland.

They said,

"The compensation was 3.70 birr per square meter of farmland and 1.5 birr per square meter for grazing was paid for the evicted farmers. However, as the soon as new administrative government came into power, it provided us with a condominium for housing as an inkind compensation. Elders and ultra-poor people received some monthly financial support to help them recover from this displacement" - P2.

They also said:

"They are not satisfied with the compensation. During the compensation processing, there were many corruptions to be selected for these compensations" - P3.

They also showed their preference as follows;

"Rather than financial support it is good, if they give in-kind for like housing and other business shopping centres" - P3.

Furthermore, they expressed

"We lost our farming land and grazing land, which is our sources of live; we are forced to lead miserable lives purchasing from the market for our consumption"-P3.

"When we were displaced, the government promised us long-term support from our pen, but in practice the promises were not fulfilled, we were lied to" P5.

"Absolutely there is no satisfaction, we lost our property, our families dispersed, we have no sufficient income to properly lead our families, and there is no job opportunity for us and our families. Totally in the post-eviction period our live standard has deteriorated and worsen" P1.

The compensation received by the participants was inadequate and did not match the value of the lost land and assets. Compensation was not distributed equally among all family members and children were not compensated. The participants were unhappy with the compensation process, which lacked transparency and fairness.

Participant 2 noted the inadequacy of the compensation:

"Yes, for which we paid a negligible and useless amount. The amount actually varies from person to person and ranges from 3 to 28 Birr per square meter. The largest payment made to a household was 200,000 Birr. We lost a variety of plants, buildings, grazing land, and farming land as a result of eviction" [FGD #8].

Participants preferred in-kind compensation options, such as providing replacement land or assets, over monetary compensation, which was insufficient to purchase replacement and or assets.

iv. Disruption of Social Networks and Community Cohesion

Forced evictions disrupted social networks and community cohesion, leading to dispersion of neighbours and weakening of mutual support systems. Participants expressed loss of belonging and breakdown of family and community structures, which had previously provided a safety net.

Participants in the FGD reiterated the effect of urban expansion on their social networks as follows. *"The displacement has led to the breakdown of social networks and community structures, making it difficult for us to support each other"* - P4. *"Our community has been scattered, and we have lost the sense of belonging and mutual support that we once had"* - P5. *"Displacement has caused many social problems, including the breakdown of family structures and community networks. People who used to live together and support each other are now scattered and isolated"* - P6.

However, a participant from FGDs stated that they still maintained their traditional support system. He said, *"Even though the strength is not as pre-eviction period, still our togetherness is not collapsed. In this social network or the so-called "Afosha" we support each other in funerals, and similar social issues when necessary"* P4.

On the other hand, another FGD participant described their current social network as follows: *"After we removed from our land, we not only lost our social network, but also our entire life is affected. The previous productive and hard-working people sit down without any job. As a consequence of the displacement, a significant number of community members separated from their families and friends, and now, we don't know where they are today."* P2.

The forced eviction and displacement of the Peri-urban farming communities led to the disruption of their social networks, community cohesion, and support systems. Families were separated, and close relationships within the community were broken. Participant 5 highlighted the breakdown of social networks: *"The main problems that we may list as proof are as follows: the long-term residents of the area, the aboriginal people, were driven out, and their whereabouts are unknown. Some have experienced health problems, while others have plunged into deep poverty and rage. An individual tried to shoot himself with a gun out of anger over the eviction, failing to see what was happening"* [FGD #10].

v. Impact of Urbanisation on the Culture of the Indigenous Community

Participants expressed concerns about the erosion of their cultural heritage, traditional practices, and language due to urban expansion and forced evictions. They felt that the younger generation was losing touch with their cultural identity and adopting more urban-centric lifestyles, leading to a breakdown in intergenerational transmission of cultural knowledge and values.

The FGD participants said: *"The old Oromo culture is no longer there; it has deteriorated greatly; people no longer respect one another; our culture and language are being lost; people used to uphold morality and bestow blessings upon one another; the current generation may remember these customs, but they are lost to the invasion of non-Oromo cultures"* - P1.

"Our ancestral Oromo cultural heritage and traditional practices are being eroded due to urban expansion and forced evictions" - P1. *"The elders adhere to their norms and cultural heritage like Malka and Irrecha, but the young people are on the way to lose their cultural heritage and exercise urban style of culture."*

The forced eviction and displacement of the Peri-urban farming communities led to the erosion of their cultural identity and traditions. Participants expressed the struggle to maintain their cultural heritage and identity in the face of urban expansion and forced eviction.

Participant 6 noted the erosion of cultural practices: *"While we are attempting to carry on our culture and values to future generations, we are being oppressed by people from other places. Our old culture is fading away, and we are struggling to maintain our morality"* - FGD #8, Participant 6.

vi. Lack of land tenure security and vulnerability to land-grabbing

Participants in the FGD expressed a lack of security in land tenure and vulnerability to land grabbing, which they attributed to the absence of clear and enforceable land policies. They described instances of powerful entities forcibly taking their land without negotiation or due process, facilitated by corruption and a lack of transparency in land administration. This has left the Peri-urban communities defenceless against the encroachment of their land rights.

The participants mentioned that *"after more than a week of discussions, the people in power forced us to give up the land without negotiating; they threatened us and said if you want to sit peacefully, you will rest and keep your mouth shut. They also threatened other people and took them away with force. All this results from lack or absence of clear land tenure policies"* - P2.

Another participant said: *"Corruption has a major impact on the land access procedure in urban Peri. Openness, the rule of law, and corruption are still prevalent. The process of making land accessible is convoluted, opaque, and bureaucratic. The issues faced by Peri-urban people stem from unethical tactics in land transactions"* - P2.

Furthermore, *"According to the existing land policy in Ethiopia, the ownership of land is the government and the people at large, especially the farming society. However, practically this ownership was denied during the expansion of urbanisation, as farming people did not have any right to decide on their property"* - P6.

"The illegal action taken showed us that the absence of a strong land policy or a toothless land tenure policy does not protect us from looting our land" P5.

"The expansion and development of urbanisation demanded land from the adjacent (neighbouring) part of the city. By covering this intense demand for land resources, an unfair

or informal land invasion results from the lack of commitment of the institution responsible for serving as a medium. This institutional weakness opens the spaces for those land looters"- P2.

This study provides crucial insights into the devastating economic consequences of urban expansion on peri-urban households, particularly those reliant on agriculture. Through focus group discussions with displaced individuals, the research reveals a profound loss of livelihoods, income, and assets due to the expropriation of agricultural land. The forced eviction and disruption of traditional farming practices have led to severe food insecurity, increased poverty, and dependence on external aid. The inability of these households to transition to non-agricultural livelihoods, due to a lack of relevant education and skills, has exacerbated their economic challenges. Furthermore, the inadequate and often unfair compensation provided by the government has failed to sufficiently support these communities in rebuilding their lives.

4.8 Impact of Forced Eviction on Household Food Security of Peri-urban Farmers

4.8.1 Households' food security before and after eviction

Food security is a critical aspect of human well-being, which includes the availability, accessibility, and use of nutritious food that supports a healthy and active lifestyle. This section examines the impact of land expropriation on household food security in the Lemmi Kura sub-city, Addis Ababa. The analysis is based on data collected from 223 displaced households, assessing their food security status before and after eviction.

The research employed a survey methodology, focussing on key indicators of food security, which include adequate meal quality, healthiness and variety of food, frequency of meals, food production, and affordability. The responses of the households were classified into five levels of food security: 1) severely food insecure, 2) food insecure,

3) Fairly food secure, 4) Good food secure, and 5) Fully food secure. The data collected was then analysed to determine the change in food security levels before and after eviction.

The findings of Table 4.8 clearly illustrate a dramatic decline in food security among displaced households after eviction. Before eviction, a substantial majority (80.27%) of households were food secure, with 66.37% being fully food secure. This changed drastically after eviction, with the mean level of food security falling to 8.07%.

Table 4.8 : Household-level of food security after and before eviction (n=223).

Level of household food security	Before Eviction (Percent of HH)	After eviction (Percent of HH)
Severely food insecure	2.24	79.82
Food Insecure	2.69	7.17
Fairly food secure	14.80	4.93
Good food secure	13.90	1.79
Fully food secure	66.37	6.28
Total	100.00	100.00

Source: Own survey (2024).

Before eviction, approximately 80.27% of the respondents were at a good or fully food secured level, fulfilling all food security indicators. However, after eviction, about 79.82% of the respondents fell into the category of severely food insecure, not meeting any of the food security indicators.

The substantial decrease in food security after eviction highlights the severe consequences of land expropriation on the livelihoods of households in the Lemi Kura

sub-city. The loss of agricultural land, which was a main source of food production and income, resulted in reduced meal adequacy, reduced variety and healthiness of food, and decreased frequency of meals.

The results of this research show that eviction not only disrupted households' ability to produce their own food but also limited their financial capacity to purchase adequate and nutritious food. This research confirms the significant change in food security levels, where nearly 87% of households became food insecure after eviction.

The study underscores the critical impact of land expropriation on household food security in the Lemmi Kura sub-city. The displacement led to a drastic decline in food security levels and most households became food insecure. Policymakers must consider the severe implications of such actions on the well-being of affected communities and develop strategies to mitigate these adverse effects. Ensuring access to alternative livelihoods and food sources for displaced households is essential to improve food security and overall well-being.

4.8.2 Indicators of food security

Urban expansion and the resulting eviction of peri-urban households have profound implications for food security and access to nutritious diets. This section examines the dramatic changes in households' ability to produce and afford sufficient food following displacement. The section interprets the detailed data on evicted household food security in the Lemmi Kura sub-city, Addis Ababa, focussing on various indicators and comparing the "before" and "after eviction" cases. The indicators assessed include the ability to eat enough food throughout the year, the consumption of adequate variety of food, the number of meals per day, the access to healthy and nutritious food, the production of

enough food, and the affordability to buy food when its own production is insufficient.

Table 4.9 shows household food security index “before” and “after” eviction.

Table 4.9: Comparative food security index before and after eviction

Food Security Indicator	Before Eviction (1=100%)	After Eviction (0= 0%)
Household able to eat sufficient food throughout the year	0.9327	0.1256
Eat enough or adequate variety of food throughout the year.	0.8520	0.1166
Number of meals per day	1.0000	0.8789
Have access to sufficient healthy and nutritious food throughout the year.	0.8341	0.0807
Produce enough food for a family that would be enough throughout the year.	0.9013	0.1121
Afford to buy enough food if own farm produce is not enough.	0.7758	0.1076
Mean level of total food security index	0.9288	0.3974

Source: Own survey (2024)

The data provided in Table 4.9 offer a comparative analysis of food security levels before and after eviction. The mean levels of food security across different indicators are summarised as follows.

Urban expansion-driven evictions have an overwhelmingly negative effect on household food security indicators. The data in Table 4.9 show that evicted households suffer dramatic declines in every measured dimension of food security. Before eviction, peri-urban households in Lemmi Kura, Addis Ababa, were nearly self-sufficient: mean scores on most indicators exceeded 0.85 (on a scale where 1.0 represents full sufficiency). After eviction, however, these scores collapse to roughly 0.1–0.12 (except for number of meals), indicating near-total loss of food security in practical terms. Eviction has deprived families of the land, water, and other resources they depend on to produce or purchase food (UN

Habitat & UN Human Right, 2014). In human-rights terms, such forced displacement can directly cause hunger and malnutrition by cutting off people's access to the means of food procurement (UN Habitat & UN Human Right, 2014). The findings reflect precisely this: evicted households can no longer grow enough food, nor have the income to buy sufficient food, so all key food security metrics plummet. This underscores warnings in the literature that loss of land undermines all four pillars of food security (availability, access, utilization, stability) for rural farming communities (UN Habitat & UN Human Right, 2014).

- Sufficiency of food year-round: The score fell from 0.9327 to 0.1256. Before eviction almost all households could eat enough food year-round, whereas after eviction only about 12.6% (relative) achieve that. This indicates a near collapse in food availability. Forced evictions sever families from their own food production (gardening, farming) and cut incomes, making year-round sufficiency impossible (UN Habitat & UN Human Right, 2014).
- Adequate food variety: The score dropped from 0.8520 to 0.1166. Prior to eviction, households regularly had a diverse, adequate diet; after eviction, fewer than 12% maintain even a minimally varied diet. This reflects a sharp reduction in diet quality. Loss of land and income means families now rely on fewer low-cost staples, threatening nutritional adequacy (a key "utilization" dimension) (UN Habitat & UN Human Right, 2014)
- Number of meals per day: The score decreased from 1.0000 (indicative of three meals daily) to 0.8789 (roughly 88% of that frequency). In practical terms, households went from consistently having three meals to often only two. Although this drop is less drastic than other indicators, it still signals meal-skipping or reduced portions after eviction. In food security literature, maintaining meal

frequency is often a coping strategy, but here the slight decline (to about 2.6 meals) still reflects resource strain.

- Access to nutritious foods: The score plunged from 0.8341 to 0.0807. Before eviction, households had fairly good access to healthy and nutritious foods throughout the year; after eviction, virtually none do. This highlights that eviction severely impacts the availability and utilization dimensions – families simply cannot obtain fruits, vegetables, or protein-rich foods. Nutrition studies emphasize that loss of purchasing power or garden plots leads to diet of poor quality, causing hunger and malnutrition (UN Habitat & UN Human Right, 2014).
- Own food production: The score fell from 0.9013 to 0.1121. Nearly all households were self-sufficient pre-eviction, but post-eviction, only about 11% retain any meaningful food production. Essentially, evicted families lose their farms or gardens and can no longer grow food to feed their families. This aligns with the finding that eviction deprives people of the land/resources needed to produce food (UN Habitat & UN Human Right, 2014).
- Affordability of food when production is insufficient: The score collapsed from 0.7758 to 0.1076. Previously, households generally had enough income to buy food in shortfall years; after eviction, virtually none can afford this. This reflects the loss of income and assets. In food security terms, it shows that evicted households become unable to purchase food to meet even basic needs. Economic analyses of displacement note that when livelihoods are destroyed, purchasing power vanishes, trapping families in chronic food insecurity (UN Habitat & UN Human Right, 2014).

Overall, the mean food security index plunged from 0.9288 before eviction to 0.3974 after eviction. This extreme decline confirms that urban eviction has pervasive impacts on food

availability and access. The results mirror broader findings in the literature: urban eviction of farming households undermines all four pillars of food security (Gnamura, Antwi, & Abenet, 2024). Losing land and stable income sources forces families into food poverty. Numerous studies warn of this outcome in fast-growing cities (e.g., Adam 2014; Tura 2018) and advocate for interventions. The literature on displacement emphasizes that without remedial measures (compensation, alternative livelihoods, and social assistance), displaced families fall into hunger (UN Habitat & UN Human Right, 2014).

These findings point to an urgent policy imperative. The data clearly show that eviction triggers a food security crisis. Consistent with human-rights and development analyses, targeted interventions are needed to protect the food security of displaced households (UN Habitat & UN Human Right, 2014). Possible responses include ensuring land tenure or providing replacement farmland, extending food aid or cash transfers to evicted families, and preserving peri-urban agricultural programs. In line with guidelines, states should prevent evictions that endanger the right to food and implement supportive measures for those already displaced. As our data indicate, any urbanization plan must be accompanied by compensatory policies to maintain food access, protecting agricultural land and supporting displaced farming communities is key to avoiding the dramatic post-eviction food deficits observed here (UN Habitat & UN Human Right, 2014).

The above analysis provides compelling evidence of the significant negative impact of eviction on household food security in the Lemi Kura sub-city. The decline in all food security indicators after eviction highlights the need for urgent policy interventions to support displaced families. Strategies to improve access to food, enhance food production capacities, and provide financial support are essential to mitigate the adverse effects of land expropriation on food security.

The data in Table 4.9 show that the loss of agricultural land and assets significantly impacted the food security of displaced households, leading to food insecurity and dependence on market purchases for their food needs.

Historically, the farming communities in Lemmi Kura sub city of Addis Ababa had the autonomy to choose their food and drink, which also allowed them to support others within their community. This self-sufficiency led to a secure food environment. However, the current shift towards purchasing all food items has compromised this food security, putting current food security at risk (P5).

Before evictions, the farming communities of the research area were largely self-reliant, providing mutual assistance even when not all members were food insecure. Posteviction, they have become dependent on external support, reflecting a significant change in their ability to support themselves (P8).

According to a key informant of this research, several factors contribute to food insecurity in peri-urban areas, such as lack of innovation and subsequent unemployment, loss of agricultural land, loss of assets during evictions, and displacement of livestock due to urbanisation. Reduced agricultural land directly decreases food production capacity, jeopardising food security (P1).

The ownership of agricultural land is crucial to producing a variety of crops that ensure food security. The loss of this land prevents people from guaranteeing their own food supply, thereby endangering their livelihoods (P1). The confiscation of agricultural land has led to a significant loss of livelihood and assets. Without land, individuals cannot raise livestock or grow crops, exacerbating their challenges to economic and food security (P4). Evicted households in the peri-urban areas are currently facing severe food crises. These

crises manifest themselves as unstable access to adequate and healthy food, financial difficulties, and other related challenges (P3).

After being displaced from their land, villagers often face unemployment or are forced to work in informal employment. This transition results in a substantial decrease in income and an increase in malnutrition due to reduced food availability (P5). Households that have not been evicted can harvest crops from their land, thus enjoying more reliable food security. In contrast, evicted households face increased food insecurity, lacking the means to produce their own food (P2).

4.8.3 Determinants of Household Food Security

Research objective 5: Investigate the food security of peri-urban farmers, considering the implications of land grabbing and agricultural land loss.

- H_0 : There is no significant effect of urban expansion and forced evictions including land grabbing and agricultural land loss on the food security of peri-urban farmers.
- H_1 : Urban expansion and forced evictions leading to land grabbing and agricultural land loss has significantly affect the food security of peri-urban farmers.

The research question assessed in this section was: What is the significance of urbanisation-induced displacement on the food security status of peri-urban farming households?

The hypotheses tested were as follows: 1)The food security status of the evicted and nonevicted households is the same, and 2) eviction has no significant negative impact on the food security of evicted households.

The results in Annex 15 show that the sample group of the non-evicted households attracted a higher mean of 301.28 than that of the sample group of the evicted

households of 145.72 concerning the food security status. This implies that on average, non-evicted households have higher food security levels than evicted households.

The results in Annex 16 of the Mann-Whitney U test also show a significant difference in food security levels between evicted and non-evicted households. Therefore, we have strong evidence to reject the null hypothesis. Specifically, The U value of 7519.000, combined with a Wilcoxon W value of 32495.000, shows that there is a significant difference between the two groups. The Z-value of -13.703 and the p-value of .000 (which is less than the commonly used alpha level of 0.05) indicate that the observed difference in food security between evicted and non-evicted households is statistically significant. The effect size was 0.6489, which implies that the effect of eviction on household food security is very high. Therefore, the null hypothesis is rejected. The evicted and non-evicted households have different household food security levels.

The following section discusses logistics regression analysis to assess the determinants of household food security from the perspective of a sustainable livelihood security framework and in relation to the impact of urban eviction of peri-urban farmers. Logistic regression is a powerful statistical technique used to predict the outcome of a categorical dependent variable based on one or more predictor variables (Menard, 2002; Sperandei, 2014).

This analysis aimed to identify the key factors that influence food security, represented by the dichotomous variable "Food Security Level", using a variety of sustainable livelihood security indicators.

In this perspective, Annex 17 shows that the initial model, which includes only the constant term, exhibits an overall classification accuracy of 56.3%. It correctly identifies all nonfood-secured cases but fails to identify any food-secured cases. This model serves as a baseline to assess the improvement achieved by adding predictor variables.

Annex 18 shows the refined model that achieves an overall classification accuracy of 87.9%, with 90.8% accuracy in predicting Not-food-secured cases and 84.1% accuracy in predicting Food-Secured cases. This marked improvement highlights the efficacy of predictor variables in distinguishing between food-secure and food-insecure households.

As shown in Annex 19, the inclusion of predictor variables significantly enhances the performance of the model, as indicated by the Omnibus Model Coefficient Tests (Chisquare = 358.100, df = 17, $p < .001$).

The Hosmer and Lemeshow test (Chi-square = 10.724, df = 8, $p = .218$) displayed in Annex 20 suggests that the model fits the data well, as the p value is greater than .05, indicating that there are no significant differences between the observed and predicted outcomes.

Annex 21 shows that the -2 Log likelihood value decreases to 253.137, suggesting a better fit. The Cox & Snell R square (.552) and Nagelkerke R square (.740) values indicate that the model explains a substantial portion of the variance in the food security status.

Table 4.10 summarises the key results from the logistic regression analysis on the impacts of independent variables on household food security in the perspective of sustainable livelihood security framework and urbanisation-induced eviction of the peri-urban farmers.

Table 4.10: Explanatory variables influencing food security of evicted peri-urban farming households

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Eviction category(1)	-2.717	.627	18.790	1	0.000***	0.066	0.019	0.226
Gender Household Head	-0.398	0.485	0.672	1	0.412	0.672	0.259	1.740

Age Category	-0.660	0.448	2.169	1	0.141	0.517	0.215	1.244
Family size category	-0.340	0.354	0.924	1	0.336	0.712	0.356	1.423
Family member engaged	-0.026	0.396	0.004	1	0.947	0.974	0.448	2.115
Marital Status Category	0.217	0.498	0.190	1	0.663	1.242	0.468	3.295
Wife Educational Level	0.988	0.508	3.783	1	0.052	2.687	0.992	7.274
Household Head Educational Level	0.523	0.419	1.558	1	0.212	1.686	0.742	3.832
Economic Security	0.327	0.334	0.960	1	0.327	1.387	0.721	2.671
Social Security	0.928	0.372	6.236	1	0.013	2.530	1.221	5.241
Land Security	0.938	0.364	6.643	1	0.010*	2.555	1.252	5.213
Physical Capital Security	-0.200	0.466	0.184	1	0.668	0.819	0.329	2.041
Human Security	0.179	0.229	0.614	1	0.433	1.197	0.764	1.875
Infrastructural Service Access Security	-0.267	0.417	0.411	1	0.522	0.765	0.338	1.733
ICT Security	-1.018	0.450	5.127	1	0.024	0.361	0.150	0.872
SLSI coded	3.281	.499	43.190	1	0.000***	26.606	10.000	70.789
Expropriated total farmland	-0.078	0.139	0.311	1	0.577	0.925	0.704	1.216
Constant	-0.697	0.744	0.876	1	0.349	0.498		

Source: Own data survey (2024) generated using SPSS 29.

NB: *** Significant at 1% and * significant at 10% level

In Table 4.10, the logistic regression analysis identifies several key predictors of food security among households. In particular, eviction status, social security, land security, ICT security, and SLSI scores emerge as significant factors. These findings underscore the multifaceted nature of food security, influenced by socioeconomic, educational, and infrastructural dimensions. Policy makers and practitioners should consider these variables when designing interventions to improve food security in vulnerable populations. The logistic regression output provides insights into the significance and impact of each predictor variable on food security as follows:

Eviction and Food Security

The logistic results show that evicted households are vastly less likely to be food-secure (OR=0.066, $p < 0.001$). In practical terms, evicted households have only about 6.6% of the odds of having food security compared to non-evicted ones. This extremely low odds ratio implies that eviction can “drastically reduce” food security, consistent with displacement literature. Forced evictions remove people from their land and livelihoods, a process known to trigger hunger and malnutrition (UN Habitat & UN Human Right, 2014). International human-rights guidance explicitly warns that evictions disrupt people’s access to land, water and other resources needed for food production. In other words, eviction severs the means by which households produce or purchase food, and empirical cases confirm widespread food insecurity following eviction events. This finding highlights the acute vulnerability of displaced households and accords with studies (e.g. Cernea 1997; OHCHR 2014) showing eviction as a major risk factor for hunger.

Women’s Education and Food Security

Households where the wife has higher education show about 2.69 times greater odds of food security (OR=2.687, $p = 0.052$). Though marginally above the standard significance cutoff, this effect fits with extensive evidence that women’s education strongly improves household nutrition and food access. For example, a recent study in Ethiopia found that women’s formal education is significantly associated with higher household food security (Hiruy, Barden-O’Fallon, Mitiku, et al., 2023). Educated women tend to have better health and nutritional knowledge, stronger decision-making power, and more stable incomes, all of which translate into better food outcomes. Global analyses repeatedly note that each additional year of maternal schooling reduces child stunting and increases food security. Therefore, the large coefficient (OR \approx 2.7) supports the conclusion that female education is a critical determinant of food security. This implies a need for policies and programs (e.g. adult literacy, female

schooling initiatives) that increase women's education as a long-term strategy to strengthen food security.

Social Protection and Food Security

The social-security index is also a strong predictor: households with higher social protection scores have roughly 2.53 times the odds of being food-secure (OR=2.530, p=0.013). This effect underlines the vital role of social safety nets. Meta-analyses of cash transfer programs in developing countries find that social protection significantly boosts food consumption and nutrition (e.g. 13% higher food expenditures and 8% more calories on average). In Ethiopia specifically, social assistance (such as food aid or cash support) has been shown to raise food security levels among beneficiaries. Thus, the researcher's study result that better social security is linked to higher food security is well supported. It indicates that effective social-protection programs (subsidies, insurance, transfers) can double or more the odds of avoiding hunger. From a policy perspective, this finding argues for expanding and targeting social protection measures to vulnerable groups as a means to improve food security outcomes.

Land Tenure Security and Food Security

Greater land security (secure access to land) is associated with about 2.55 times higher odds of food security (OR=2.555, p=0.010). Secure land tenure provides the foundation for stable food production: when households are confident in their land rights, they invest in the land and cultivate crops, directly enhancing food availability. The literature on land rights and food access concurs that tenure security is a bedrock of food stability. Indeed, human-rights bodies note that forced evictions deprive people of the land and resources they depend on for food, causing hunger (UN Habitat & UN Human Right, 2014). Empirical studies in agriculture development consistently find that secure landholders achieve higher crop yields and nutritional outcomes. In sum, the researcher's significant coefficient reinforces the

importance of secure land and tenure policies: protecting smallholders' land rights is crucial for ensuring that families can grow and access food.

Human Capital and Food Security

The effect of the human security index is positive but not significant (OR=1.197, $p=0.433$). Human capital, encompassing health, skills, and education, is theoretically important for food security because a healthier, more educated household can work more effectively and utilize other resources better. While the researcher's study result coefficient suggests about a 20% increase in odds, the lack of statistical significance means we interpret it cautiously. Nonetheless, this aligns with broader theory: DFID identifies human capital (knowledge, health, labor ability) as a key livelihood asset (DFID, 1999). Many studies find that better family health and parental education improve food outcomes, even if we did not detect a strong effect here. The non-significant result may reflect limited variation or collinearity with other variables. Still, it emphasizes that promoting overall human development, good health services, schooling, and skills training, remains part of the comprehensive approach to food security.

Overall, the results imply that higher women's education, stronger social protection, and more secure land tenure are strongly linked to higher food security, in ways that literature (and human rights standards (UN Habitat & UN Human Right, 2014), would predict. Each factor points to policy levers, educating women, expanding safety nets, and protecting land rights, that literature suggests will bolster household food security.

The logistic regression coefficient for the status of eviction (Eviction Category (1)) is -2.717 with a standard error of 0.66. The Wald chi-square test yields a value of 18.790, which is highly significant ($p < 0.001$). The odds ratio (Exp (B)) is 0.066, with a 95% confidence interval ranging from 0.019 to 0.226.

The negative coefficient (-2.717) indicates an inverse relationship between eviction status and food security. Specifically, households that have experienced eviction are significantly less likely to be food secure compared to those that have not been evicted.

The odds ratio (0.066) suggests that the odds of being food secure for evicted households are 93.4% lower than for non-evicted households. In other words, evicted households have approximately 1/15th the odds of being food secure compared to non-evicted households.

The p-value (< 0.001) indicates that the relationship between eviction status and food security is highly significant, meaning the likelihood of this relationship occurring due to random chance is extremely low. This strong statistical significance underscores the robustness of the status of eviction as a predictor of food security.

The 95% confidence interval for the odds ratio (0.019 to 0.226) does not include 1, further confirming the significant impact of eviction on food security. The narrow range of the confidence interval enhances the reliability of the estimated odds ratio.

These findings underscore the importance of education, social, land, and human security in determining food security. Interestingly, eviction significantly reduces the odds of securing food, highlighting the vulnerability of evicted households.

The logistic regression model identified several predictors with significant odds ratios (Exp (B)), indicating their influence on the likelihood of achieving food security. The analysis confirms that the null hypothesis: Eviction has no significant negative impact on the food security of evicted households, is rejected. There is strong evidence to reject the null hypothesis: Eviction has no significant negative impact on the food security of evicted households.

4.9 Chapter Summary

This chapter employed logistic regression and qualitative analysis to investigate the determinants of sustainable livelihood security of farming communities in peri-urban areas of Addis Ababa and Sheger, Ethiopia. The research focuses on both urban expansion-induced displaced and non-displaced households, examining the impact of urbanisation-induced displacement on various forms of livelihood capitals that are essential for sustainable livelihoods. The analysis assesses the SLS, economic security, and food security of evicted and non-evicted households, providing insights into the significant challenges posed by urban expansion. The following chapter will synthesise the study's results, present key findings, and introduce a model for understanding the impacts of urbanisation on peri-urban livelihoods.

CHAPTER FIVE: SYNTHESIS AND DISCUSSION

5.1 Introduction

Chapter 5 is the study synthesis and discusses the study results and findings. The study's results and findings are grounded in the quantitative and qualitative data analysed in Chapter 4 and are presented in direct alignment with the study's research objectives and questions. Specifically, the results and findings address three objectives: (1) to identify the factors influencing the livelihoods of farmers living in peri-urban Addis Ababa and its surrounding areas; (2) to examine the level and importance of the impacts of urbanisation-induced household evictions on composite sustainable livelihood security, with particular attention to the economic, financial, land/natural, human, social, and physical capital assets that households mobilise within their livelihood strategies; and (3) to analyse the relationship between eviction and the sustainable livelihood asset profiles of displaced households. Based on these results and findings, a policy framework is proposed to improve the livelihoods of farming communities in peri-urban Addis Ababa and its surroundings.

5.2 Sustainable Livelihood Security: Evicted vs. Non-Evicted Households

The data of this research reveal that peri-urban households evicted for urban development have markedly lower sustainable livelihood security (SLS) than those who were not evicted. In Figure 4.1 (from Woredas in Lemmi Kura sub-city and Sheger city), non-evicted households score higher on nearly all SLS domains, economic, social, land, human capital, and food security, whereas evicted households score higher only in public infrastructure access, ICT access, and physical housing (service quarters). Statistical testing confirms this gap: the median SLS index is 0.3339 for evicted households versus 0.4275

for non-evicted (Mann–Whitney $U = 16180$, $z = 6.381$, $p < 0.001$, effect-size $r = 0.302$). In practical terms, evicted households have substantially lower SLS.

Qualitative accounts explain why: evictees lost their farm and grazing land (their main capital), were under-compensated, and lacked alternatives. As one farmer put it, “we purchase everything from the market like any urban person; we cannot feed or clothe our children”. This pattern echoes findings elsewhere. For example, Roberts & Okanya (2022) found forced evictions in Lagos sharply disrupt urban poor livelihoods. In Ethiopia, Zegeye *et al.* (2025) similarly report that land expropriation without fair compensation forces farmers into poverty and precarious jobs (Zegeye *et al.* 2025). The results of this research align with the sustainable livelihoods framework (DFID 1999): without land and assets, households lose “natural” and “physical” capital, undermining all other assets. The medium effect size ($r=0.302$) indicates this is a robust and meaningful difference, not just a statistical fluke.

5.3 Determinants of SLS (Logistic Regression)

Binary logistic regression highlights which factors predict a household being classified as “livelihood-secured.” The model (Nagelkerke $R^2 \approx 0.62$) shows eviction status is the strongest predictor. The odds ratio for being evicted is $\text{Exp}(B) \approx 0.077$ (95% CI: 0.023–0.262, $p < 0.001$). In other words, evicted households have only about 7.7% of the odds of being secure, or equivalently are ~92% less likely to have sustainable livelihoods than non-evicted ones (Gnamura, *et al.*, 2025). This enormous negative effect confirms that losing land and home is a severe livelihood shock, consistent with displacement theory (Cernea 1997) and international standards (forced evictions breach rights to food, housing, and work (UNHCR, 2014).

Other significant predictors of higher SLS include economic security ($\text{OR} \approx 2.34$, $p = 0.003$), social security ($\text{OR} \approx 16.7$, $p < 0.001$), land security ($\text{OR} \approx 5.86$, $p < 0.001$), physical capital

security (OR≈4.67, $p<0.001$), infrastructure access (OR≈6.54, $p<0.001$), ICT security (OR≈5.41, $p<0.001$), and food security (OR≈4.53, $p=0.003$). These align with livelihood theory: financially stable households (economic capital) and those with strong social networks and public support (social capital) are far more likely to maintain their livelihoods. Secured land tenure emerged as a key factor: households with guaranteed land access had ~2.6 times higher odds of food and livelihood security. In short, our model confirms that livelihood security is multi-dimensional (richly noted in DFID 1999, Scoones 1998). Crucially, even holding other factors constant, eviction itself drastically shrinks the odds of stability, underscoring policy warnings that forced displacement without mitigation inevitably erodes livelihoods (Gnamura et al. 2025, Zegeye et al., 2025). Qualitative interviews powerfully illustrate these processes. Evicted households described selling livestock and even rented service quarters from their houses just to survive, while long-time farmers could still grow and sell crops. One focus-group participant lamented: “Our agricultural income has disappeared... we were forced into inferior day labor” (FGD). Another noted that after eviction “we became dependent on begging and small scraps,” exemplifying how social safety nets and rentals (physical capital turned into income) become coping strategies. This echoes Cernea’s “impoverishment risks” (landlessness, joblessness, etc.) in development displacements. Zegeye *et al.* (2025) similarly found Ethiopian farmers who lost land reported unemployment, inflation and skill gaps, noting that diversification depended on education and compensation (Zegeye et al. 2025). In this research study, evicted households indeed lost farm-based incomes and had to piece together casual wages, rentals, and aid just to stay afloat (Gnamura et al., 2025).

The non-evicted households, by contrast, appear to retain a more balanced livelihood portfolio. Their income streams remain rooted in agriculture (crop and livestock sales had mean scores of 5.00 and 3.37 versus 0.74 and 0.66 for evictees) and semi-skilled crafts

(such as pottery: 1.06 vs 0.23). They also run small businesses and shops (0.48 vs 0.22). This indicates they kept valuable physical assets and market access that evictees lost. In short, they maintain productive diversity (“broad portfolios” in livelihoods terms) that shields them from shocks. The literature is consistent: access to land and capital enables richer livelihood strategies, whereas land loss forces households into “diversification of necessity”, resorting to low-return wage labor and aid (Gnamura et al., 2025).

The logistic model’s social predictor (16.7× odds) highlights another key insight: social capital matters enormously. Those with stronger community ties or membership in mutual-help associations (Iddir/Afosh) had far higher SLS. Focus-group respondents confirmed this: long-standing neighbours supported each other in funerals or lent tools before eviction, but eviction broke many networks. Zegeye *et al.* (2025) similarly found that social networks facilitated coping and livelihood diversification. Thus, aside from formal assets, the social fabric, friendship, networks, is an asset that fosters survival.

5.4 Economic Capital Security of Evicted vs. Non-Evicted Households

The Economic Capital Security (ECS) index and its components starkly illustrate how eviction undermines economic well-being. Statistically, the median ECS score is much lower for evicted households (significant at $p < 0.001$, Mann–Whitney $U = 20516$). Evictees’ total financial capital is roughly half that of non-evictees (ETB 109,235 vs. 218,749; about USD 5,179 vs. 10,371). These quantitative gaps are underpinned by the composition of incomes:

Farm Income: Evicted households report *very low* income from crop sales (weighted score ~0.74 vs. 5.00 for non-evicted) and livestock sales (0.66 vs. 3.37). In other words, non-evictees enjoy robust farm-based earnings, whereas evictees have almost none. This reflects the loss of farmland and herding grounds. As the researcher’s qualitative data emphasize, taking away farmland meant families can no longer grow or raise much food,

a blow to their income and food supply. The literature repeatedly documents this land-to-income link: rural and peri-urban Ethiopian households rely heavily on crop and livestock sales for income (Gnamura et al., 2025). When expropriated, households must abandon farming. This pattern matches prior studies: for example, FGD participants and Zegeye *et al.* (2025) describe the “huge loss of livelihood” when land is stripped.

Casual Wages: Conversely, evictees score higher in income from daily wage or casual labor (0.75 vs 0.52). The displaced are forced into low-paid informal jobs. In livelihoods theory, this shift is “diversification of necessity”: households compensate for lost farm income by sending members to unstable labor markets (Gnamura et al., 2025). Ethiopia’s urban employment is largely informal (World Bank 2016), so this is often precarious. Prior research in Addis Ababa notes that displaced farmers frequently end up doing daily labor with low returns (often still not enough to avoid hunger)(Zegeye et al., 2025). The key point: a higher dependence on casual wages among evictees indicates vulnerability, not prosperity.

Business and Crafts: Non-evicted households also engage more in small businesses and semi-skilled work. For example, their weighted scores for non-farm business (0.48 vs 0.22) and semi-skilled crafts (1.06 vs 0.23) are much higher. These activities, trading livestock by-products, pottery, carpentry, generate extra cash for those with sufficient assets and networks. Evicted communities have almost no score here, suggesting these opportunities collapsed after displacement. This fits evidence that non-farm enterprise requires capital, space, and stability (often lacking for uprooted farmers) (Zegeye et al., 2025).

Remittances & Pensions: Evictees receive slightly more remittance income (0.18 vs 0.12) and both groups have negligible pension income. The modest remittance support for evictees likely comes from relatives sending money as a coping strategy, consistent with

Ethiopia literature on remittances as a safety net (which, however, typically is not enough by itself).

Renting Assets: One stark difference: evictees score 1.79 from renting assets (vs 0.054 for non-evictees). This is because some evicted households have extra rooms (service quarters) near the city and rent them out. In Addis Ababa, adding rented rooms is a known informal strategy to generate income. However, this rental income is a sign of coping, not prosperity: it suggests evictees are depleting their assets. Housing analysis in Addis shows renting is common, but for these households it replaces farm income rather than signals higher welfare.

Aid and Loans: Evicted households score much higher on aid/support (0.98 vs 0.018) and slightly lower on loans. The city's safety net (ETB 2,200 monthly) and NGO support are propping up evicted families. This is expected: when households lose their livelihoods, targeted transfers become one of the few sustenance sources. International studies of urban safety-nets in Ethiopia find such transfers effectively boost food security and consumption among beneficiaries (Zegeye et al., 2025; UNHCR, 2014). The HECSI data clearly show evictees rely on aid far more than non-evictees, reflecting their high dependency after displacement. This matches Cernea's model: deprivation often leads to aid dependence.

Overall, the Household Economic Capital Security Index (HECSI) is 0.2297 for evicted vs. 0.3726 for non-evicted. Non-evictees enjoy roughly double the total economic resources. We can interpret this as two different livelihood regimes:

Non-evicted households have a mixed portfolio of farm-based and small-business incomes, supplemented by some wages and crafts, giving resilience and diversity.

Evicted households have a depleted portfolio: almost no farm income, heavy reliance on casual labor, rentals, and aid, with negligible own business. This is textbook vulnerability. These findings mirror qualitative testimonies: evictees described dramatic income losses (“income dropped drastically, now we go hungry”, FGD), sold assets to survive, and blamed inadequate compensation. The *effect size* of eviction on ECS was small ($r=0.175$) statistically, but even a small effect represents a meaningful drop given how livelihoods cluster near survival thresholds. Importantly, the difference is significant and robust, corroborated by both survey and interviews.

5.5 Impact on Economic Security (Logistic Regression)

A logistic regression on economic security (Table 4.7) reinforces the disparity. Eviction status was the only social/demographic factor with a significant effect: Evicted households have an odds ratio $\text{Exp}(B) = 0.273$ (95% CI: 0.132–0.568, $p=0.001$). Thus evicted households are about 72.7% less likely to be economically secure than non-evicted ones. In other words, even after controlling for age, family size, education, etc., eviction itself sharply lowers a household’s chance of economic stability. No other demographic variable (gender, age, family size) showed significance, underscoring that eviction, and the shocks it brings, overrides such factors.

Notably, two other predictors in Table 4.7 were significant. Physical capital security (owning assets/infrastructure) had an $\text{OR}\approx 2.36$ ($p=0.001$), and ICT access had $\text{OR}\approx 1.79$ ($p=0.013$). This suggests households with more physical assets (land, machinery, housing) and better ICT/tools were more likely to achieve economic security. This aligns with the idea that physical capital can cushion the shock of eviction. But crucially, even among households of similar age, education, or social status, being evicted remains the main discriminator. The stark coefficient for eviction parallels our earlier SLS model: forced displacement is a severe livelihood blow.

In sum, both statistical analyses and personal narratives paint a consistent picture. Evicted households in peri-urban Addis have significantly lower economic security and SLS than their non-evicted neighbors. They lose land-based incomes, sell off assets, and struggle in informal wage markets. In contrast, non-evictees manage to continue farming, run small businesses, and remain diversified. This aligns with global and local studies: forced evictions are repeatedly shown to impoverish and destabilise communities. In our context, the combination of quantitative results and qualitative voices makes it clear that urban expansion (absent protective policies) undermines the economic and food security of displaced farming families.

5.6 Impact on Food Security

5.6.1 Before and After Eviction

The contrast in food security before vs. after eviction is dramatic (Table 4.8 and 4.9). Prior to eviction, Lemmi Kura farming households were overwhelmingly food secure: about 66% were *fully food secure* and another ~14% *good secure*, meaning 80% had reliable food access. After eviction, this flips: nearly 80% are now *severely food insecure*. In one year, the mean food security index plummeted. The mean food security “score” fell from ~0.93 to ~0.40 (on a 0–1 scale), a catastrophic decline. In concrete terms, families went from normally eating three meals of varied, nutritious food year-round to frequently missing meals, eating monotonous diets, and going hungry.

The disaggregated food security indicators (Table 4.9) highlight the mechanisms:

Sufficient food availability year-round: fell from 0.933 to 0.126. Before eviction almost all families could grow or buy enough to eat, afterward almost none can guarantee year-round food. This is because eviction cut off self-production and income. International food-security research shows that losing farmland directly collapses food availability for

farming households (UNHCR, 2014). The researcher's qualitative data confirm: farmers said they "cannot do agriculture" and now "purchase everything" (FGD).

Dietary variety: fell from 0.852 to 0.117. Before, farmers had diverse gardens and fields; after, diets shrank to mostly cheap staples. This implies severe nutritional decline. Studies on food security emphasize that land loss shifts diets toward low-cost staples, undermining nutrition^[5].

Meals per day: fell from 1.000 to 0.879 (from 100% of households eating 3 meals to only 88%). This indicates modest reduction: some households started eating only 2 meals daily on average. Even this small drop reflects hardship: skipping meals is a common coping strategy when resources fall, as documented globally.

Access to healthy foods: collapsed from 0.834 to 0.081. Nearly all families had adequate nutritious food before; after eviction almost none do. This shows loss of the "utilization" pillar, diets became unhealthier due to lack of funds and homegrown produce.

Own production: dropped from 0.901 to 0.112. Nearly all households used to self-produce much of their food; after eviction virtually none do. This is direct evidence of farmland loss, evicted families no longer farm to feed themselves.

Affordability: plummeted from 0.776 to 0.108. Previously, families could supplement farm yields by buying food as needed; now they simply cannot afford to buy enough. This reflects loss of income.

Overall, the mean food security index went from 0.9288 pre-eviction to 0.3974 post-eviction (Table 4.9). These post-eviction levels are consistent with severe hunger and hunger-related suffering. The literature on displacement repeatedly warns of this outcome: without land, rural households lose both availability and access to food (UN Habitat & UN Human Right, 2014). For example, OHCHR guidance notes that eviction

“deprives people of food and livelihood”. The pattern here matches that: evicted households report swollen bellies from malnutrition, children begging, and “hunger that I never knew before losing our land” (FGD quotes).

These findings underscore that eviction is tantamount to a food security disaster for these communities. Nearly 87% of households became food-insecure after eviction, a finding that mirrors similar studies: Adam (2014) found that expropriation in Oromia was followed by sharp rises in hunger among displaced farmers.

5.6.2 Determinants of Food Security (Logistic Regression)

A logistic regression identifies which factors most influence a household’s odds of being food-secure (Table 4.10). The top predictor is again eviction status: evicted households have an odds ratio $\text{Exp}(B) = 0.066$ (95% CI 0.019–0.226, $p < 0.001$). In plain terms, an evicted household’s odds of being food-secure are only ~6.6% of a non-evictee’s. Equivalently, eviction *reduces* the odds of food security by about 93%. This matches our prevalence data: evictees became overwhelmingly food-insecure. International law recognizes this: “the right to adequate food is violated by eviction that disrupts food sources” (UNHCR, 2014).

Other significant predictors ($p < 0.05$) of higher food security include: wife’s education level ($\text{OR} \approx 2.69$, $p = 0.052$) and social security ($\text{OR} \approx 2.53$, $p = 0.013$) and land security ($\text{OR} \approx 2.56$, $p = 0.010$). That is, households where the wife is better educated are ~2.7 times more likely to be food-secure; likewise households with strong social protection nets or secure land tenure have >2.5 times higher odds. These make sense: educated women often manage household food purchases more effectively (documented in nutrition literature), and social protection (for example, cash transfers, community support) directly supports food access (for example, Ethiopia’s safety nets are known to raise consumption). Secure land, as above, allows food production, hence better food outcomes. Non-significant predictors

included head's age, household size, etc. Overall, the model (Nagelkerke $R^2 \approx 0.74$) indicates that social, educational, and infrastructure factors, along with eviction, explain much of food security.

Combining these results: the regression confirms eviction as a critical risk factor for hunger, again controlling for other variables. In practice, an evicted family has almost no chance of food security unless other factors (education, social aid, etc.) intervene. Qualitative evidence reinforces this: participants explicitly linked land loss to hunger. For instance, one said their income "declined dramatically... our community was exposed to hunger" (FGD). Others noted that without their fields, "we were forced to inferior work... our children go to bed hungry." These narratives align exactly with the statistical finding that eviction devastates food security.

5.7 Synthesis and Implications

The researcher's mixed-methods findings paint a coherent story: urban expansion and forced eviction have catastrophic impacts on peri-urban farmers' livelihood security, economic capital, and food security. Quantitatively, evicted households score far lower on SLS and ECS indices, and are statistically much more likely to be unsustainable and food-insecure than non-evicted peers. Qualitatively, evicted families describe the lived experience of these statistics: loss of land meant loss of work, income, and the ability to feed their children.

These results are well-rooted in the scholarly literature. The sustainable livelihoods framework (Scoones 1998, DFID 1999) predicts exactly this pattern: natural capital (land) loss forces households to rely on less-secure assets, increasing vulnerability. Cernea's model of involuntary resettlement (1997) identifies the same "impoverishment risks", landlessness, joblessness, food insecurity, which we observe here. The extraordinarily low

odds ratios for eviction reflect human-rights analyses: forced evictions often nullify the right to food and housing (UNHCR, 2014).

Our findings echo other Ethiopian studies: Zegeye *et al.* (2025) and Amare *et al.* (2024) both document that peri-urban expropriation without fair compensation drives farmers into poverty. They note farmers struggle with inflation, lack of skills, and broken promises of support, precisely the issues our participants raised. Likewise, Reppa *et al.* (2024) in a similar Ethiopian context found that taking farmland “upended” lives, leading to livestock sales and extreme poverty. Internationally, Roberts & Okanya (2022) in Nigeria and Cernea’s work more broadly confirm that eviction-induced urbanization destabilizes livelihoods.

One novel contribution of our analysis is the detailed mapping of *which* livelihood components change. The HECSI index and component breakdown show how evicted households recomposed their incomes: away from production toward precarious wages, rentals, and aid. This “remix” is a signature of livelihood shock. Other researchers on Ethiopian expropriation similarly observed displaced farmers turning to casual labor and struggling entrepreneurs without assets (Gnamura *et al.*, 2025).

Policy implications are clear. Without intervention, urban expansion will keep creating pockets of chronic poverty and hunger at city edges. Our data suggest that protecting land rights (or at least providing fair, in-kind compensation) is essential for food security. The strong role of social security in our models implies that urban safety nets (like Addis Ababa’s city transfer) can help cushion the blow. Importantly, affected households themselves demand alternative support: they voiced preferences for replacement land or business spaces over cash compensation. Experts recommend inclusive planning: e.g. Zegeye (2025) calls for “participatory expropriation processes, fair compensation, and

livelihood restoration” to avoid hunger. Similarly, OHCHR guidance says states must ensure no net loss of livelihoods in development evictions.

In conclusion, our mixed-methods synthesis provides robust evidence that forced eviction for urban expansion has severe negative effects on peri-urban farmers’ economic and food security. The quantitative data show large, significant declines in SLS and ECS among evictees, and the qualitative narratives explain why: lost land, broken promises, and no alternative livelihoods. The convergence of these lines of evidence with established theory and other studies underscores the validity of our conclusions. Policymakers should heed this: planned development must include concrete measures, secure land tenure, meaningful compensation, livelihood support, and social protection, if it is to avoid undermining the well-being of these vulnerable communities (UNHCR, 2014).

5.8 Model Summary

Urbanisation and its accompanying policies have far-reaching implications for peri-urban livelihoods. This complex interplay can be understood through the lenses of eviction policies and land expropriation practices and their impacts on sustainable livelihood, economic/financial stability, and food security.

Urbanisation often leads to the displacement of peri-urban communities. The forced evictions resulting from urban development projects disrupt the socio-economic fabric of the peri-urban areas. For example, in Ethiopia, peri-urban farmers face continuous evictions due to land re-development projects, which adversely affect their livelihoods (Mohammed et al., 2020). The non-integrative nature of these urban development exacerbates the situation. Corruption and mismanagement among municipal officials further aggravate the struggles of these communities (Mohammed et al., 2020).

Land expropriation is another critical factor affecting Peri-urban communities. The literature suggests that compensation mechanisms play a crucial role in determining the

sustainability of livelihoods post-expropriation. Studies in China highlight the need for fair compensation and support systems to rebuild the sustainable livelihoods of expropriated farmers (Zhang & Lu, 2011).

In Ethiopia, evidence on land expropriation's livelihood impacts underscores the need for policies that secure long-term economic stability and social protection for affected farmers (Fitawok et al., 2022).

Urbanisation affects the immediate economic conditions of Peri-urban households and has broader implications for food security. The shift from agricultural to urban land use often disrupts local food production, affecting food availability and prices. This is evident in various developing countries, where urban expansion has led to decreased food security and increased poverty (Chileshe, 2014; Szabo, 2016; He et al., 2017).

The interactions between peri-urban livelihood, urbanisation-induced eviction policies, land expropriation, and sustainable livelihood are multifaceted and deeply intertwined. Effective policy interventions must address the socio-economic challenges posed by urbanisation to ensure sustainable livelihoods, economic stability, and food security for affected communities. Figure 5.1 shows the model or framework for the interactions among Peri-Urban livelihood, urbanisation-induced eviction policy, land expropriation, sustainable livelihood, and evicted households' economic/financial and food security.

The researcher of this thesis developed the model shown in Figure 5.1, adopted from Scoones (2009) and Serrat (2008). It aims to describe the relationship between urban expansion and the livelihood security of peri-urban farmers. This framework provides a lens to analyse how the pressures of urbanisation affect the various assets that underpin the livelihoods of peri-urban farmers. Figure 5.1 depicts the urban expansion and sustainable livelihoods framework for peri-urban farmers, highlighting the key components and relationships examined in this research.

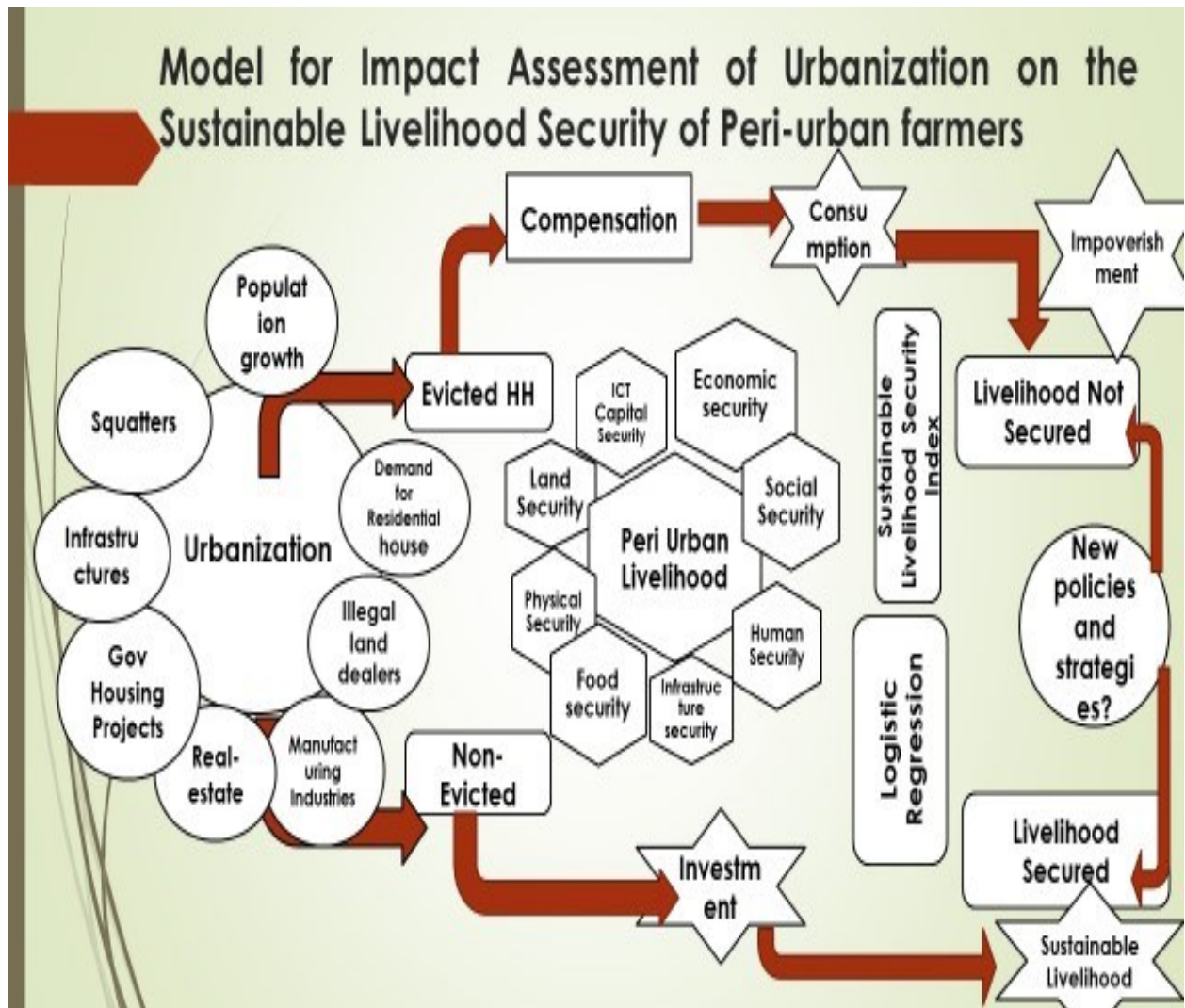


Figure 5.1 Model of the interactions among the peri-urban livelihood, urbanisation induced eviction policy, land expropriation and sustainable livelihood, economic/financial, and food security

Source: Own developed framework adopted from Scoones (2009); Serrat (2008)

The components and relationships depicted in Figure 5.1 are discussed as follows:

Drivers of Urban Expansion: Factors like government-led infrastructure development, housing projects, population growth, private real estate development, and, in Addis Ababa cases, ethno-religious land grabbing drive urban expansion into peri-urban areas. This leads to

increasing pressure for land expropriation, displacement of farmers, and conversion of agricultural lands to urban uses.

Disproportionate Impacts: The effects of land expropriation and displacement are disproportionately severe for evicted farmers compared to non-evicted farmers. Evicted farmers face total loss of land assets, often receive inadequate and unfair compensation, and struggle to adapt to non-farming livelihoods. This can lead to a poverty trap, characterized by limited access to livelihood assets, low incomes, food insecurity, and poor health outcomes.

Additional Challenges: Peri-urban farmers face a range of challenges that exacerbate their vulnerability. These include limited access to education and extension services, lack of technical and vocational skills, lack of entrepreneurship skills, and language and cultural barriers in interacting with urban dwellers.

Influence on Livelihood Assets: The combination of urbanisation pressure, land expropriation, and the additional challenges faced by peri-urban farmers has a devastating impact on their livelihood assets. Economic assets are depleted, social networks disrupted, human assets underutilised, and access to land, physical and infrastructural assets lost. This undermines food and health security, pushing many into poverty.

Adaptation and Resilience: The ability of peri-urban farmers to adapt to these pressures and build resilience depends on the availability of livelihood assets and the ability to diversify incomes. However, the cumulative challenges faced by peri-urban farmers limit their adaptive capacity, making them highly vulnerable to poverty traps.

Policy and Practice Implications: Addressing these issues requires a multifaceted approach. This includes ensuring just compensation and livelihood support for displaced farmers, providing access to education, extension services, and skills training, and

implementing inclusive urban planning that considers the needs and rights of peri-urban farmers. Advocacy for tenure security and support for collective action by farmers are also crucial.

These factors are interlinked in complex ways, with urbanisation pressures driving land expropriation and displacement, which in turn exacerbate the challenges faced by peri-urban farmers and undermine their livelihood security. Addressing these issues requires a nuanced understanding of these relationships and a commitment to pro-poor, inclusive development policies and practices.

The model in Figure 5.1 demonstrates that the Ethiopian urban expansion policy is fraught with competing and conflicting interests. It has been derived from the study's empirical results, findings, and literature review.

The three competing interests in peri-urban land are the state, the private business sector, and the indigenous farming community. This competition has led to the rapid conversion of farmland into built-up urban property. As more land is expropriated by government agents and developed by private developers, the government collects more revenues, and developers and dealers realise more profits. However, this also leads to fewer opportunities and less livelihood security for local communities in peri-urban areas. Therefore, urban spatial expansion and development programme in urban fringe areas require purposeful government intervention to accommodate the interests of all parties without conflict (Adam, 2020).

According to Adam (2014), the expansion of the urban boundary into peri-urban areas has generated a widespread sense of fear of losing land by local communities. On the contrary, urbanites or new land recipients from Peri-urban areas are provided better and thicker bundles of land rights than indigenous local Peri-urban landholders in urbanisation. Therefore, attention will need to be focused urgently on the state of the

land governance system in the transitional Peri-urban areas of Ethiopia. Two aspects of land governance problems need to be revisited: the state of land acquisition and delivery for urbanisation and the efficiency of the laws, structures, and institutions for land governance in the transitional peri-urban areas. Both aspects need reform in Ethiopia to promote sustainable and equitable urban development among all society groups.

In Ethiopia, conventional and state-controlled land lease is the only urban land acquisition method for housing and other urban development purposes. The study indicates that the government's urban land acquisition strategy puts unnecessary pressure on peri-urban land, which led to criticism for causing displacement and disruption to local peri-urban farming communities. The challenges in peri-urban areas call for policymakers, researchers, and other stakeholders to consider alternative solutions. One such solution is the implementation of land reform, which has been used internationally to address the growing demand for land due to urbanisation. Therefore, it is recommended that the Ethiopian urban land development system introduce government-led land re-adjustment to address the negative urban development practices observed in Ethiopia's peri-urban areas (Adam, 2019).

In Ethiopia, land expropriations negatively impact previous land users by reducing their production and sources of income. In Bahir Dar, one of the fastest-growing cities in Ethiopia affected farmers were compensated with an amount that only represented 37% of the value of current crop yields and their growth. The current compensation scheme does not consider the impact of inflation on crop prices and assumes constant yields, excluding crop residuals' value. We propose a viable discounted compensation framework considering crop price and yield growth. This approach will make the compensation scheme more appropriate and improve the situation for affected farmers (Admasu et al., 2019).

The challenge of urbanisation and urban management can be addressed through a proxy regional planning tool of cluster formation that focuses on the potentials of small and medium towns. Small and Medium towns represent a necessary link between the complex, sophisticated urban life and the simple, undiluted rural existence. They combine the attributes of the two space economies (Urban and Rural). The study suggests regulating urbanisation in Ethiopia by clustering settlements as a tool in urbanisation and management. The findings reveal that economic and settlement clusters can be formed within the framework of existing urban dynamism (small and medium towns) can be formed in Ethiopia. It can be a reliable instrument for stabilising settlements and sustainable urbanisation. The study recommends the deliberate dispersal of miniindustrial and commercial corridors via cluster formation as a significant instrument for deflecting the army of migrants (Alaci, 2010).

5.9 Chapter Summary

Quantitative research analysis revealed significant disparities in SLS between evicted and non-evicted peri-urban farming households. Evictions have led to a lower SLS for evicted households, indicating that forced displacement disrupts livelihood security, causing financial stress and decreased well-being. These results underscore the need to reconsider urban development policies to prioritise the rights and well-being of existing communities.

This research highlighted that the variable for the eviction category in the logistic regression model indicates that being in the eviction category (that is, being an evicted household=1) significantly decreases the likelihood of having a sustainable and secured livelihood. Specifically, the odds ratio of 0.077 indicates that evicted households are approximately 92.3% less likely to be livelihood secured than non-evicted households,

holding all other variables constant. This result rejects the null hypothesis at the 1% significance level, implying that urban expansion-induced forced eviction significantly and negatively affects the sustainable livelihood security of peri-urban farmers.

The findings of this study underscore the urgent need to reform Ethiopia's land expropriation and resettlement policies. The government must prioritise the human rights and livelihoods of affected communities, ensuring fair compensation, meaningful participation in decision-making, and adequate support for resettlement, which includes recognising and protecting the land rights of the Peri-urban farming communities, who are often disproportionately affected by displacement.

The null hypothesis tested in this sub-section was that the economic security of evicted and non-evicted households is the same (H_0 : economic security of the evicted and non-evicted households is the same). This hypothesis was rejected, confirming that there is a significant difference in economic security between evicted and non-evicted households. The findings underscore the adverse impact of eviction on household economic security and highlight the need for policies and interventions to prevent evictions and enhance the economic stability of vulnerable populations.

This study revealed a significant difference in food security levels between the evicted and non-evicted groups. The research findings strongly indicate that eviction status significantly impacts household food security. In addition, factors such as education level, social capital, land security, and human capital play a critical role in determining food security outcomes. Policymakers must address these factors to develop effective strategies to improve food security, particularly for households affected by eviction.

The study emphasises the need for urgent policy interventions to support displaced families. Policymakers must consider the severe implications of land expropriation on household food security and develop strategies to mitigate these adverse effects.

Ensuring access to alternative livelihoods and food sources for displaced households is essential to improve food security and overall well-being.

In summary, the Lemi Kura sub-city's findings are a critical reminder of safeguarding food security in the face of land expropriation and displacement. Concerted efforts are needed to address the challenges faced by displaced households and to promote sustainable food security for all.

The next chapter presents summary of the study findings, conclusions, recommendations, and limitations.

CHAPTER 6: SUMMARY OF FINDINGS, CONCLUSIONS, RECOMMENDATION, LIMITATIONS OF THE STUDY & FURTHER STUDY

This chapter concludes by summarising the study's results and findings and suggesting recommendations for potential solutions to the research problem. The chapter also concludes with recommendations for future research. The study investigated the impact of forced evictions on households' sustainable livelihood security.

6.1 Summary of Findings

Introduction: The current research provides a comprehensive analysis of data collected to evaluate the impacts of urban expansion on the livelihoods of farmers in peri-urban villages around Addis Ababa, Ethiopia. It examines demographic characteristics, the extent of land expropriation, and various factors influencing the SLS of both evicted and non-evicted households. The research also investigates the relationship between displacement and livelihood security, offering a framework for understanding the impact of urban expansion on these communities.

Demographic Characteristics and Logistic Regression Analysis: The analysis reveals that female-headed and older households are disproportionately affected by evictions. Logistic regression results highlight several significant predictors of household SLS, including economic security, social security, land security, physical capital security, human security, access to infrastructural services, ICT security, and food security. Households, being in the eviction category significantly decreases the likelihood of being a sustainable livelihood secure household, with an odds ratio of 0.077, indicating that evicted households are approximately 92.3% less likely to be secure compared to non-evicted households.

Qualitative Analysis and Thematic Insights: Qualitative data from focus group discussions and interviews with evictees highlight the severe consequences of forced eviction, including deterioration in living standards, inadequate compensation, disruption of social networks, and challenges in accessing basic services. Recurrent themes include the loss of agricultural land, insufficient compensation, erosion of trust in government authorities, and the struggle for survival. These findings emphasise the urgent need for robust land tenure policies, fair compensation mechanisms, and comprehensive support programme to mitigate the adverse effects of urban expansion. The findings of the study conclude by underscoring the importance of a more inclusive and equitable development model that respects the rights and dignity of affected communities, ensuring their livelihoods are sustained amidst urban growth.

Key Predictors and Logistic Regression Analysis: The logistic regression analysis reveals that eviction status significantly reduces the odds of being economically secure, with an odds ratio of 0.273. This indicates that evicted households are approximately 72.7% less likely to achieve economic security compared to non-evicted households. Physical capital security and access to ICT are also significant predictors, enhancing economic security with odds ratios of 2.364 and 1.791, respectively. Other demographic variables like gender, age, and marital status were not statistically significant, highlighting the critical role of eviction status and physical capital in determining economic outcomes.

Food Security Impact Analysis: The study investigates the impact of urbanisation-induced displacement on the food security of peri-urban farming households in Addis Ababa. The Mann-Whitney U test results show a marked decrease in food security among evicted households, with an average rank of 145.72 compared to 301.28 for non-evicted households. Logistic regression analysis identifies several key predictors of food security, including eviction status, social security, land security, ICT security, and the SLS

index. Eviction status emerged as a significant negative predictor, with evicted households being 93.4% less likely to be food secure compared to non-evicted households.

Pre- and Post-Eviction Food Security Comparison: The study examines changes in food security levels before and after eviction among displaced households. Before the eviction, 80.27% of households were food secure, with 66.37% being fully food secure. However, after eviction, only 8.07% of households remained food secure, and 79.82% fell into the category of highly food insecure. This dramatic decline underscores the severe impact of land expropriation on food security, as households lost their primary sources of food production and income. The findings highlight the need for policies that address the food security challenges faced by evicted households and provide support for alternative livelihoods.

Indicators of Food Security: Detailed analysis of food security indicators reveals jusnificant reductions across various measures. After eviction, households reported decreased ability to eat enough food throughout the year, reduced variety and adequacy of food, fewer meals per day, and limited access to healthy and nutritious food. The mean level of total food security dropped from 0.9288 before eviction to 0.3974 after eviction. These findings emphasise the multifaceted nature of food security, influenced by socioeconomic, educational, and infrastructural dimensions. Policymakers should consider these factors when designing interventions to improve food security among vulnerable populations, ensuring access to alternative livelihoods and food sources for displaced households.

The current research provides a detailed analysis of the severe impacts of urban expansion and forced evictions on the livelihoods, economic security, and food security of peri-urban farming communities in Addis Ababa. By identifying significant predictors of household livelihood security and highlighting the struggles faced by evicted households, the study

underscores the need for inclusive and equitable development models. The proposed policy recommendations aim to protect the rights and dignity of affected communities, ensuring their sustainable livelihoods amidst urban growth.

6.2 Conclusions

This section presents the conclusions drawn from the results and findings. The study concludes that the comparative analysis of SLS between evicted and non-evicted households in the Lemmi Kura Sub-city of Addis Ababa reveals significant disparities, underscoring the considerable impact of eviction on livelihood security. The quantitative aspect of the study confirmed that forced evictions significantly undermine the SLS of affected households, necessitating a re-evaluation of urban development policies to prioritise the well-being and rights of existing communities. For example, the key results and findings of the study highlighted that the non-evicted households have higher and better sustainable livelihood security as compared to the evicted households in the Peri-urban communities in Addis Ababa and its surrounding Sheger city of Oromia region in Ethiopia.

In other words, the results and findings showed that non-evicted households exhibited higher SLS indexes, economic, social, land and human capital security compared to evicted households. The study concludes that these results and findings are in harmony with similar findings that reported the adverse impact of evictions on the livelihood security of the affected households (Ghimire, 2015). Similarly, a study that employed the Sustainable Livelihoods Approaches in urban areas discusses the broader application of sustainable livelihoods approaches in urban settings, providing insights into how urban development policies can be tailored to support the affected households (Farrington et al., 2002).

The evidence from this research underscores the need for policies that mitigate the adverse effects of eviction and support the sustainable livelihoods of displaced populations. The study analysis revealed that urban expansion and forced eviction significantly impact the SLS of households in the peri-urban areas of Addis Ababa.

The study concludes that the results and findings reflect a substantial negative impact of urban expansion-induced forced evictions on the livelihood security of peri-urban farming households, necessitating policy interventions to mitigate these adverse effects and support sustainable livelihood strategies for affected populations. The findings reveal the profound and multifaceted impacts of urban expansion and forced eviction on affected households' SLS.

The study found that evictions disrupted households' agricultural livelihoods, causing severe negative economic and social consequences. For instance, many evictees, who were previously self-sufficient, are now compelled to purchase food and other essentials from the market, causing financial strain and exacerbating poverty.

The quantitative analysis also reflects a significant difference in economic security between the evicted and non-evicted households. Furthermore, the odds ratio analysis for eviction status is 0.273, indicating that evicted households are approximately 72.7% less likely to achieve economic security than non-evicted households, which emphasises the adverse impact of eviction on economic security, highlighting the need for policies that prevent evictions and improve the economic stability of affected households.

The study concludes that the quantitative results also indicated that non-evicted households have significantly higher food security levels than evicted households. The study results reject the null hypothesis (H_0) in favour of the alternative hypothesis (H_1), suggesting that eviction substantially negatively impacts food security. The effect size of 0.6489 further emphasises the high impact of eviction on household food security.

Furthermore, the logistic regression coefficient for the eviction status is -2.717 ($p < .001$), with an odds ratio ($\text{Exp}(B)$) of 0.066, indicating that evicted households are significantly less likely to be food secure compared to non-evicted households, highlighting the critical impact of eviction on food security and underscores the need for targeted interventions to support evicted households. These findings underscore the severe consequences of land expropriation, which disrupted the primary sources of food production and income, leading to diminished meal adequacy, reduced variety and healthy food, and decreased meal frequency. This dramatic decline in food security levels highlights the critical need for targeted interventions to support displaced households.

The study concludes that research indicators such as access to sufficient, healthy and nutritious food, production of enough food, and affordability to buy food when own production is insufficient saw significant declines. These results align with existing research that points to the detrimental effects of displacement on food security and livelihoods. The findings highlight the urgent need for policymakers to consider the severe implications of land expropriation on household food security and to develop strategies to mitigate these adverse effects. Ensuring access to alternative livelihoods and food sources for displaced households enhances food security and overall well-being.

6.3 Recommendations

6.3.1 Livelihood Security

i. Enhancing Economic Security

The study recommends that the government develop policies and mechanisms to mitigate the financial strain experienced by displaced households; it is crucial to develop targeted economic support programmes. These programmes could include grants, lowinterest loans, and microfinance initiatives to help displaced families start new

businesses or invest in alternative livelihoods. Access to credit and financial services that allow these displaced households to rebuild their economic base and achieve financial stability must be provided.

The government should diversify livelihoods through skills training programmes to help peri-urban residents diversify their income sources. It should promote non-farm economic activities suitable for peri-urban areas and consider facilitating access to microfinance and small business development support.

An inclusive economic development policy that would encourage establishing industries and businesses in peri-urban areas to create local employment opportunities is needed. The study also recommends the development of economic corridors that link peri-urban areas with urban markets and promote value addition to agricultural products from peri-urban areas.

ii. Improving Social Security

The study recommends strengthening social protection programmes and ensuring evicted households can access adequate essential services such as health care, education and housing. Community-based support systems should be encouraged to rebuild social networks and community cohesion. These support systems can include local cooperatives, social clubs, and neighborhood associations that provide mutual aid and foster a sense of belonging among displaced individuals.

The study recommends that the institution of social safety nets (SSN) extend social protection programmes to vulnerable populations in the peri-urban area. Implementing targeted poverty alleviation programmes for affected communities would be necessary. There is also a need to provide unemployment benefits and job placement services for those who lose agricultural livelihoods.

The study recommends improving social security through cultural preservation. Developing programmes to preserve and promote the cultural heritage of Peri-urban communities would go a long way toward improving the social security of evicted households. These would help integrate traditional knowledge and practices into urban expansion strategies.

iii. Securing Land Tenure and Physical Capital

Implementing policies that ensure fair and transparent land acquisition processes is also recommended, which is critical to protecting the rights of displaced households. Adequate compensation that reflects the actual value of lost properties for evicted households is needed. Intergenerational resource-based compensation mechanisms should be developed. Additionally, offering alternative land or housing options that help restore displaced families' livelihoods, including developing new housing projects or allocating unused public land for resettlement, is recommended.

The study also recommends that the government institute integrated land use planning to ensure the implementation of comprehensive land use planning that integrates urban and peri-urban areas. Designate specific zones for agricultural preservation, urban development, and mixed-use areas and ensure that planning processes are participatory, involving Peri-urban communities in decision-making.

iv. Infrastructure and Information and Communication Technology Access

Infrastructure development in Peri-urban areas would significantly improve access to essential water, sanitation, electricity and transportation services. Enhancing access to ICT is also critical, as it supports economic activities and improves information dissemination among displaced households. Programmes that provide affordable Internet access and

digital literacy training can empower these communities to leverage technology for their benefit.

Infrastructure development would ensure that basic infrastructure, such as water, electricity, and roads, is adequately extended to peri-urban areas. The public transportation links between these areas and the city centre would need to be improved. Deliberate developmental policies should facilitate the development of community facilities such as schools and health centres in peri-urban zones.

There is a need for technology integration, that is, leveraging technology for improved agricultural productivity in peri-urban areas. Geographic Information System (GIS) and remote sensing for better land use planning and monitoring are recommended, and the implementation of digital platforms for community engagement and information sharing.

6.3.2 Food Security

i. Ensuring Adequate Food Access

The study recommends that the government consider instituting food assistance programmes specifically designed for displaced households, which is essential to ensure they have access to sufficient and nutritious food. These programmes can include food vouchers, direct food distribution, and cash transfers. Community-based food security initiatives must be promoted to improve local food production and distribution, ensuring displaced families have a reliable food source.

ii. Supporting Food Production

It is also recommended that the displaced households be provided access to urban agricultural inputs such as seeds, tools, fertilisers, and training in sustainable farming practices, which help re-establish sustainable food production activities. Urban agriculture

and home gardening initiatives such as poultry farming, dairy husbandry, fattening, and honey and beekeeping should be encouraged to improve food availability and reduce dependency on market purchases.

The study recommends that the government consider implementing mechanisms and measures for climate change adaptation through developing climate-resilient infrastructure in peri-urban areas. Implementing water conservation and management strategies would also go a long way towards ensuring a sustainable supply of water for possible irrigation. In other words, the government must promote climate-smart agricultural practices.

iii. Improving Affordability

Subsidies or financial assistance programmes are needed to help displaced households afford food purchases, which include targeted subsidies for staple foods or direct financial support to cover food expenses. Implementing price control measures prevent food price inflation in areas with high displacement rates, ensuring food remains affordable for all households.

6.3.3 Compensation and Resettlement

i. Fair Compensation Practices

The study recommends that the government ensure that fair compensation and resettlement policies are in place to ensure that compensation for displaced households is fair and adequate and reflects the actual value of lost property. Compensation should cover the value of lost land and assets and include additional relocation and livelihood restoration support. Intergenerational compensation mechanisms, such as substantial shareholding in real estate and commercial buildings, should be developed and implemented. Affected communities should be actively involved in the decision-making

process related to compensation and resettlement policies to ensure their needs and preferences are considered.

Establishing transparent and fair compensation mechanisms for land acquisition is necessary, and developing comprehensive resettlement policies that ensure improved or at least equivalent living conditions for displaced communities and provide legal support and advocacy for Peri-urban residents in land transactions.

The forms of compensation should ensure the long-term sustainable livelihood security of the evicted peri-urban farmers, such as 1) a Land-for-land type of compensation and 2) Land for a substantial share in the real estate's shopping centres, residential buildings, and workshop centres.

ii. Transparent Processes

Enhancing the transparency of compensation and resettlement processes is essential to prevent corruption and ensure an equitable distribution of benefits. This is achieved by establishing clear guidelines and procedures for compensation, providing regular updates to affected communities, and ensuring that all transactions are publicly documented. Independent oversight bodies must be established to monitor compensation practices, address grievances, and hold those responsible for malpractices accountable.

6.3.4 Education and capacity building

i. Supporting Education

The study recommends that the government facilitate access to education for children from displaced households to prevent disruption in their learning. This can include providing scholarships, school supplies, and transportation to ensure children can continue their education. For adults, vocational training and skills development

programmes should be offered to help them transition to non-agricultural livelihoods. These programmes can cover a range of skills, from technical trades to entrepreneurship. The skills training programme and psychological makeup should be offered continuously without interruption. It should be a farmers' vocational skills training institute that offers long-term training programmes for evicted peri-urban farmers.

ii. Capacity Building

Training programmes that equip displaced households with the skills needed for alternative employment and entrepreneurship are crucial to survival. These programmes can include workshops, mentorship programmes, and access to online learning platforms. Community-based capacity-building initiatives should also be promoted to strengthen local resilience and self-sufficiency. These initiatives can involve training in financial management, health and nutrition, and community organising.

The study recommends that the government institute monitoring and evaluation mechanisms to establish robust systems to monitor the impacts of urban expansion on peri-urban livelihoods. Regular evaluations of intervention programmes and policies are critical, as is continuously using feedback mechanisms to improve strategies and interventions.

6.3.5 Policy and Governance

i. Inclusive Urban Development Policies

The Ethiopian government must institute urban development policies prioritising the wellbeing and rights of existing peri-urban farming communities. These policies should ensure that urban expansion plans include provisions to protect peri-urban farming households' livelihoods and food security. Participatory planning processes should be implemented, allowing affected communities a voice in urban development decisions.

The study advocates for using Peri-urban Farmers-Public-Private Partnerships (PuFPPP), encouraging the participation of Peri-urban Farmers and the private sector in Peri-urban development projects. The development of partnership models that benefit businesses and local communities must be emphasised.

ii. Preventing Forced Evictions

The government should implement legal safeguards to prevent forced evictions and protect the land rights of vulnerable populations. This can include enacting laws that require comprehensive impact assessments before any land acquisition, ensuring fair compensation and resettlement plans, and providing legal support to affected communities. Promoting participatory planning processes that involve affected communities in urban development decisions help to protect their rights and interests.

These policy recommendations aim to address the multifaceted challenges of displaced households, ensuring sustainable livelihood security and food security while promoting fair and transparent compensation and resettlement practices. By implementing these strategies, policymakers can mitigate the adverse effects of eviction and support the wellbeing of affected communities.

Grievance redressing mechanisms should be instituted at the Woreda, Sub-city, and City levels to address all citizen grievances.

6.4 Limitations of the Study

The limitations of the current study are:

- i. **Cross-sectional design:** The study does not capture the dynamic changes and long-term impacts of urban expansion due to its cross-sectional nature.
- ii. **Lack of policy evaluation:** The research does not assess the effectiveness of policies and interventions over time.

- iii. **Insufficient understanding of adaptation:** The study does not track how communities adapt to urban pressures over extended periods.
- iv. **Limited generalisability:** The findings may not be generalisable to other rapidly urbanizing contexts due to the lack of longitudinal and comparative analysis.
- v. **No future scenarios:** The study does not inform predictive models or future scenarios of urban expansion and its impacts on peri-urban communities.

Overall, the thesis presents a very strong case for the need to move beyond cross-sectional studies and undertake longitudinal research on urban expansion impacts. The researcher provides a comprehensive rationale for why such an approach is necessary, the benefits it would bring, and the limitations of current research. The recommendations are clear, well-justified, and highly relevant for academics, policymakers, and practitioners working on urbanisation, sustainable development, and peri-urban livelihoods.

6.5 Recommendations for future research

The researcher recommends a longitudinal study on the empirical analysis of the impacts of urban expansion on the livelihood sustenance of Peri-urban communities surrounding Addis Ababa City, Ethiopia, which is highly justified for several compelling reasons:

i. Capturing Dynamic Changes:

Urban expansion is an ongoing process that unfolds over time. A longitudinal study would allow the researcher to capture the dynamic nature of these changes and their evolving impacts on Peri-urban communities. It enables the observation of gradual shifts in livelihood strategies, land use patterns, and socio-economic conditions as urban areas invade peri-urban spaces.

ii. Long-term Impact Assessment:

The effects of urban expansion on livelihoods are gradual but develop over extended periods. A longitudinal approach would allow one to assess both short- and long-term impacts. It would help to understand how communities adapt to changes over time and the sustainability of these adaptations.

iii. Policy Evaluation:

Longitudinal data can provide valuable insights into the effectiveness of policies and interventions to manage urban expansion and support peri-urban livelihoods. It allows for evaluating policy outcomes over time, helping to identify successful strategies and areas needing improvement.

iv. Tracking Socio-economic Trajectories:

By following the same communities over time, the researcher can track individual and household socio-economic trajectories, providing a nuanced understanding of who benefits or loses from urban expansion.

v. Identifying Tipping Points:

A longitudinal study can help identify critical tipping points or thresholds at which urban expansion begins to impact peri-urban livelihoods, significantly informing proactive policy measures.

vi. Understanding Adaptation Strategies

Over time, communities develop various strategies to adapt to changing circumstances. A longitudinal study would allow observation and analysis of these evolving adaptation strategies.

vii. Capturing Seasonal and Cyclical Variations:

Livelihoods in Peri-urban areas often have seasonal or cyclical components. A longitudinal study can capture these variations and how they interact with urban expansion processes.

viii. Demographic Changes:

Urban expansion often leads to demographic shifts in peri-urban areas. A longitudinal study can track these changes and their implications for livelihoods.

ix. Environmental Impact Assessment:

The environmental consequences of urban expansion in peri-urban areas often manifest over extended periods. A longitudinal study allows for a comprehensive assessment of these impacts.

x. Informing Sustainable Urban Planning:

Long-term data on the impacts of urban expansion can inform more sustainable and inclusive urban planning strategies that consider the needs of Peri-urban communities.

xi. Capturing Intergenerational Effects:

A longitudinal study can reveal how urban expansion impacts different generations within Peri-urban communities, providing insights into intergenerational equity issues.

xii. Understanding Resilience

Observing communities over time allows the researcher to gain insights into factors contributing to community resilience and urban expansion pressures.

xiii. Contextualizing Rapid Changes:

Addis Ababa is one of the fastest-growing cities in Africa. A longitudinal study can contextualise this rapid growth and its implications for surrounding areas.

xiv. Comparative analysis:

Long-term data would allow for comparative analysis with other rapidly expanding urban areas, contributing to broader theories of peri-urban development.

xv. Methodological Rigour:

Longitudinal studies would provide more substantial evidence for causal relationships between urban expansion and change in livelihood, improving the reliability of the findings.

xvi. Informing Future Scenarios:

Long-term data can inform predictive models and future scenarios, helping policymakers and planners anticipate and prepare for future challenges.

A longitudinal study on this topic is well justified as it provides a comprehensive, dynamic, and nuanced understanding of the complex interactions between urban expansion and Peri-urban livelihoods. This approach can yield valuable insights for policymaking, urban planning, and sustainable development strategies in rapidly growing urban areas like Addis Ababa.

REFERENCES

1. Abadi, N., Techane, A., Tesfay, G., Maxwell, D., & Vaitla, B. (2018). The impact of remittances on household food security: A micro perspective from Tigray, Ethiopia (WIDER Working Paper 2018/40). UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2018/482-7>
2. Abagissa, J. (2019). Informal Settlements in Addis Ababa: Extent, Challenges, and Measures Taken. *Journal of Public Administration, Finance and Law*, 15.
3. Abankwah, V., Aidoo, R., Etuah, S., & Fialor, S. C. (2021). Predicting livelihood dimensions of agrarian households in small-scale mining communities of Ghana using structural equation modeling. *Journal of Agricultural Economics, Extension and Rural Development*, 9(1), 1–31.
4. Abate, M. A., & Getahun, A. A. (2025). Livelihood strategies of rural landless households in Ethiopia: Evidence from Borena district in Amhara region. **Discover Sustainability**, *6*, 1248. <https://doi.org/10.1007/s43621-025-02161-1>
5. Abeje, W. (2012). Sustainable Urban Mobility Planning for Coping Challenges of Urban Transportation in the Fast Urbanizing Ethiopia. CODATU XV: The Role of Urban Mobility in (Re) Shaping Cities CODATU, October.
6. Abo-El-Wafa, H., Yeshitela, K., & Pauleit, S. (2017). Exploring the future of rural– urban connections in sub-Saharan Africa: modelling urban expansion and its impact on food production in the Addis Ababa region. *Danish Journal of Geography*, 117(2). <https://doi.org/10.1080/00167223.2017.1350926>.
7. Abo-El-Wafa, H., Yeshitela, K., & Pauleit, S. (2018). The use of urban spatial scenario design model as a strategic planning tool for Addis Ababa. *Landscape and Urban Planning*, 180. <https://doi.org/10.1016/j.landurbplan.2017.08.004>
8. Aboh, C. (2009). Assessment of the Frequency of ICT Tools Usage by Agricultural

9. Adam, A. G. (2014). *Urbanisation and the Struggle for Land in the Peri-Urban Areas of Ethiopia*. Bahir Dar University.
10. Adam, A. G. (2019). Thinking outside the box and introducing land readjustment against the conventional urban land acquisition and delivery method in Ethiopia. *Land Use Policy*, 81. <https://doi.org/10.1016/j.landusepol.2018.11.028>
11. Adam, A. G. (2020). Understanding competing and conflicting interests for peri-urban land in Ethiopia's era of urbanisation.
12. Adams, M. (2001). Tenure security, livelihoods and sustainable land use in Southern Africa. Paper presented at the SARPN Conference on Land Reform.
13. Adell, G. (1999). Theories and models of the peri-urban interface: A changing conceptual landscape. Strategic Environmental Planning and Management for the Peri-urban Interface Research Project. Development Planning Unit, University College London.
14. Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography*, 24(3), 347-364.
15. Adhisukmawati, G. A. K. H., Handayani, I. G. A. K. R., & Karjoko, L. (2023). Fairness aspects of compensation arrangements in the acquisition of land for development for the public interest. *International Journal of Educational Research & Social Sciences*, 4(1), 186–194. <https://doi.org/10.51601/ijersc.v4i1.606>.
16. Admasu, W. F., van Passel, S., Minale, A. S., Tsegaye, E. A., Azadi, H., & Nyssen, J. (2019). Take *out* the farmer: An economic assessment of land expropriation for urban expansion in Bahir Dar, Northwest Ethiopia. *Land Use Policy*, 87. <https://doi.org/10.1016/j.landusepol.2019.104038>.
17. African Review of Economics and Finance, 6,(1). <https://doi.org/https://www.ajol.info/index.php/aref/article/view/106927>.

18. Agati, J. (2022). *The relationship between eviction, rent burden, and poor births in Kalamazoo County, Michigan* (Master's thesis, Western Michigan University, Department of Geography). *Western Michigan University ScholarWorks*. https://scholarworks.wmich.edu/masters_theses/5266 (ScholarWorks)
19. Agergaard, J., Tacoli, C., Steel, G., & Ørtenblad, S. B. (2021). Revisiting rural–urban transformations and small town development in sub-Saharan Africa. *The European Journal of Development Research*, 33(1), 1-23.
20. Agresti, A. (2013). *Categorical data analysis* (3rd ed.). Wiley. Urban Institute
21. Agresti, Alan (2019). *An introduction to categorical data analysis*. Hoboken, NJ : Wiley;2019 (3rd ed.)
22. Agudelo-Vera, C. M., Mels, A. R., Keesman, K. J., & Rijnaarts, H. H. (2012). Resource management as a key factor for sustainable urban planning. *Journal of Environmental Management*, 92(10), 2295-2303.
23. Agyeman, J., Bullard, R. D., & Evans, B. (2003). *Just sustainabilities: Development in an unequal world*. MIT press.
24. Aidoo, Robert, Etuah, Seth, & Fialor, Simon (2021). Predicting Livelihood Dimensions of Agrarian Households in Small-Scale Mining Communities of Ghana using Structural Equation Modeling. *Journal of Agricultural Economics, Extension and Rural Development: ISSN-2360-798X*, Vol. 9(1):pp,001-031, January, 2021. Copyright © 2021Spring Journals.
25. Akhere Solange Gwan and Jude Ndzifon Kimengsi (2020). Urban Expansion and the Dynamics of Farmers' Livelihoods: Evidence from Bamenda, Cameroon *Sustainability* 2020, 12(14), 5788; <https://doi.org/10.3390/su12145788>.
26. Akter, S., & Rahman, S. (2012). Investigating Livelihood Security in Poor Settlements in Bangladesh.
27. Akter, S., & Rahman, S. (2017). Investigating multiple domains of household livelihood security: Insights from urban slums in Bangladesh. PEARL: University of Plymouth

Research Outputs. *University of Plymouth.*

<https://pearl.plymouth.ac.uk/handle/10026.1/10129>

28. Alaci, D. S. A. (2010). Regulating urbanisation in Sub-Saharan Africa through cluster settlements: Lessons for urban managers in Ethiopia. *Theoretical and Empirical Researches in Urban Management*, 5(5).
29. Alamneh, T., Mada, M., & Abebe, T. (2023). Impact of urban expansion on income of evicted farmers in the peri-urban areas of Amhara Regional State, Ethiopia: Endogenous switching regression approach. *Cogent Economics & Finance*, 11(1), 2199596. <https://doi.org/10.1080/23322039.2023.2199596>
30. Alemineh, Y. T. (2018). Government strategies and implementation challenges on evicted farming households in ensuring sustainable livelihoods: The case of Gondar City–peripheral rural communities. *Public Policy and Administration Research*, 8(7), 20–26. <https://core.ac.uk/download/pdf/234670161.pdf>
31. Alemineh, Y. T. (2018). Livelihood changes, and related effects of urban expansion on urban peripheral communities: The case of Gondar City, ANRS, Ethiopia. *Journal of Poverty, Investment and Development*, 45, 50–56. <https://www.iiste.org/Journals/index.php/JPID/article/view/43506>
32. Alemu, B. Y. (2013). Expropriation, valuation and compensation practice in Ethiopia: The case of Bahir Dar city and its surroundings. *Property Management*, 31(2), 132– 158. <https://doi.org/10.1108/02637471311324606>.
33. Alkire, S. (2002). Valuing freedoms: Sen's capability approach and poverty reduction. Oxford University Press.
34. Allapurs urban cluster. *Journal of Rural Development*, 37(2). <https://doi.org/10.25175/jrd/2018/v37/i2/129703>
35. Allen, A. (2003). Environmental planning and management of the peri-urban interface: perspectives on an emerging field. *Environment and Urbanisation*, 15(1), 135-148.

36. Allison, P. D. (1982). Discrete-time methods for the analysis of event histories. *Sociological Methodology*, 13, 61–98. Statistical Horizons
37. Alonso, W. (1964). Location and land use: Toward a general theory of land rent. Harvard University Press.
38. Al-Saadi, H. (2014). Demystifying ontology and epistemology in research methods. *ResearchGate preprint/teaching paper*.
39. Anadozie, C., Fonkam, M., Cleron, J. P., & Kah, M. M. O. (2021). The impact of mobile phone use on farmers' livelihoods in post-insurgency Northeast Nigeria. *Information Development*, 37(1). <https://doi.org/10.1177/0266666919886904>
40. Andersson, K., & Ostrom, E. (2008). Analyzing decentralized resource regimes from a polycentric perspective. *Policy Sciences*, 41(1), 71-93.
41. Andrade, J. F., Cassman, K. G., Rattalino Edreira, J. I., Agus, F., Bala, A., Deng, N., & Grassini, P. (2022). Impact of urbanisation trends on production of key staple crops. *Ambio*, 51(5). <https://doi.org/10.1007/s13280-021-01674-z>
42. Angrist, J. D., & Pischke, J.-S. (2009). Mostly harmless econometrics: An empiricist's companion. Princeton University Press.
43. Anguelovski, I., Connolly, J., Masip, L., & Pearsall, H. (2018). Assessing green gentrification in historically disenfranchised neighborhoods: A longitudinal and spatial analysis of Barcelona. *Urban Geography*, 39(3), 458-491.
44. Antwi-Agyei, P., Kpenekuu, F., Hogarh, J. N., Obiri-Danso, K., Abaidoo, R. C., Jeppesen, E., & Andersen, M. N. (2019). Land use and land cover changes in the Owabi reservoir catchment, Ghana: Implications for livelihoods and management. *Geosciences (Switzerland)*, 9(7). <https://doi.org/10.3390/geosciences9070286>.
45. Arsiso, B. K., Mengistu Tsidu, G., Stoffberg, G. H., & Tadesse, T. (2018). Influence of urbanisation-driven land use/cover change on climate: The case of Addis Ababa,

- Ethiopia. *Physics and Chemistry of the Earth*, 105. <https://doi.org/10.1016/j.pce.2018.02.009>.
46. Asenahabi, B. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches*, 6(5), 76–89.
47. Asfaw Mohamed, Hailu Worku, & TebarekLika (2020). Urban and regional planning approaches for sustainable governance: The case of Addis Ababa and the surrounding area changing landscape. *City and Environment Interactions Volume 8*, November 2020, 100050.
48. Asmera Bekele Inki (2018). Impact of urban expansion on the livelihoods of the peripheral community: a case study from Holeta town, Oromia, Ethiopia. Thesis submitted to the Department of Geography and Environmental Studies, College of Social Science and Humanities, School of Graduate Studies, Arba Minch University.
49. Asmorowati, M. (2023). Compensation assessment in land procurement for public interest in providing justice. *Politics and Public Policy Journal*, 2(1), 1–12.
50. Atmowardoyo, H. (2018). Research methods in TEFL studies: Descriptive research, case study, error analysis, and R&D. *Journal of Language Teaching and Research*, 9(1), 197–204.
51. Ayele, A. & Tarekegn, K. (2020). The impact of urbanisation expansion on agricultural land in Ethiopia: A review. *Environmental and Socio-Economic Studies*, 8(4). <https://doi.org/10.2478/enviro-2020-0024>
52. Ayenachew, Y. A. (2024). Effects of land expropriation on farmers' livelihoods in peri-urban Ethiopia. *Frontiers in Sustainable Cities*, 6, 1385309. <https://doi.org/10.3389/frsc.2024.1385309>
53. Aygün, A. H., Kırdar, M. G., Koyuncu, M., & Stoeffler, Q. (2024). Keeping refugee children in school and out of work: Evidence from the world's largest humanitarian cash transfer

- programme. *Journal of Development Economics*, 168, 103266.
<https://doi.org/10.1016/j.jdeveco.2024.103266>.
54. Babbie, E. (2013). *The practice of social research* (13th ed.). Cengage.
55. Baccini, P., & Brunner, P. H. (2012). *Metabolism of the anthroposphere: Analysis, evaluation, design*. MIT Press.
56. Balew, A. (2022). Impacts of land-use and land-cover changes on surface urban heat islands in Addis Ababa city and its surrounding. *Environment, Development and Sustainability*, 24(1), 1215–1236.
57. Baumann, P. (2000). *Sustainable livelihoods and political capital: Arguments and evidence from decentralisation and natural resource management in India*. ODI.
58. Begna, T.S, (2017). Rapid Urbanisation, Squatter Settlements and Housing Policy Interface in Ethiopia, the Case of Nekemte Town. *Journal of Geography & Natural Disasters*, 7(3). <https://doi.org/10.4172/2167-0587.1000211>.
59. Beka Girma, 2016, *Urban Expansion and Its Socio-Economic Impacts on the Livelihood of the Farming Community in Sululta, Addis Ababa*.
60. Belay, B. (2022). *The effect of urban expansion on land rights and livelihood of peri-urban farmers: The case of Dil Yibza Town, North Gondar, Amhara Region, Ethiopia* (Doctoral dissertation). Bahir Dar University, Bahir Dar, Ethiopia.
61. Belete, M., & Yilma, M. (2020). Market Rent Determinants of Residential Apartments in Addis Ababa, Ethiopia. *Journal of African Real Estate Research*, 5(1), 77–97.
<https://doi.org/10.15641/jarer.v5i1.848>
62. Benti, G., Beyene, A., & Fenta, M. (2022). Urbanisation and its implications for sustainable development in Ethiopia. *Journal of Urban Development Studies*, 14(2), 45–62.

63. Berhanu Kefale Alemie, Rohan Mark Bennett, & Jaap Zevenbergen (2015). Evolving urban cadasters in Ethiopia: The impacts on urban land governance. *ScienceDirect. Land Use Policy Volume 42*, January 2015, Pages 695-705.
64. Beshir, A. A., & Song, J. (2021). Urbanisation and its impact on flood hazard: the
65. Bhaskar, R. (1975). A realist theory of science. Leeds Books.
66. Bhatta, B. (2010). Analysis of urban growth and sprawl from remote sensing data. *Springer*.
67. Bianco, A. M., & Yohai, V. J. (1996). Robust estimation in the logistic regression model. In R. H. Rieder (Ed.), *Robust statistics, data analysis, and computer intensive methods* (pp. 17–34). *Springer. SpringerLink*
68. Biersack, A., & Greenberg, J. B. (Eds.). (2006). Reimagining political ecology. Duke University.
69. Biesta, G. (2010). Why 'what works' still won't work: From evidence-based education to value-based education. *Studies in Philosophy and Education*, 29(5), 491–503.
70. Bocquier, P., Menashe-Oren, A., & Nie, W. (2023). Migration's contribution to the urban transition: Direct census estimates from Africa and Asia. *Demographic Research*, 48, 719-752.
71. Booth, W. C., Colomb, G. G., & Williams, J. M. (2016). *The craft of research* (4th ed.). University of Chicago Press.
72. Bots, P., Schlüter, M., & Sendzimir, J. (2014). A framework for analyzing, comparing, and diagnosing social-ecological systems. *Ecology and Society*, 19(4).
73. Bounoua, L., Zhang, P., Mostovoy, G., Thome, K., Masek, J., Imhoff, M., Shepherd, M., Quattrochi, D., Santanello, J., Silva, J., Wolfe, R., & Toure, A. M. (2015). Impact of urbanisation on US surface climate. *Environmental Research Letters*, 10(8). <https://doi.org/10.1088/1748-9326/10/8/084010>

74. Bower, E. R., Bebbington, A. J., Satterthwaite, D., Paprocki, K., & Saleem, A. (2023). Enabling pathways for sustainable livelihoods in planned relocation. *Nature Climate Change*, 13(11), 1111–1120. <https://doi.org/10.1038/s41558-023-01753-x>
75. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
76. Briassoulis, H. (2000). Analysis of land use change: Theoretical and modeling approaches. In S. Loster (Ed.), *The Web Book of Regional Science*. West Virginia University.
77. Brockington, D. (1998). *Land loss and livelihoods: The effects of eviction on pastoralists moved from Mkomazi Game Reserve, Tanzania* (Doctoral dissertation, University of London).
78. Brockington, D. (1999). Conservation, displacement and livelihoods: The consequences of eviction for pastoralists moved from the Mkomazi Game Reserve, Tanzania. *Nomadic Peoples*, 3(2), 74–96.
79. Brueckner, J. K. (2000). Urban sprawl: Diagnosis and remedies. *International Regional Science Review*, 23(2), 160–171. <https://doi.org/10.1177/016001700761012710>
80. Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97–113.
81. Bryman, A. (2012). *Social research methods* (4th ed.). Oxford University Press.
82. Bula, S. W. (2020). They deceived us: Narratives of Addis Ababa development-induced displaced peasants. *International Journal of Sociology and Anthropology*, 12(3). <https://doi.org/10.5897/ijsa2020.0862>
83. Bullard, R. D. (1990). *Dumping in Dixie: Race, class, and environmental quality*. Westview Press.
84. Bulti, D. T., & Assefa, T. (2019). Analyzing ecological footprint of residential building construction in Adama City, Ethiopia.

85. Burgess, E. W. (2000). *The city*. University of Chicago Press.
86. Busho, S. W., Wendimagegn, G. T., & Muleta, A. T. (2021). Quantifying spatial patterns of urbanisation: growth types, rates, and changes in Addis Ababa City from 1990 to 2020. *Spatial Information Research*, 29(5). <https://doi.org/10.1007/s41324-02100388-4>
87. Bvuma, S., & Marnewick, C. (2020). Sustainable livelihoods of township small, medium and micro enterprises towards growth and development. *Sustainability* (Switzerland), 12(8). <https://doi.org/10.3390/SU12083149>.
88. Callon, M. (1984). Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St Briec Bay. *The Sociological Review*, 32(1_suppl), 196–233.
89. Carney, D. (1998). Sustainable livelihoods approach: Progress and possibilities for change. In D. Carney (Ed.), *Sustainable livelihoods: What contribution can we make?* (pp. 3–24). Department for International Development (DFID).
90. Carter, C. B., & Barrett, M. R. (2013). The economics of poverty traps and persistent poverty: Empirical and policy implications. *Journal of Development Studies*, 49(7), 976–990. <https://doi.org/10.1080/00220388.2013.785527>.
91. Carter, M. R., & Barrett, C. B. (2006). The economics of poverty traps and persistent poverty: An asset-based approach. *Journal of Development Studies*, 42(2), 178–199. <https://doi.org/10.1080/00220380500405261>.
92. Cernea, M. M. (1997). The risks and reconstruction model for resettling displaced populations. *World Development*, 25(10), 1569–1587.
93. Chambers, R., & Conway, G. (1992). *Sustainable rural livelihoods: Practical concepts for the 21st century* (IDS Discussion Paper No. 296). Institute of Development Studies.
94. Charles Yaw Oduro, Ronald Adamtey & Kafui Ocloo (2015). *Urban Growth and Livelihood Transformations on the Fringes of African Cities: A Case Study of Changing*

Livelihoods in Peri-Urban Accra. *Environment and Natural Resources Research*; Vol. 5, No. 2; 2015 ISSN 1927-0488 E-ISSN 1927-0496 Published by Canadian Centre of Science and Education.

95. Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). SAGE.
96. Chaudhary, S., Wang, Y., Dixit, A. M., Khanal, N. R., Xu, P., Fu, B., Yan, K., Liu, Q., Lu, Y., & Li, M. (2020). A synopsis of farmland abandonment and its driving factors in Nepal. *In Land* (Vol. 9, Issue 3). <https://doi.org/10.3390/land9030084>
97. Chileshe, N. (2014). Urbanisation, poverty and household food security in Southern Africa. In J. Battersby & V. Watson (Eds.), *Urban food systems governance and poverty in African cities* (pp. 56–67).
98. Chilimo, W. and N. P. (2011). Role of Information and Communication Technologies in Sustainable Livelihoods in Selected Rural Areas of Tanzania. PhD thesis. View project. <https://www.researchgate.net/publication/289794203>.
99. Christiaensen, L., & Martin, W. (2018). Agriculture, structural transformation and poverty reduction: Eight new insights. *World Development*, 109, 413-416.
100. Chua, Y. P. (2020). *Mastering research methods* (3rd ed.). McGraw-Hill.
101. Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). Routledge.
102. Cooper, D. R., & Schindler, P. S. (2014). *Business research methods* (12th ed.). McGraw-Hill.
103. Coulibaly, B and Li, S.(2020). Impact of agricultural land loss on rural livelihoods in peri-urban areas: Empirical evidence from Sebougou, Mali. *Land*2020,9, 470; doi:10.3390/land9120470www.mdpi.com/journal/land.
104. Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). SAGE.

105. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.
106. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
107. Cretney, R. (2014). Resilience for whom? Emerging critical geographies of socio-ecological resilience. *Geography Compass*, 8(9), 627-640.
108. Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302.
109. Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. SAGE.
110. Cutts, D. B., Ettinger de Cuba, S., Bovell-Ammon, A., Wellington, C., Coleman, S. M., Frank, D. A., Black, M. M., Ochoa, E., Chilton, M., Lê-Scherban, F., Heeren, T., Rateau, L. J., & Sandel, M. (2022). Eviction and household health and hardships in families with very young children. *Pediatrics*, 150(4), e2022056692. <https://doi.org/10.1542/peds.2022-056692>.
111. Da Silva, C. A., & Fan, S. (2017). Strengthening rural-urban linkages to reduce poverty and improve food security. In 2017 *Global food policy report* (pp. 14-23). International Food Policy Research Institute (IFPRI).
112. Dalei, N. N., & Gupt, Y. (2014). Livelihood sustainability of forest dependent communities in a mine-spoiled area. *International Journal of Ecological Economics and Statistics*, 35(4).
113. Davis, J. C., & Henderson, J. V. (2003). Evidence on the political economy of the urbanisation process. *Journal of Urban Economics*, 53(1), 98-125.
114. Debelo, A. R., & Soboka, T. E. (2022). Urban Development and the Making of Frontiers in/from Addis Ababa/Finfinne, Ethiopia. *Journal of Asian and African Studies*. <https://doi.org/10.1177/00219096211069647>.

115. Defne Ulukan, Göran Bergkvist, Marcos Lana, Anja Fasse, Gregor Mager, Ingrid Oborna, & Pierre Chopinam (2022). Combining sustainable livelihood and farm sustainability approaches to identify relevant intensification options: Implications for households with crop-based and gathering-based livelihoods in Tanzania. *Ecological Indicators* 144 (2022) 109518. *journal* homepage: www.elsevier.com/locate/ecolind. <https://doi.org/10.1016/j.ecolind.2022.109518>.
116. Degu Bekele, Jafri, S. S. A., & Asfaw, M. (2014). Characteristics of Squatter Houses in Burayu Town Adjoining Addis Ababa , Capital City of Ethiopia. *Civil and Environmental Research*, 6(8).
117. Deneulin, S., & Shahani, L. (Eds.). (2009). An introduction to the human development and capability approach: Freedom and agency. Earthscan.
118. Deng, Z., Zhao, Q., & Bao, H. X. H. (2020). The Impact of Urbanisation on Farmland Productivity: Implications for China's Requisition–Compensation Balance of Farmland Policy. *Land*, 9(9). <https://doi.org/10.3390/land9090311>
119. Denscombe, M. (2010). *The good research guide* (4th ed.). Open University Press.
120. Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). *The SAGE handbook of qualitative research* (5th ed.). SAGE.
121. Dercon, S. (2002). Income risk, coping strategies, and safety nets. *World Bank Research Observer*, 17(2), 141–166. <https://doi.org/10.1093/wbro/17.2.141>.
122. Desai, P. P., & Prasanna, K. P. R. (2018). Poultry integrator and sustainable livelihood security: A study of the broiler sector in Bengaluru region. *International Journal of Science and Research (IJSR)*, 7(3), 1080–1085.
123. Deshmukh, M.S, D. R. Nanaware, & Ajay D. Kumbhar. (2021). Assessment of bare necessities index and sustainable livelihood security index of Satara district Maharashtra.
124. DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). SAGE.

125. Devereux, S. (2016). Social protection for enhanced food security in sub-Saharan Africa. *Food Policy*, 60, 52–62. <https://doi.org/10.1016/j.foodpol.2015.03.009>
126. DFID. (1999). Sustainable livelihoods guidance sheets. Department for International Development.
127. Dibaba AT (2018). Oromo Social Resentment: Re-envisioning Resentment Theory, an African Perspective. *Journal of Pan African Studies* 11(7):96-122.
128. Dires, T., Fentie, D., Hunie, Y., Nega, W., Tenaw, M., Agegnehu, S. K., & Mansberger, R. (2021). Assessing the impacts of expropriation and compensation on livelihood of farmers: The case of peri-urban Debre Markos, Ethiopia. *Land*, 10(6), 614. <https://doi.org/10.3390/land10060614>
129. Diriba Dadi, Hossein Azadi, Feyera Senbeta, Ketema Abebe, Fatemeh Taheri, & Till Stellmacher (2016). Urban sprawl and its impacts on land use change in Central Ethiopia. *Urban Forestry & Urban Greening*. Volume 16, 2016, Pages 132141. <https://doi.org/10.1016/j.ufug.2016.02.005>Get rights and content.
130. Duguma, E.T. & Megento, T.L. (2022). Conversion of farmland to non-agricultural land uses in peri-urban areas of Addis Ababa Metropolitan city, Central Ethiopia. *GeoJournal*. DOI: 10.1007/s10708-021-10553-9
131. Dul, J., & Hak, T. (2008). *Case study methodology in business research*. Elsevier.
132. Duncombe, Richard (2006). Using the livelihoods framework to analyse ICT applications for poverty reduction. *Information Technologies and International Development*. Volume 3, Number 3, Spring 200691DUNCOMBE.
133. Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, 32(4), 1246–1264. <https://doi.org/10.5465/amr.2007.26586086>

134. Efron, B. (1975). The efficiency of logistic regression compared to normal discriminant analysis. *Journal of the American Statistical Association*, 70(352), 892–898. <https://doi.org/10.1080/01621459.1975.10480319> Taylor & Francis Online
135. Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
136. Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
137. Elhadary, Y. A., Samat, N., & Obeng-Odoom, F. (2013). Development at the
138. Elias D. Kuusaana, Isaac Ayurienga, Joyce A. Eledi Kuusaana, Joseph K. Kidido and Ibrahim A. Abdulai (2022). Challenges and
139. Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford University Press.
140. Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289–302. <https://doi.org/10.1111/j.1477-9552.2000.tb01229.x>
141. Elma Iodder & Nguyễn Quang Phục (2012). Livelihood Strategy And Social Differentiation After Agricultural Land Conversion For Urban Expansion In A Peri-urban Area Of Hue City, Vietnam. *Hue University Journal of Science* (HU JOS). Vol. 78 No. 9 (2012).
142. Elmakki, O. (2025). From relief to resilience: The dual role of humanitarian assistance in alleviating poverty and fostering sustainable development. *International Journal of Research and Innovation in Social Science* (IJRISS), 9(1), 1–10.
143. Elmqvist, T., Fragkias, M., Goodness, J., Güneralp, B., Marcotullio, P. J., McDonald, R. I., & Wilkinson, C. (2013). Urbanisation, biodiversity and ecosystem services: Challenges and opportunities. *Springer*.

144. Environment and Urbanisation, 32(1).<https://doi.org/10.1177/0956247819890215>.
145. Environmental Systems Research, 8(1). <https://doi.org/10.1186/s40068-019-0130-8>
146. Epp, S., & Caldwell, W. (2018). Measuring farmland loss: Lessons from Ontario, Canada. *WIT Transactions on Ecology and the Environment*, 215. <https://doi.org/10.2495/EID180151>.
147. Epstein, G., Vogt, J., Mincey, S., Cox, M., & Fischer, B. (2013). Missing ecology: Integrating ecological perspectives with the social-ecological system framework. *International Journal of the Commons*, 7(2), 432-453.
148. Ermias, A., Bogaert, J., & Wogayehu, F. (2019). Analysis of city size distribution in Ethiopia: Empirical evidence from 1984 to 2012. *Journal of Urban Management*, 8(2). <https://doi.org/10.1016/j.jum.2018.12.007>.
149. Eshetu, M. (2017). Urban expansion and its effects on the livelihood of peri-urban farmers: Evidence from Sebeta Town [Master's thesis, St. Mary's University]. St. Mary's University Institutional Repository.
150. Etana, D., Snelder, D. J. R. M., van Wesenbeeck, C. F. A., & Buning, T. de C. (2021). The impact of adaptation to climate change and variability on the livelihood of smallholder farmers in central Ethiopia. *Sustainability (Switzerland)*, 13(12). <https://doi.org/10.3390/su13126790>
151. [Ethiopia's Spatial and Structural Transformation Public Policy and Drivers of Change. IFPRI Ethiopia. Strategy Support Programme | Working Paper 119 |](#)
152. Ethiopian Statistical Service (ESS), 2022. Population Size by Sex, Area and Density by Region, Zone and Wereda : July 2022. Addis Ababa.
153. Ewing, R. (1997). Is Los Angeles-Style Sprawl Desirable? *Journal of the American Planning Association*, 63(1), 107–126. <https://doi.org/10.1080/01944369708975728>.

154. Fang, Y., Fan, J., Shen, M., & Song, M. (2014). Sensitivity of livelihood strategy to livelihood capital in mountain areas: Empirical analysis based on different settlements in the upper reaches of the Minjiang River, China. *Ecological Indicators*, 38, 225–235. <https://doi.org/10.1016/j.ecolind.2013.11.007>.
155. FAO, IFAD, UNICEF, WFP, & WHO. (2017). The State of Food Security and Nutrition in the World 2017: *Building resilience for peace and food security*. FAO.
156. Farrington, J., Ramasut, T., & Walker, J. (2002). Sustainable Livelihoods Approaches in Urban Areas: General Lessons, with Illustrations from Indian Case Studies (ODI Working Paper No. 162). *Overseas Development Institute*. <https://cdn.odi.org/media/documents/2706.pdf>
157. Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, 4(1), 6–16. <https://doi.org/10.1177/1558689809349691>
158. Festus, I. A., Omoboye, I. F., & Andrew, O. B. (2020). Urban Sprawl: Environmental Consequence of Rapid Urban Expansion. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 5(6). <https://doi.org/10.47405/mjssh.v5i6.411>.
159. Feters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—Principles and practices. *Health Services Research*, 48(6 Pt 2), 2134–2156.
160. Feyera Abdissa & Terefe Degefa (2010). Urbanisation and Changing Livelihoods: The Case of Farmers' Displacement in the Expansion of Addis Ababa. *The Demographic Transition and Development in Africa pp* 215–235 .
161. Feyisa, G. L., Meilby, H., Darrel Jenerette, G., & Pauliet, S. (2016). Locally optimized separability enhancement indices for urban land cover mapping: Exploring thermal environmental consequences of rapid urbanisation in Addis Ababa, Ethiopia. *Remote Sensing of Environment*, 175. <https://doi.org/10.1016/j.rse.2015.12.026>

162. Filippi-Codaccioni, O., Clobert, J., & Julliard, R. (2009). Urbanisation effects on the functional diversity of avian agricultural communities. *Acta Oecologica*, 35(5). <https://doi.org/10.1016/j.actao.2009.07.003>
163. Firdaus, G., & Ahmad, A. (2011). Impact analysis of urbanisation on rural livelihood – an empirical study of an urban centre of Delhi, India. *International Journal of Urban Sciences*, 15(3), 147–160. <https://doi.org/10.1080/12265934.2011.626176>.
164. Firew, B. (2010). The Impact of Horizontal Urban Expansion on Sub- Urban Agricultural Community Livelihood: The Case of Tabor Sub-City , Hawassa city ,. Addis Ababa University. <https://doi.org/10.5539/jas.v5n1p54>.
165. Fitawok, M. B., Derudder, B., Minale, A. S., Van Passel, S., Adgo, E., & Nyssen, J. (2022). Analyzing the impact of land expropriation programme on farmers' livelihood in urban fringes of Bahir Dar, Ethiopia. *Habitat International*, 129, 102674. <https://doi.org/10.1016/j.habitatint.2022.102674>.
166. Fitre, A. E., Tefera, B., & Chanie, T. (2024). Willingness to accept compensation for railway-induced displacement: Insights from the Amhara Region, Ethiopia. *Land Economics Letters, advance online publication*. (Preprint/PDF). <https://doi.org/10.48550/arXiv>.
167. Folke, C. (2006). Resilience: The emergence of a perspective for social– ecological systems analyses. *Global Environmental Change*, 16(3), 253-267.
168. Fowler, F. J. (2014). Survey research methods (5th ed.). SAGE.
169. Frankenberger, T.R and McCaston, M.K. 2015) The household livelihood security concept. CARE USA.
170. Frediani, A. A. (2007). Amartya Sen, the World Bank, and the redress of urban poverty: A Brazilian case study. *Journal of Human Development*, 8(1), 133-152.
171. Friedmann, J. (1966a). Regional development policy: A case study of Venezuela. Cambridge, MA: MIT Press.

172. Friedmann, J. (1966b). A general theory of polarisation. *Geographical Review*, 56(2), 176–207.
173. Friedmann, J. (2006). Four theses in the study of China's urbanisation. *International Journal of Urban and Regional Research*, 30(2), 440-451.
174. Garai, Suman, Meena, B. S., Dutta, T. K., and Kadian, K. S. (2022). Development and application of dairy-based sustainable livelihood security index in the districts of West Bengal, India: A tool for dairy development planning. *Journal of Rural Studies*, 93. <https://doi.org/10.1016/j.jrurstud.2019.01.017>.
175. Gautam, P. K., & Jha, S. K. (2022). Development of Livelihood Security Index: A tool for household level assessment. *Asian Journal of Agricultural Extension, Economics & Sociology*, 40(11), 86–93. <https://ageconsearch.umn.edu/record/367238>.
176. Gbenga Oladehinde, Afolabi Francis Fatusin, & Victor Ojo (2019). Urban Expansion and Loss of Agricultural Land in Osogbo, Osun State Nigeria, using Multi-Temporal Imageries *Journal of African real estate research*. vol. 4 no. 1 (2019) / <https://doi.org/10.15641/jarer.v4i1.735>.
177. Gebrihet, H. G., & Pillay, P. (2020). Determinants of Urban Land Lease Market in an Emerging Economy: Empirical Evidence from Ethiopia. *International Journal of Economics and Business Administration*, VIII(Issue 4). <https://doi.org/10.35808/ijeba/599>
178. Geleta, F. N. (2014). State of Oromia's Interest in Addis Ababa (Finfinnee): Undelivered Constitutional Promises. *Journal of Oromo Studies*, 22(2).
179. Ghabru, M. G., Devi, G., & Singh, R. (2017). Estimating agricultural sustainability in Gujarat using sustainable livelihood security index. *Agricultural Economics Research Review*, 30(1). <https://doi.org/10.5958/0974-0279.2017.00011.8>
180. Ghimire, S. (2015). Impact of eviction on livelihood of people: A study of Thapathali squatter settlement in Nepal (Master's thesis, Institute for Housing and

Urban Development Studies, Erasmus University Rotterdam).
<http://hdl.handle.net/2105/33853>.

181. Girardet, H. (2015). *Creating regenerative cities*. Routledge.
182. Girmay, H., & Woldeamanuel, A. A. (2022). Urban built-up area expansion and its impacts on the livelihoods of farm households in peri-urban areas of Atsbi town, Tigray region, Ethiopia. *Journal of Urban Development Studies*, 2(1), 39. <https://doi.org/10.3015/ecsujuds.v2i1.39>
183. Golafshani, N. (2003). *Understanding reliability and validity in qualitative research*. *The Qualitative Report*, 8(4), 597–607.
184. Gong, Y., Yao, K., Zhang, R., Liu, B., & Wang, F. (2021). Rethinking livelihood resilience after development-induced displacement and resettlement: A case study of Qianping Reservoir. *International Journal of Water Resources Development*, 37(5), 841–864. <https://doi.org/10.1080/07900627.2020.1790340>.
185. Goswami, M., Nautiyal, S., & Manasi, S. (2020). Drivers and consequences of biophysical landscape change in a peri-urban– rural interface of Guwahati, Assam. *Environment, Development and Sustainability*, 22(2). <https://doi.org/10.1007/s10668-0180220-1>
186. Gottero, E. (2019). Identifying vulnerable farmland: An index to capture high urbanisation risk areas. *Ecological Indicators*, 98. <https://doi.org/10.1016/j.ecolind.2018.10.037>
187. Govindaprasad P K, & Manikandan, K. (2014). Agricultural land conversion and food security: A thematic analysis. *International Research Journal of Agriculture and Rural Development*, 3(1).
188. Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255–274.

189. Greener, S. (2008). *Business research methods*. Ventus Publishing.
190. Gregory Gullette; Paporn Thebpanya; & Sayamon Singto (2017). Assessing Urban Expansion and Livelihoods in Thailand's Transitional Spaces through Combined Ethnography and Landsat Data. *Economic Anthropology* | September 01 2017. *Human Organisation* (2017) 76 (3): 227–239. <https://doi.org/10.17730/0018-7259.76.3.227>.
191. Guba, E. G., & Lincoln, Y. S. (1985). *Naturalistic inquiry*. SAGE.
192. Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). SAGE.
193. Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
194. Guest, G., Namey, E., & McKenna, K. (2017). How many focus groups are enough? Building an evidence base for nonprobability sample sizes. *Field Methods*, 29(1), 3–22. <https://doi.org/10.1177/1525822X16639015> SAGE Journals
195. Guha, S. M. V. R. , B. D. K. , D. P. R. V. M. , P. T. and R. P. K. (2018). Analysis of sustainable livelihood security: A case study.
196. Guha, S., Barik, D. K., & Mandla, V. R. (2022). Sustainable Livelihood Security Index: A case study in Chirrakunta Rurban Cluster. In S. Kanga, S. K. Singh, G. Meraj, & M. Farooq (Eds.), *Geospatial Modeling for Environmental Management: Case Studies from South Asia* (pp. 325–346). CRC Press. <https://doi.org/10.1201/9781003147107-22>
197. Güneralp, B., Reba, M., Hales, B. U., Wentz, E. A., & Seto, K. C. (2020). Trends in urban land expansion, density, and land transitions from 1970 to 2010: A global synthesis. *Environmental Research Letters*, 15(4). <https://doi.org/10.1088/17489326/ab6669>

198. Gunn, V., Padetak, D., Kim, I. H., Benach, J., Julià, M., & Vives, A. (2024). A systematic review of evaluated labour-market initiatives addressing precarious employment: Findings and public-health implications. *Work, Employment and Society. Advance online publication*. <https://doi.org/10.1177/27551938241310120>. 194.
199. Guolin Gu (2022). Rethinking dispossession: The livelihood consequences of land expropriation in contemporary rural China. *Journal of Agrarian Change*. <https://doi.org/10.1111/joac.12498>.
200. Gwalema S.R, (2012). Impacts of Urban Development Pressure on Coastal Local Communities in Tanzania: A Case Study of Ununio, Kaole and Kilwa-Masoko Settlements. *Huria: Journal of the Open University of Tanzania*. Vol. 11 (2012)
201. Gwan, A. S. (2017). The impacts of urban expansion on farmers' livelihoods at the urban periphery: The case of Bamenda City, Cameroon [Master's thesis, University of Yaoundé I].
202. Ha, Le, & Trung-Kien. (2019). The Impact of Urbanisation on Income Inequality: A Study in Vietnam. *Journal of Risk and Financial Management*, 12(3). <https://doi.org/10.3390/jrfm12030146>.
203. Ha, N. M., Dang Le, N., & Trung-Kien, P. (2021). The impact of urbanisation on poverty reduction: An evidence from Vietnam. *Cogent Economics and Finance*, 9(1). <https://doi.org/10.1080/23322039.2021.1918838>.
204. Habermas, J. (1984). The theory of communicative action (Vol. 1). Beacon Press.
205. Hacking, I. (1983). Representing and intervening. Cambridge University Press.
206. Haggblade, S., Hazell, P., & Reardon, T. (2018). The rural non-farm economy: Prospects for growth and poverty reduction. *World Development*, 50, 1-15.
207. Hahn, M. B., Riederer, A. M., & Foster, S. O. (2009). The Livelihood Vulnerability Index: A pragmatic approach to assessing risks from climate variability and change-A

- case study in Mozambique. *Global Environmental Change*, 19(1).
<https://doi.org/10.1016/j.gloenvcha.2008.11.002>
208. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage.
209. Harishkumar, H. V. , U. K. B. , K. M. S. and M. D. N. (2016). Livelihood security of farm households under different farming systems in Kolar district of KarnatakaAn economic analysis. *International Journal of Agriculture, Environment and Biotechnology*, 9(2), 313. <https://doi.org/10.5958/2230-732x.2016.00041.3>.
210. Hassan Baba, S., Mir, S. A., & Farooq Bhat, I. (2019). Technological interventions and livelihood security of small holders in maize based farming system of Kashmir Valley Repeated Measurement Designs for two-crop System View project Book on "Basic Practical Statistics Using R" View project. <https://www.researchgate.net/publication/357280429>.
211. Hasse, J. E., & Lathrop, R. G. (2003). Land resource impact indicators of urban sprawl. *Applied Geography*, 23(2–3). <https://doi.org/10.1016/j.apgeog.2003.08.002>.
212. Hasse, J. E., & Lathrop, R. G. (2003). Land use change in the Chesapeake Bay watershed: A comparison of two approaches to measuring land consumption rates. *Landscape Ecology*, 18(3), 231-246.
213. He, C., Liu, Z., Xu, M., Ma, Q., & Dou, Y. (2017). Urban expansion brought stress to food security in China: Evidence from decreased cropland net primary productivity. *Science of the Total Environment*, 576,660–670.
<https://doi.org/10.1016/j.scitotenv.2016.10.107>
214. He, Y., Yang, Q., Liu, Y., Guo, L., & Zhou, Y. (2022). Farmers' livelihood capital and its impact on sustainable livelihood strategies in poverty-stricken areas. *Sustainability*, 14(9), 4955. <https://doi.org/10.3390/su14094955>

215. Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-Based Nursing*, 18(3), 66–67. <https://doi.org/10.1136/eb-2015-102129>
216. Heather Randell (2017). The short-term impacts of development-induced displacement on wealth and subjective well-being in the Brazilian Amazon. HHS Public Access.
217. Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative Health Research*, 29(10), 1483–1496. <https://doi.org/10.1177/1049732318821692> PubMed
218. Hernán, M. A., & Robins, J. M. (2020). Causal inference: What if. Chapman & Hall/CRC.
219. Hidrobo, M., Hoddinott, J., Kumar, N., & Olivier, M. (2018). Social protection, food security, and asset formation. *World Development*, 101, 88–103. <https://doi.org/10.1016/j.worlddev.2017.08.014>
220. Hiruy, H.N., Barden-O’Fallon, J., Mitiku, F. *et al.* (2023). Association of gender-related factors and household food security in southwest Oromia, Ethiopia: evidence from a cross-sectional study. *Agric & Food Secur* **12**, 26 (2023). <https://doi.org/10.1186/s40066-023-00433-5>
221. Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 4(1), 1-23.
222. Hong, K., Zou, Y., Zhu, M., & Zhang, Y. (2021). A game analysis of farmland expropriation conflict in China under multidimensional preference: Cooperation or resistance? *Land*, 10(2). <https://doi.org/10.3390/land10020124>.
223. Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). Wiley.
224. Hua. (2017). Policy design of national rural livelihood mission (NRLM)-A critical assessment. *Journal of Management and Development Studies*, 6(8).

225. Huang, X. H. X. H. Y. & Y. X. (2017). Assessment of livelihood vulnerability of land-lost farmers in urban fringes: A case study of Xi'an, China. *Habitat International*, 59. <https://doi.org/10.1016/j.habitatint.2016.11.001>
226. Huang, Z., Du, X., & Castillo, C. S. Z. (2019). How does urbanisation affect farmland protection? Evidence from China. *Resources, Conservation and Recycling*, 145. <https://doi.org/10.1016/j.resconrec.2018.12.023>.
227. Humphries, J. E., Mader, N. S., Tannenbaum, D. I., & van Dijk, W. L. (2019). Does eviction cause poverty? Quasi-experimental evidence from Cook County, IL (*NBER Working Paper No. 26139*). *National Bureau of Economic Research*. <https://doi.org/10.3386/w26139>.
228. Hutapea, M. (2024). Implementation of compensation of rights of ownership on land in the development of toll road in Dumai City, Riau Province. *West Science Law and Human Rights*, 2(1), 1–10.
229. laquinta, D. L., & Drescher, A. W. (2000). Defining peri-urban: understanding rural-urban linkages and their connection to institutional contexts. In *Tenth World Congress of the International Rural Sociology Association* (Vol. 1, pp. 3-28).
230. Ibilewa, D., Aliyu, M., O. Alalu, U., & Abdulrasheed, T. H. (2021). Urban Growth and Its Impact on Urban Land Cover Change in Akure South Local Government, Ondo State, Nigeria. *Asian Journal of Environment & Ecology*. <https://doi.org/10.9734/ajee/2021/v16i430255>.
231. Ingxay, P., Hirota, I., & Yokoyama, S. (2015). Access to livelihood assets under the influence of a climate event in upland northern Laos. *Geographical Review of Japan Series B*, 87(2). <https://doi.org/10.4157/geogrevjapanb.87.131>.
232. Isaacs, A. N. (2014). An overview of qualitative research methodology for public health researchers. *International Journal of Medicine and Public Health*, 4(4), 318–323. <https://doi.org/10.4103/2230-8598.144055> ijmedph.org

233. Janssen, M., Bousquet, F., & Ostrom, E. (2011). A multimethod approach to study the governance of social-ecological systems. *Natures Sciences Sociétés*, 19(4), 382-394.
234. Jawarneh, R. N. (2021). Modeling past, present, and future urban growth impacts on primary agricultural land in greater Irbid municipality, Jordan using SLEUTH (1972-2050). *ISPRS International Journal of Geo-Information*, 10(4). <https://doi.org/10.3390/ijgi10040212>.
235. Jayne, T. S., Chamberlin, J., & Benfica, R. (2018). Africa's unfolding economic transformation. *Journal of Development Studies*, 54(5), 777-787.
236. Jemal Abagissa, & Gutata Goshu (2022). The Impact of Urbanisation on Farmers: Analysis for Ethiopia. *ASERC Journal of Socio-Economic Studies*. Volume5, Number 1, (2022) Pages 47-69. Journal homepage: www.ajses.az.
237. Jiang, L., & Zhang, Y. (2016). Modeling urban expansion and agricultural land conversion in Henan province, China: An integration of land use and socioeconomic data. *Sustainability (Switzerland)*, 8(9). <https://doi.org/10.3390/su8090920>.
238. Jiang, L., Deng, X., & Seto, K. C. (2013). The impact of urban expansion on agricultural land use intensity in China. *Land Use Policy*, 35, 33-39. <https://doi.org/10.1016/j.landusepol.2013.04.011>.
239. Joel Chaeruka (2021). Displacement Due to Urban Expansion in Mazowe District: Illustrations from Selected Urban Settlements. Centre for Conflict Management and Transformation & Tugwi Mukosi Multidisciplinary Research Institute (2021). Development-Induced Displacements in Zimbabwe Learning from Colonial and Post-Colonial Experiences. *Weaver Press*, © Centre for Conflict Management and Transformation. 2021.
240. Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. <https://doi.org/10.3102/0013189X033007014>

241. Jose F. Andrade, Kenneth G. Cassman, Juan I. Rattalino Edreira, Fahmuddin Agus, Abdullahi Bala, Nanyan Deng, Patricio Grassin (2022). Impact of urbanisation trends on production of key staple crop. *Ambio* 2022, 51:1158–1167 <https://doi.org/10.1007/s13280-021-01674-z>
242. Kabanga, L. (2021). Compensation assessment practices in expropriation of customary land: Evidence from Malawi (Master's thesis). University of Cape Town.
243. Kabanga, L., & Mooya, M. M. (2023). Compensation assessment practices in expropriation of customary land: Evidence from Malawi. *Land Use Policy*. <https://doi.org/10.1016/j.landusepol.2023.106842>
244. Kamaruddin, R., & Samsudin, Shamzaeffa. (2014). The sustainable livelihoods index: a tool to assess the ability and preparedness of the rural poor in receiving entrepreneurial project. In *Journal of Social Economics Research* (Vol. 1, Issue 6).
245. Kapoor, R. T. (2014). Application of information and communication technology for dissemination of agricultural information among farmers: challenges and opportunities. *International Journal of Agricultural Science, Research and Technology in Extension and Education Systems*, 4(2).
246. Karim, M. R., Meem, M. A., Rahman, M. S., Noman, M. R. F., & Huda, S. (2020). Use and Role of Mobile Phone for Information Services in Agricultural Activities. *Asian Journal of Agricultural Extension, Economics & Sociology*. <https://doi.org/10.9734/ajaees/2020/v38i230316>.
247. Karita Kan (2019). Accumulation without Dispossession? Land Commodification and Rent Extraction in Peri-urban China. *International Journal of Urban and Regional Research*. <https://doi.org/10.1111/1468-2427.12746>.
248. Karlsson, B. G. (2015). Political ecology: Anthropological approaches. In *International Encyclopedia of the Social & Behavioral Sciences* (pp. 350-355). Elsevier.

249. Kasa, L., Zeleke, G., Alemu, D., Hagos, F., and Heinemann, A. (2011) Impact of Urbanisation of Addis Ababa City on Peri-urban Environment and Livelihoods, *ResearchGate*, <https://www.researchgate.net/publication/267802706>.
250. Kassa, F. (2014). The Rates and Effects of Urban Sprawl in Developing Countries: The Case of Addis Ababa, Ethiopia. *International Journal of Area Studies*, 9(2). <https://doi.org/10.2478/ijas-2014-0009>
251. Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social Sciences*, 8(9), 255. <https://doi.org/10.3390/socsci8090255>
252. Kavitha, A., Somashekar, R. K., & Nagaraja, B. C. (2015). Urban expansion and loss of Agriculture land - A case of Bengaluru city. *International Journal of Geomatics and Geosciences*, 5(3).
253. Kebede G. F. (2023). Entrepreneurship and the Promises of Inclusive Urban Development in Ethiopia. *Urban forum (Johannesburg, South Africa)*, 34(1), 1–30. <https://doi.org/10.1007/s12132-022-09458-8>
254. Kebede, B. and Singh, K.N. 2021. Implication of land acquisition on the livelihood assets of farm households in Sebeta Hawas and Sululta Woredas of Oromia, Ethiopia. *Geojournal*.
255. Kebede, D., & Emana, B. (2023). Impact of land acquisition for large-scale agricultural investments on food security status of displaced households: *The case of Ethiopia. Land Use Policy*, 126, 106507. <https://doi.org/10.1016/j.landusepol.2022.106507>.
256. Kebede, D., Emana, B., & Abebaw, D. (2021). Impact of land acquisition for large-scale agricultural investments on income and asset possession of displaced households in Ethiopia. *Heliyon*, 7(12), e08557. <https://doi.org/10.1016/j.heliyon.2021.e08557>.

257. Kejela Gnamura, Michael Antwi, Belete Abenet (2024). The Impact of Urbanization-Induced Eviction on Food Security of peri-urban households in Addis Ababa, Ethiopia, 30 October 2024, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-5343393/v1]
258. Kelly, S. E., & Cordeiro, L. (2020). Pragmatism in practice: Mixed methods research for health and rehabilitation professionals. *Archives of Physiotherapy*, 10(1), 1–8.
259. Kennedy, C., Cuddihy, J., & Engel-Yan, J. (2007). The changing metabolism of cities. *Journal of Industrial Ecology*, 11(2), 43-59.
260. Kew, B., & Lee, B. D. (2013). Measuring sprawl across the urban rural continuum using an amalgamated sprawl index. *Sustainability* (Switzerland), 5(5). <https://doi.org/10.3390/su5051806>
261. Kibrom A, Tiberti, Luca, Woldemichael, Andinet, Mezgebo, Tsega G, & Endale, Meron (2022). Can Urbanisation Improve Household Welfare? Evidence From Ethiopia. *Journal of African Economies*. <https://doi.org/10.1093/jae/ejac003>
262. Kim, D.S., Kobayashi, S., & Mizuno, K. (2003). Analysis of urbanisation characteristics causing farmland loss in a rapid growth area using GIS and RS. *Paddy and Water Environment*, 1(4). <https://doi.org/10.1007/s10333-003-0032-1>
263. Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26–41. <https://doi.org/10.5430/ijhe.v6n5p26>
264. Koenig, D. (2006). Enhancing local development in development-induced displacement and resettlement projects. In C. de Wet (Ed.), *Development-induced displacement: Problems, policies and people* (pp. 105–140). Berghahn Books.
265. Kollmair, M., & Gamper, R. (2002). The sustainable livelihoods approach. Input paper for the Integrated Training Course of NCCR North-South Aeschiried, *Switzerland*.

266. Kontgis, C., Schneider, A., Fox, J., Saksena, S., Spencer, J. H., & Castrence, M. (2014). Monitoring peri-urbanisation in the greater Ho Chi Minh City metropolitan area. *Applied Geography*, 53. <https://doi.org/10.1016/j.apgeog.2014.06.029>.
267. Koroso, N. H., Lengoiboni, M., & Zevenbergen, J. A. (2021). Urbanisation and urban land use efficiency: Evidence from regional and Addis Ababa satellite cities, Ethiopia. *Habitat International*, 117. <https://doi.org/10.1016/j.habitatint.2021.102437>.
268. Kosa, A., Juhar, N., & Mohammed, I. (2017). Urbanisation in Ethiopia: Expropriation Process and Rehabilitation Mechanism of Evicted Peri-Urban Farmers (Policies and Practices). *International Journal of Economics & Management Sciences*, 06(05). <https://doi.org/10.4172/2162-6359.1000451>.
269. Kothari, C. R. (2004). Research methodology: Methods and techniques (2nd ed.). New Age International. islmblogblog.wordpress.com
270. Krishna, V. R., Paramesh, V., Arunachalam, V., Das, B., Elansary, H. O., Parab, A., Reddy, D. D., Shashidhar, K. S., El-Ansary, D. O., Mahmoud, E. A., & El-Sheikh, M. A. (2020). Assessment of sustainability and priorities for development of Indian west coast region: An application of sustainable livelihood security indicators. *Sustainability (Switzerland)*, 12(20). <https://doi.org/10.3390/su12208716>.
271. Kuang, W., Chi, W., Lu, D., & Dou, Y. (2020). A comparative analysis of megacity expansions in China and the US: Patterns, rates and driving forces. *Landscape and Urban Planning*, 203, 103898.
272. Kuhn, T. S. (1970). The structure of scientific revolutions (2nd ed.). University of Chicago Press.
273. Kumar, A., & Begum Irfan, Z. (2018). Assessment of the Sustainable Livelihood Security of the Ecologically Vulnerable Indian State-Uttarakhand. *Asian Journal of Geological Research*, 1(3).

274. Kumar, M., Sharif, M., & Ahmed, S. (2020). Impact of urbanisation on the river Yamuna basin. *International Journal of River Basin Management*, 18(4). <https://doi.org/10.1080/15715124.2019.1613412>.
275. Kumar, R. (2014). *Research methodology: A step-by-step guide for beginners* (4th ed.). SAGE.
276. Kumar, S., Raizada, A., & Biswas, H. (2014). Prioritising development planning in the Indian semi-arid Deccan using sustainable livelihood security index approach. *International Journal of Sustainable Development and World Ecology*, 21(4). <https://doi.org/10.1080/13504509.2014.886309>.
277. Labiso, T.T. (2020). Urban Expansion and Its Impact on the Livelihood of Peripheral Farming Communities: The Case of Assosa Town, Benishangul Gumuz Region, Ethiopia.
278. Lambin, E. F., Turner, B. L., Geist, H. J., Agbola, S. B., Angelsen, A., Bruce, J. W., ... & Xu, J. (2001). The causes of land-use and land-cover change: Moving beyond the myths. *Global Environmental Change*, 11(4), 261-269.
279. Lamson-Hall, P., Angel, S., DeGroot, D., Martin, R., & Tafesse, T. (2019). A new plan for African cities: The Ethiopia Urban Expansion Initiative. *Urban Studies*, 56(6). <https://doi.org/10.1177/0042098018757601>.
280. Larsen, L., Yeshitela, K., Mulatu, T., Seifu, S., & Desta, H. (2019). The impact of rapid urbanisation and public housing development on urban form and density in Addis Ababa, Ethiopia. *Land*, 8(4). <https://doi.org/10.3390/land8040066>.
281. Lasisi, M., Popoola, A., Adediji, A., Adedeji, O., & Babalola, K. (2017). City expansion and agricultural land loss within the peri-urban area of Osun State, Nigeria. *Ghana Journal of Geography*, 9(3), 132–163.
282. Latour, B. (2005). *Reassembling the social: An introduction to actornetwork-theory*. Oxford University Press.

283. Law, J. (1992). Notes on the theory of the actor-network: Ordering, strategy, and heterogeneity. *Systems Practice*, 5(4), 379-393.
284. Lease, D. (2005). Factors influencing the adoption of biometric security systems: An application of the Technology Acceptance Model (Master's thesis). [University]. (Confirm exact title/source.)
285. Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). Pearson.
286. Leifheit, K. M., Schwartz, G. L., Pollack, C. E., Black, M. M., Edin, K. J., Althoff, K. N., & Jennings, J. M. (2020). Eviction in early childhood and neighborhood poverty, food security, and obesity in later childhood and adolescence: Evidence from a longitudinal birth cohort. *SSM – Population Health*, 11, 100575. <https://doi.org/10.1016/j.ssmph.2020.100575>.
287. Levers, M.-J. D. (2013). Philosophical paradigms, grounded theory, and perspectives on emergence. *SAGE Open*, 3(4), 1–6. <https://doi.org/10.1177/2158244013517243>
288. Li, C., Wang, M., & Song, Y. (2018). Vulnerability and livelihood restoration of landless households after land acquisition: Evidence from peri-urban China. *Habitat International*, 79. <https://doi.org/10.1016/j.habitatint.2018.08.003>.
289. Li, X. (2011). Farmland grabs by urban sprawl and their impacts on peasants livelihood in China: An overview. *International Conference on Global Land Grabbing*, April.
290. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.
291. Lombard, M. (2016). Land conflict in peri-urban areas: Exploring the effects of land reform on informal settlement in Mexico. *Urban Studies*, 53(13), 2700–2720. <https://doi.org/10.1177/0042098015603569>.

292. 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.
293. Mabe, F. N., Ayamga, M., & Amadu, M. (2021). Livelihood security of rural households in Northern Ghana: do forests matter? *Environment, Development and Sustainability*, 23(6). <https://doi.org/10.1007/s10668-020-00981-x>
294. Malanga, D. F., & Banda, M. (2021). ICT Use and Livelihoods of Women Microenterprises in. Proceedings of the 1st Virtual Conference on Implications of Information and Digital Technologies for Development, 2021.
295. Manap, N. M. A., & Ismail, N. W. (2019). Food security and economic growth. *International Journal of Modern Trends in Social Sciences*, 2(8), 108–118. <https://doi.org/10.35631/ijmtss.280011>
296. Martellozzo, F., Ramankutty, N., Hall, R. J., Price, D. T., Purdy, B., & Friedl, M. A. (2015). Urbanisation and the loss of prime farmland: a case study in the Calgary–Edmonton corridor of Alberta. *Regional Environmental Change*, 15(5). <https://doi.org/10.1007/s10113-014-0658-0>.
297. Mathur, N. (2024). Socioeconomic vulnerabilities of migrant labour households in Delhi. *Indian Public Policy Review*, 5(5), 43–60. <https://ippr.in/index.php/ippr/article/view/299>.
298. Maurya, A., Kamalvanshi, V., Sen, C., & Badal, P. S. (2018). A Study of Sustainable Livelihood Security in Eastern Uttar Pradesh. *Indian Journal of Economics and Development*, 14(1a). <https://doi.org/10.5958/2322-0430.2018.00037.9>.
299. Maxwell, D., & Wiebe, K. (1999). Land tenure and food security: *A review of concepts, evidence and methods*. USAID LTRA/EGAT.
300. Maxwell, J. A. (2012). The importance of qualitative research for causal explanation in education. *Qualitative Inquiry*, 18(8), 655–661.

301. Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.). SAGE.
302. McDonnell, M. J., & Pickett, S. T. (1990). Ecosystem structure and function along urban-rural gradients: An unexploited opportunity for ecology. *Ecology*, 71(4), 1232-1237.
303. McGinnis, M. D. (2011). An introduction to IAD and the language of the Ostrom workshop: A simple guide to a complex framework. *Policy Studies Journal*, 39(1), 169-183.
304. McGinnis, M. D., & Ostrom, E. (2014). Social-ecological system framework: Initial changes and continuing challenges. *Ecology and Society*, 19(2).
305. Megersa, T. (2018). Effects of Urban Land Use/Cover Dynamics on Peri-urban Natural Environment in Nekemte City, Oromia, Ethiopia. *International Journal of Energy and Environmental Science*, 3(3). <https://doi.org/10.11648/j.ijees.20180303.11>
306. Melese, M. (2007). City expansion, squatter settlements and policy implications in Addis Ababa: The case of Kolfe Keranio sub city. *Ethiopian Journal of the Social Sciences and Humanities*, 2(2). <https://doi.org/10.4314/ejossah.v2i2.29866>.
307. Melnikovas, A. (2018). Towards an explicit research methodology: Adapting research onion model for futures studies. *Journal of Futures Studies*, 23(2), 29–44.
308. Menard, S. (2002). *Applied logistic regression analysis* (2nd ed.). Sage. (*Quantitative Applications in the Social Sciences*, No. 106)
309. Menard, S. (2010). *Logistic regression: From introductory to advanced concepts and applications*. SAGE.
310. [Meraj A. Ansari](#), [Mohammad Shamim](#), [Ashisa K. Prusty](#), [Raghuveer Singh](#), [Azad S. Panwar](#), [Debashis Dutta](#), [Suryanarayana Bhaskar](#), [Jayasree S. Bindhu](#), [Mothkur T. Sanjay](#), [Jashanjot Kaur](#), [Cini Varghese](#), [Sukanta Dash](#), [Arpan Bhowmik](#), [Santanu K. Bal](#) (2022). Sustainable livelihood security of small farmers improved through a resilient

- farming system in the semiarid region of India. *Land Degradation & Development*. <https://doi.org/10.1002/ldr.4358>.
311. Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
312. Mertens, D. M. (2007). Transformative paradigm: Mixed methods and social justice. *Journal of Mixed Methods Research*, 1(3), 212–225.
313. Mertens, D. M. (2015). *Research and evaluation in education and psychology* (4th ed.). SAGE.
314. Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist*, 50(9), 741–749. <https://doi.org/10.1037/0003-066X.50.9.741>
315. Mezgebo, T. G., & Porter, C. (2020). From rural to urban, but not through migration: Household livelihood responses to urban reclassification in northern Ethiopia. *Journal of African Economies*, 29(2). <https://doi.org/10.1093/jae/ejz020>.
316. Mi Shih (2016). Rethinking displacement in peri-urban transformation in China. *Environment and Planning A: Economy and Space Impact Factor: 3.790 / 5-Year Impact Factor: 4.422 Volume 49, Issue 2*. <https://doi.org/10.1177/0308518X16670158>.
317. Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE.
318. Ministry of Urban Development and Housing [MoUDH]. (2016). *Urban Development Spatial Planning Addis Ababa*, Ethiopia.
319. Mishra, A., & Debata, B. (2021). Livelihood security among rural poor: Evaluating the impact of Rural Livelihood Mission in Odisha, India. *Cogent Economics & Finance*, 9(1), 1978705. <https://doi.org/10.1080/23322039.2021.1978705>.

320. Mohajan, H. (2020). Quantitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, 9(4), 52–79.
321. Mohammad ARIF, D. Srinivasa RAO, & Krishnendu GUPTA (2019). Peri-urban livelihood dynamics: a case study from Eastern India. *Forum geographic. Geographical studies and environment protection research*. Volume XVIII | Issue 1.
322. Mohammed, I., Kosa, A., & Juhar, N. (2020). Economic linkage between urban development and livelihood of peri-urban farming communities in Ethiopia (policies and practices). *Agricultural and Food Economics*, 8(1). <https://doi.org/10.1186/s40100020-00164-2>.
323. Moisa, M. B. and G. D. O. (2021). Analysis of urban expansion and land use/land cover changes using geospatial techniques: a case of Addis Ababa City, Ethiopia. *Applied Geomatics*, 13(4). <https://doi.org/10.1007/s12518-021-00397-w>.
324. Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48–76. <https://doi.org/10.1177/2345678906292462>
325. Morgan, D. L. (2014). *Integrating qualitative and quantitative methods: A pragmatic approach*. SAGE.
326. Moriconi-Ebrard, F. (2015). La révolution démographique et urbaine. *Questions Internationales*, 71-72, 91-99.
327. Morris, K. I., Chan, A., Morris, K. J. K., Ooi, M. C. G., Oozeer, M. Y., Abakr, Y. A., Nadzir, M. S. M., Mohammed, I. Y., & Al-Qrimli, H. F. (2017). Impact of urbanisation level on the interactions of urban area, the urban climate, and human thermal comfort. *Applied Geography*, 79. <https://doi.org/10.1016/j.apgeog.2016.12.007>
328. Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International*

Journal of Qualitative Methods, 1(2), 13–22.
<https://doi.org/10.1177/160940690200100202>

329. Moser, C. O. N. (1998). The asset vulnerability framework: Reassessing urban poverty reduction strategies. *World Development*, 26(1), 1–19.
[https://doi.org/10.1016/S0305-750X\(97\)10015-8](https://doi.org/10.1016/S0305-750X(97)10015-8).
330. Mougeot, L. J. (2000). Urban agriculture: Definition, presence, potentials and risks, and policy challenges. Cities feeding people series; rept. 31.
331. Mouton, J. (2001). *How to succeed in your Master's and Doctoral studies*. Van Schaik.
332. Mundoli, S., Manjunath, B., & Nagendra, H. (2015). Effects of urbanisation on the use of lakes as commons in the peri-urban interface of Bengaluru, India. *International Journal of Urban Sustainable Development*, 7(1).
<https://doi.org/10.1080/19463138.2014.982124>.
333. Murdoch, J. (1998). The spaces of actor-network theory. *Geoforum*, 29(4), 357–374.
334. Mutahara, M., Haque, A., Khan, M. S. A., Warner, J. F., & Wester, P. (2016). Development of a sustainable livelihood security model for storm-surge hazard in the coastal areas of Bangladesh. *Stochastic Environmental Research and Risk Assessment*, 30(5). <https://doi.org/10.1007/s00477-016-1232-8>
335. Mutisya, M., Ngware, M. W., Kabiru, C. W., & Kandala, N.-B. (2016). The effect of education on household food security in two informal urban settlements in Kenya: A longitudinal analysis. *Food Security*, 8(4), 743–756.
<https://doi.org/10.1007/s12571-016-0589-3>
336. Naab, F. Z., Dinye, R. D., & Kasanga, R. K. (2013). Urbanisation and its impact on agricultural lands in growing cities in developing countries: a case study of Tamale in Ghana. *Modern Social Science Journal*, 2(2).

337. Nagasawa, R., Fukushima, A., Yayusman, L. F., & Novresiandi, D. A. (2015). Urban Expansion and Its Influences on the Suburban Land Use Change in Jakarta Metropolitan Region (JABODETABEK). *Urban Planning and Design Research*, 3(0). <https://doi.org/10.14355/updr.2015.03.002>
338. Nahalomo, A., Balugaba, B. E., Muhumuza, R., & Kekitiinwa, A. (2018). Realization of the right to adequate food and the nutritional status of land evictees: A case for mothers/caregivers and their children in rural Central Uganda. *BMC International Health and Human Rights*, 18, 21. <https://doi.org/10.1186/s12914-018-0162-6>
339. Nasrin Banu & Shahab Fazal (2017). A pragmatic assessment of livelihood status in the peri-urban interface: a case from developing India. *Asian Geographer*. Volume 34, 2017 - Issue 1. <https://doi.org/10.1080/10225706.2017.1296366>
340. Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129–132. <https://doi.org/10.1177/1362168815572747>
341. National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research*. U.S. Government Printing Office.
342. Nguyen, Q., & Kim, D. C. (2020). Reconsidering rural land use and livelihood transition under the pressure of urbanisation in Vietnam: A case study of Hanoi. *Land Use Policy*, 99, 104896. <https://doi.org/10.1016/j.landusepol.2020.104896>.
343. Nie, F., Zhang, L., & Qu, C. (2010). Rural economies and ICT policies for rural development: using the sustainable framework to analyse ICT applications for promotion of agricultural livelihoods of rural community. AFITA 2010 *International Conference*.

344. Nikpeyma, N., Maroufizadeh, S., & Esmaeili, M. (2020). The importance of reporting the effect size in quantitative studies. 8(1), 4–6. <https://doi.org/10.18502/NPT.V8I1.4486>
345. Niyitunga, E. B., & Musya, J. K. (2024). Dependency syndrome within Africa's international relations: A hindrance to sustainable development in Africa. *Journal of Infrastructure, Policy and Development*, 8(9), 7052. <https://doi.org/10.24294/jipd.v8i9.7052>.
346. North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
347. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
348. Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Harvard University Press.
349. O’Cathain, A., Murphy, E., & Nicholl, J. (2010). Three techniques for integrating data in mixed methods studies. *BMJ*, 341, c4587.
350. Obayelu, A. E. (2012). Households' food security status and its determinants in North-Central Nigeria. *Food Economics*, 9(4), 241–256. <https://doi.org/10.1080/2164828X.2013.845559>
351. Odero, K.K. (2006). Information capital: 6th asset of sustainable livelihood framework(Review). *Discovery and Innovation* Volume 18, Issue 2, June 2006, Pages 83-91.
352. OECD/PSI (2020), *Rural Development Strategy Review of Ethiopia: Reaping the Benefits of Urbanisation*, OECD Development Pathways, OECD Publishing, Paris, <https://doi.org/10.1787/a325a658-en>.

353. Olsson, P., Gunderson, L. H., Carpenter, S. R., Ryan, P., Lebel, L., Folke, C., & Holling, C. S. (2006). Shooting the rapids: Navigating transitions to adaptive governance of social-ecological systems. *Ecology and Society*, 11(1).
354. Onyebueke, V., Walker, J., Lipietz, B., Ujah, O., & Ibezim-Ohaeri, V. (2020). Urbanisation-induced displacements in peri-urban areas: Clashes between customary tenure and statutory practices in Ugbo-Okonkwo Community in Enugu, Nigeria. *Land Use Policy*, 99. <https://doi.org/10.1016/j.landusepol.2020.104884>.
355. Ormerod, R. (2021). The pragmatist stance in operational research. *European Journal of Operational Research*, 292(1), 1–19.
356. Ostrom, E. (2005). Understanding institutional diversity. Princeton University Press.
357. Ostrom, E. (2009). A general framework for analyzing sustainability of socialecological systems. *Science*, 325(5939), 419-422.
358. Ostrom, E. (2011). Background on the institutional analysis and development framework. *Policy Studies Journal*, 39(1), 7-27.
359. Ostrom, E., & Cox, M. (2010). Moving beyond panaceas: A multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation*, 37(4), 451-463.Press.
360. Pampel, F. C. (2000). Logistic regression: A primer. SAGE.
361. Parkinson, S., & Ramirez, R. (2007). Using a Sustainable Livelihoods Approach to Assessing the Impact of ICTs in Development. *The Journal of Community Informatics*, 2(3). <https://doi.org/10.15353/joci.v2i3.2072>
362. Patidar, H. (2019). Livelihood Security in Rural India: Reflections from some Selected Indicators. *Forum for Development Studies*, 46(1). <https://doi.org/10.1080/08039410.2018.1519517>
363. Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE.

364. Paulos Lukas, 2017, Impact of Urban Expansion on the Livelihood of Peri- Urban Agricultural Community: Case of Wolaita Sodo Town, Southern Ethiopia. *The International Institute for Science, Technology and Education (IISTE)*.
365. Pearl, J. (2009). *Causality: Models, reasoning, and inference* (2nd ed.). Cambridge University Press.
366. Pedrazzini, Y., Vincent-Geslin, S., & Thorer, A. (2014). Violence of urbanisation, poor neighbourhoods and large-scale projects: Lessons from Addis Ababa, Ethiopia. *Built Environment*, 40(3). <https://doi.org/10.2148/benv.40.3.394>.
367. Peluso, N. L., & Lund, C. (2011). New frontiers of land control: Introduction. *The Journal of Peasant Studies*, 38(4), 667–681. <https://doi.org/10.1080/03066150.2011.607692>
368. Persson, M. (2016). *Compensation practices in the Ethiopian expropriation process: A case study from Amhara National Regional State, Ethiopia* (Report). IGAD Land Governance Programme.
369. Petrov, D., & Romaguera-de-la-Cruz, M. (2024). Measuring economic insecurity by combining income and wealth: an extended well-being approach. *Review of Economics of the Household*. <https://doi.org/10.1007/s11150-024-09700-1>
370. Pham, V. C., Pham, T. T. H., Tong, T. H. A., Nguyen, T. T. H., & Pham, N. H. (2015). The conversion of agricultural land in the peri-urban areas of Hanoi (Vietnam): patterns in space and time. *Journal of Land Use Science*, 10(2). <https://doi.org/10.1080/1747423X.2014.884643>
371. Pohar, M., Blas, M., & Turk, S. (2004). Comparison of logistic regression and linear discriminant analysis: A simulation study. *Metodološki zvezki*, 1(1), 143–161. ProQuest
372. Ponterotto, J. G. (2005). *Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science*. *Journal of Counseling Psychology*, 52(2), 126–136. <https://doi.org/10.1037/0022-0167.52.2.126>

373. Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, 52(2), 126–136. <https://doi.org/10.1037/0022-0167.52.2.126>
374. Popper, K. (1959). *The logic of scientific discovery*. Hutchinson.
375. Pradhan, S., Jallaph, V., & Naberia, S. (2020). A review on understanding the sustainable livelihood security of rural household in India. *International Journal of Current Microbiology and Applied Sciences*, Special Issue 11, 639–648.
376. Prajapati, M., Kd, S., & Patel R. (2014). Measurement of the Existing Sustainable Livelihood of the Tribal and Non-Tribal Farmers. *Adv. Res. Agri. Vet. Sci*, 1(2).
377. Pregibon, D. (1981). Logistic regression diagnostics. *The Annals of Statistics*, 9(4), 705–724. <https://doi.org/10.1214/aos/1176345513> Project Euclid
378. Press, S. J., & Wilson, S. (1978). Choosing between logistic regression and discriminant analysis. *Journal of the American Statistical Association*, 73(364), 699–705. <https://doi.org/10.1080/01621459.1978.10480080>
379. Pribadi, D. O., & Pauleit, S. (2015). The dynamics of peri-urban agriculture during rapid urbanisation of Jabodetabek Metropolitan Area. *Land Use Policy*, 48. <https://doi.org/10.1016/j.landusepol.2015.05.009>.
380. Qi, L., Leif, S., Peilin, W., & Juan, L. (2005). Cultivated land loss arising from the rapid urbanisation in China. *Agrifood Research Reports*.
381. Quang Nguyen & Doo-Chul Kim (2016). Farmers' landholding strategy in urban fringe areas: A case study of a transitional commune near Ho Chi Minh City, Vietnam. *ScienceDirect. Land Use Policy*. Volume 83, April 2019, Pages 95-104. <https://doi.org/10.1016/j.landusepol.2019.01.038>Get rights and content.
382. Quang, N. V., Minh, N. H., Mai, N. X., Huong, P. Q., & Thang, N. van. (2005). The impact of urbanisation on agriculture in Hanoi. *Searusyn*.

383. Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, 3(9), 369–387.
384. Quimbayo Ruiz, G. A., Kotilainen, J., & Salo, M. (2020). Reterritorialization practices and strategies of campesinos in the urban frontier of Bogotá, Colombia. *Land Use Policy*, 99. <https://doi.org/10.1016/j.landusepol.2020.105058>.
385. Rakodi, C. (1998). Review of the poverty relevance of the peri-urban interface production system research. Report for the DFID Natural Resources Systems Research Programme, 2nd Draft.
386. Rakodi, C., & Lloyd-Jones, T. (2002). Urban livelihoods: A people-centred approach to reducing poverty. Earthscan Publications.
387. Rao, S. (2018). The philosophical paradigm of financial market contagion research. SSRN Working Paper. <https://ssrn.com/abstract=3183951>
388. Ravi, K. N., Ponnusamy, K., Baliram, K. R., & Kumar, M. P. (2016). Impact of Urbanisation on Peri-Urban Farmlands of Farmers in the Bengaluru Metropolitan Region, India. *International Journal of Agriculture Sciences*, 8(52).
389. Richter, J., & Bixler, R. P. (2020). The influence of demographic factors on urban expansion: Evidence from U.S metropolitan areas. *Urban Studies*, 57(8), 1674-1690.
390. Rimal, B. (2012). Urbanisation and the Decline of Agricultural Land in Pokhara Sub-metropolitan City, Nepal. *Journal of Agricultural Science*, 5(1). <https://doi.org/10.5539/jas.v5n1p54>
391. Rimal, B., Zhang, L., Stork, N., Sloan, S., & Rijal, S. (2018). Urban expansion occurred at the expense of agricultural lands in the
392. Robbins, P. (2019). Political ecology: A critical introduction (3rd ed.). Wiley-Blackwell.

393. Roberts, R. E., & Okanya, O. (2022). Measuring the socio-economic impact of forced evictions and illegal demolition: A comparative study between displaced and existing informal settlements. *The Social Science Journal*, 59(1), 119–138. <https://doi.org/10.1016/j.soscij.2018.12.003>.
394. Robeyns, I. (2005). The capability approach: a theoretical survey. *Journal of Human Development*, 6(1), 93–117.
395. Robeyns, I. (2017). Wellbeing, freedom and social justice: The capability approach re-examined. Open Book Publishers.
396. Ruben, R., & Masset, E. (2003). Land markets, risk and distress sales in Nicaragua: The impact of income shocks on rural differentiation. *Journal of Agrarian Change*, 3(4), 481–499. <https://doi.org/10.1111/1471-0366.00063>.
397. Ryan, G. (2018). Introduction to positivism, interpretivism and critical theory. *Nurse Researcher*, 25(4), 41–49. <https://doi.org/10.7748/nr.2018.e1466>
398. Sadekin, Md Nazmus, Islam, Rabiul, Ali, Jamal and Ghani, Ahmad Bashawir Abdul (2021). Assessing the impact of climate change on small-scale fisheries livelihood vulnerability index. *Academy of Strategic Management Journal* (2021). 20 (4).
399. Sajjad, H., & Nasreen, I. (2016). Assessing farm-level agricultural sustainability using site-specific indicators and sustainable livelihood security index: *Evidence from Vaishali district, India*. *Community Development*, 47(5), 602– 619. <https://doi.org/10.1080/15575330.2016.1221437>.
400. Sajjad, H., Nasreen, I., & Ansari, S. A. (2014). Assessing spatiotemporal variation in agricultural sustainability using Sustainable Livelihood Security Index: Empirical illustration from Vaishali District of Bihar, India. *Agroecology and Sustainable Food Systems*, 38(1), 46–68. <https://doi.org/10.1080/21683565.2013.820251>.

401. Salem, M. T. N. & D. P. (2019). Analyzing the driving factors causing urban expansion in the peri-urban areas using logistic regression: A case study of the greater Cairo region. *Infrastructures*, 4(1). <https://doi.org/10.3390/infrastructures4010004>.
402. Sama, A., & Jamal, M. A. (2018). Impact of Urbanisation and Its Effect on Coastal Communities in Chennai Region. *International Review of Business and Economics*, 2.
403. Samat, N., Ghazali, S., Hasni, R., & Elhadary, Y. (2014). Urban expansion and its impact on local communities: A case study of Seberang Perai, Penang, Malaysia. *Pertanika Journal of Social Sciences and Humanities*, 22(2).
404. Samuel Ziem Bonye, Gordon Yenglier Yiridomoh, & Emmanuel K. Derbile (2021) Urban expansion and agricultural land use change in Ghana: Implications for peri-urban farmer household food security in Wa Municipality. *International Journal of Urban Sustainable Development* Volume 13, 2021 - Issue 2.
405. Saqib, S. E., Yaseen, M., Shoukat, A., & Visetnoi, S. (2024). Agricultural land conversion and challenges for tenant farmers: Empirical evidence from Pakistan. *Land Degradation & Development*, 36(3), 802–815. <https://doi.org/10.1002/ldr.5395>.
406. Sati, V. P., Deng, W., Lu, Y., Zhang, S., Wan, J., & Song, X. (2017). Urbanisation and its impact on rural livelihoods: A study of Xichang City Administration, Sichuan Province, China. *Chinese Journal of Urban and Environmental Studies*, 5(4), 1750028. World Scientific Publishing. <https://doi.org/10.1142/S2345748117500282>.
407. Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Pearson Education.
408. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
409. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
410. Sayer, A. (2000). *Realism and social science*. SAGE.

411. Schindler, P. S. (2021). *Business research methods* (13th ed.). McGraw-Hill.
412. Schlosberg, D. (2007). *Defining environmental justice: Theories, movements, and nature*. Oxford University Press.
413. Schlosberg, D., & Carruthers, D. (2010). Indigenous struggles, environmental justice, and community capabilities. *Global Environmental Politics*, 10(4), 12-35.
414. Schmidt, E., Dorosh, P. A., Kedir Jemal, M., & Smart, J. (2018). Ethiopia's spatial and structural transformation: Public policy and drivers of change (ESSP Working Paper No. 119). *International Food Policy Research Institute (IFPRI). Science*, 5(3). <https://doi.org/10.3390/urbansci5030057>.
415. Scoones, I. (1998). Sustainable rural livelihoods: A framework for analysis (IDS Working Paper 72). *Institute of Development Studies*.
416. Scoones, I. (2009). Livelihoods perspectives and rural development. *The Journal of Peasant Studies*, 36(1), 171–196. <https://doi.org/10.1080/03066150902820503>
417. Scudder, T. (2005). *The future of large dams: Dealing with social, environmental, institutional and political costs*. Earthscan.
418. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skillbuilding approach* (7th ed.). Wiley.
419. Sen, A. (1999). *Development as freedom*. Oxford University Press.
420. Serrat, O. (2008). *The sustainable livelihoods approach*. ADB Knowledge Solutions, Asian Development Bank.
421. Serrat, O. (2017). The sustainable livelihoods approach. In *Knowledge Solutions* (pp. 21–26). Springer. https://doi.org/10.1007/978-981-10-0983-9_5
422. Seto, K. C., Fragkias, M., Güneralp, B., & Reilly, M. K. (2011). A global map of human settlement: The role of satellite remote sensing in monitoring urbanisation trends over time. *Remote Sensing*, 3(9), 1947–1976.

423. Seto, K. C., Reenberg, A., Boone, C. G., Fragkias, M., Haase, D., Langanke, T., ... & Simon, D. (2012). Urban land teleconnections and sustainability. *Proceedings of the National Academy of Sciences*, 109(20), 7687-7692.
424. Shadeya, A. (2015). *Assessment of post-eviction choices on livelihood diversification strategies of households in Mau Forest, Kenya* (Master's thesis, University of Nairobi). University of Nairobi eRepository. (University of Nairobi eRepository).
425. Shadeya, A. J., Buseinei, J., & Onwonga, R. (2017). Sustainable livelihood approach for assessing household adoption to eviction: Mau Forest, Kenya. *International Journal of Scientific & Technology Research*, 6(8), 378-383.
426. Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasiexperimental designs for generalized causal inference*. Houghton Mifflin.
427. Shaohua Zhan (2019). Accumulation by and without dispossession: Rural land use, land expropriation, and livelihood implications in China. *Journal of Agrarian Change*. <https://doi.org/10.1111/joac.12304>
428. Shaw, A., & Saharan, T. (2019). Urban development-induced displacement and quality of life in Kolkata. *Environment & Urbanisation*, 31(2), 597-614. <https://doi.org/10.1177/0956247818816891>
429. Shili Guo, Lei Lin, Shaoquan Liu, Yali Wei, Dingde Xu, Qianyu Li, Shenglin Su (2019). Interactions between sustainable livelihood of rural household and agricultural land transfer in the mountainous and hilly regions of Sichuan, China. *Sustainable Development*. <https://doi.org/10.1002/sd.1937>.
430. Shim, I., & von Peter, G. (2007). Distress selling and asset market feedback. *Financial Markets, Institutions & Instruments*, 16(5), 243-291.
431. Siciliano, G. (2014). Rural-Urban migration and domestic land grabbing in China. *Population, Space and Place*, 20(4). <https://doi.org/10.1002/psp.1830>.

432. Siddique, G., & Mukherjee, N. (2017). Transformation of agricultural land for urbanisation, infrastructural development and question of future food security: Cases from parts of Hugli District, West Bengal. *Space and Culture, India*, 5(2). <https://doi.org/10.20896/saci.v5i2.269>.
433. Silva, A. B., et al. (2018). Pragmatism and management research: Reflections and a proposal. *RAE—Revista de Administração de Empresas*, 58(3), 268–279.
434. Simon, D. (2008). Urban environments: issues on the peri-urban fringe. *Annual Review of Environment and Resources*, 33, 167-185.
435. Sinclair, R. (1967). Von Thünen and urban sprawl. *Annals of the Association of American Geographers*, 57(1), 72-87.
436. Singh, P. K., & Hiremath, B. N. (2010). Sustainable livelihood security index in a developing country: A tool for development planning. *Ecological Indicators*, 10(2), 442–451. <https://doi.org/10.1016/j.ecolind.2009.07.015> ResearchGate
437. Singh, S., & Nayak, S. (2020). Development of sustainable livelihood security index for different agro-climatic zones of Uttar Pradesh, India. *Journal of Rural Development*, 39(1). <https://doi.org/10.25175/jrd/2020/v39/i1/125991>.
438. Skog, K. L., & Steinnes, M. (2016). How do centrality, population growth and urban sprawl impact farmland conversion in Norway? *Land Use Policy*, 59, 185–196. <https://doi.org/10.1016/j.landusepol.2016.08.035>
439. Sneddon, C. (2000). Sustainability in ecological economics: A critical perspective on the sustainable livelihoods approach. *Ecological Economics*, 35(3), 347-361.
440. Soboka, T. E., & Sori, A. T. (2021). Conceptualizing Modern Urban Governance in the Everyday Language of an African Society1. *Urbanities*, 11(2).
441. Soja, E. W. (2010). Seeking spatial justice. University of Minnesota Press.
442. Sperandei, S. (2014). Understanding logistic regression analysis. *Biochimica Medica*, 24(1), 12–18. <https://doi.org/10.11613/BM.2014.003>

443. Sreejesh, S., Mohapatra, S., & Anusree, M. R. (2014). *Business research methods: An applied orientation*. Springer.
444. Sridhara, S., Gopakkali, P., Manoj, K. N., Patil, K. K. R., Paramesh, V., Jha, P. K., & Prasad, P. V. V. (2022). Identification of sustainable development priorities for agriculture through sustainable livelihood security indicators for Karnataka, India. *Sustainability*, 14(3), 1831. <https://doi.org/10.3390/su14031831>
445. Sroka, W., Pölling, B., Wojewodzic, T., Strus, M., Stolarczyk, P., & Podlinska, O. (2019). Determinants of farmland abandonment in selected metropolitan areas of Poland: A spatial analysis on the basis of regression trees and interviews with experts. *Sustainability (Switzerland)*, 11(11). <https://doi.org/10.3390/su11113071>.
446. Stainton, H. (2020). *Research philosophy and the "research onion"* (teaching guide). Tourism Teacher. (Educational overview of ontology, epistemology, axiology, and methodology in research philosophy.)
447. Stake, R. E. (1995). *The art of case study research*. SAGE.
448. StataCorp. (2024). *cloglog — Complementary log–log regression (Stata 18 Base Reference Manual)*. Stata
449. Stebbins, R. A. (2001). *Exploratory research in the social sciences*. SAGE
450. Sustainability Dynamics of Urban Agriculture in the Savannah Ecological Zone of Ghana: A Study of Bolgatanga Municipality . *Frontiers in Sustainable Food Systems*.
451. Szabo, S. (2016). Urbanisation and food insecurity risks: Assessing the role of human development. *International Development Planning Review*, 38(3), 299–316. <https://doi.org/10.3828/idpr.2016.18>
452. Tacoli, C. (1998). Rural-urban interactions: a guide to the literature. *Environment and Urbanisation*, 10(1), 147-166.

453. Tacoli, C. (2003). The links between urban and rural development: Environment and urbanisation. *Environment and Urbanisation*, 15(1), 3–12. <https://doi.org/10.1177/095624780301500111>.
454. Tacoli, C. (2020). Urbanisation, rural-urban migration and urban poverty. International Institute for Environment and Development.
455. Tadesse, B., & Baye, F. (2024). The impact of land expropriation on changing livelihoods: The case of displaced peri-urban farmers in Kon and Gashena towns, Ethiopia. *Heliyon*, 10(11), e31942. <https://doi.org/10.1016/j.heliyon.2024.e31942>.
456. Tadesse, I. and Imana, G. (2017). Prospects and Challenges of Urbanisation on the Livelihood of Farming Community Surrounding Finfinne. *American Research Journal of Humanities and Social Sciences*,3(1). <https://doi.org/10.21694/2378-7031.17004>.
457. Tan, R., Wang, R., & Heerink, N. (2020). Liberalizing rural-to-urban construction land transfers in China: Distribution effects. *China Economic Review*, 60, 101147. <https://doi.org/10.1016/j.chieco.2018.01.001>.
458. Tang, J., & Di, L. (2019). Past and future trajectories of farmland loss due to rapid urbanisation using Landsat imagery and the Markov-CA model: A case study of Delhi, India. *Remote Sensing*, 11(2). <https://doi.org/10.3390/rs11020180>.
459. Tarai region of Nepal from 1989 to 2016. *Sustainability* (Switzerland), 10(5). <https://doi.org/10.3390/su10051341>
460. Tareke, K. M. (2025). Do urban safety net programs affect the financial inclusion and food security of households, primarily women participating in urban agriculture? A triangulative exploration of Ethiopia. *Frontiers in Sustainable Food Systems*, 9, 1503322. <https://doi.org/10.3389/fsufs.2025.1503322>
461. Tashakkori, A., & Teddlie, C. (2010). *SAGE handbook of mixed methods in social & behavioral research* (2nd ed.). SAGE.

462. Tassie Wegedie (2018). Determinants of peri-urban households' livelihood strategy choices: An empirical study of Bahir Dar city, Ethiopia. *Cogent Social Sciences*, 4(1). <https://doi.org/10.1080/23311886.2018.1562508>.
463. Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
464. Teddlie, C., & Tashakkori, A. (2009). Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences. SAGE.
465. Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. SAGE.
466. Tefera, J. (2020). Impacts of Urban Expansion on the Livelihood of Farming Community in Peri-Urban Areas of Dessie Town Using GIS and Remote Sensing Techniques. *Joherd.Com*, 3(3).
467. Teklemariam, A. T., & Cochrane, L. (2021). The rush to the peripheries: Land rights and tenure security in Peri-Urban Ethiopia. *Land*, 10(2). <https://doi.org/10.3390/land10020193>.
468. Telila, S. T. (2020). The Impact of Rapid Growth of Urbanisation and Urbanism in Eastern Ethiopia. *Journal La Sociale*, 1(3), 34-44. <https://doi.org/10.37899/journal-la-sociale.v1i3.136> .
469. Terfa, B. K., Chen, N., Liu, D., Zhang, X., & Niyogi, D. (2019). Urban expansion in Ethiopia from 1987 to 2017: Characteristics, spatial patterns, and driving forces. *Sustainability (Switzerland)*, 11(10). <https://doi.org/10.3390/su11102973>.

470. Terfa, B. K., Chen, N., Zhang, X., & Niyogi, D. (2020). Urbanisation in small cities and their significant implications on landscape structures: The case in Ethiopia. *Sustainability (Switzerland)*, 12(3). <https://doi.org/10.3390/su12031235>.
471. Tesfaghiorghis, H. (1986). The growth of urbanisation in Ethiopia, 1966-1984. *Eastern Africa Economic Review*, 2(2).
472. Thi Ha ThanhNguyen, Van TuanTran, Quang ThanhBui, Quang HuyMan, & Timo de VriesWalter (2016). Socioeconomic effects of agricultural land conversion for urban development: Case study of Hanoi, Vietnam. *Land Use Policy*, Volume 54, July 2016, Pages 583-592.
473. Thi, N. P. K. M. & F. H. (2021). Impacts of agricultural land acquisition for urbanisation on agricultural activities of affected households: A case study in Huong Thuy town, Thua Thien Hue province, Vietnam. *Sustainability (Switzerland)*, 13(15). <https://doi.org/10.3390/su13158559>.
474. Tilahun Dires, Derjew Fentie, Yeneneh Hunie, Worku Nega, Mulugeta Tenaw, Sayeh Kassaw Agegnehu, and Reinfried Mansberger. (2021). Assessing the Impacts of Expropriation and Compensation on Livelihood of Farmers: The Case of Peri-Urban Debre Markos, Ethiopia. *Land* 2021, 10(6), 614; <https://doi.org/10.3390/land10060614>.
475. Tora, T. T., Degaga, D. T., & Utallo, A. U. (2022). Impacts of livelihood assets on livelihood security in drought-prone Gamo lowlands of southwest Ethiopia. *Geography and Sustainability*, 3(1), 58–67. <https://doi.org/10.1016/j.geosus.2022.02.002>.
476. Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837–851.
477. Tran Quang Tuyen (2013). Farmland Acquisition and Household Livelihoods in Hanoi's Peri-Urban Areas A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy (PhD) at The University of Waikato.

478. Tuan, N. T. (2021). The consequences of expropriation of agricultural land and loss of livelihoods on those households who lost land in da Nang, Vietnam. *Environmental and Socio-Economic Studies*, 9(2). <https://doi.org/10.2478/environ2021-0008>.
479. Tufa, D. E., & Megento, T. L. (2022). The effects of farmland conversion on livelihood assets in peri-urban areas of Addis Ababa Metropolitan City: The case of Akaki Kaliti sub-city, Central Ethiopia. *Land Use Policy*, 119, 106201.
480. Tura, H. A. (2018). Land rights and land grabbing in Oromia, Ethiopia. *Land Use Policy*, 70. <https://doi.org/10.1016/j.landusepol.2017.10.024>.
481. Turner, B. L., Lambin, E. F., & Reenberg, A. (2007). The emergence of land change science for global environmental change and sustainability. *Proceedings of the National Academy of Sciences*, 104(52), 20666-20671.
482. Tuyen, T. Q., Lim, S., Cameron, M. P., & Van Huong, V. (2014). Farmland loss and livelihood outcomes: a micro econometric analysis of household surveys in Vietnam. *Journal of the Asia Pacific Economy*, 19(3). <https://doi.org/10.1080/13547860.2014.908539>.
483. Tuyen, Tran, and Steven Lim (2011). Farmland acquisition and livelihood choices of households in Hanoi's peri-urban areas. *Economic Bulletin of Senshu University* Vol.46, No.1, 19-48, 2011.
484. Udoh, E. J., Akpan, S. B., & Uko, E. F. (2017). Assessment of sustainable livelihood assets of farming households in Akwa Ibom State, Nigeria. *Journal of Sustainable Development*, 10(4), 83–96. <https://doi.org/10.5539/jsd.v10n4p83>
485. UN Committee on Economic, Social and Cultural Rights (CESCR). (1997). General Comment No. 7: The right to adequate housing (Art. 11.1 of the Covenant): Forced evictions. (E/1998/22).

486. UN Habitat and UN Human Right (2014). Forced Eviction. Fact Sheet No. 25/Rev.1
487. UNDP. (2013). Resilience: A key to sustainable development and poverty reduction in Africa.
488. UN-Habitat. (2018). The State of African Cities 2018: The geography of African investment. United Nations Human Settlements Programme.
489. United Nations Human Settlements Programme (UN-Habitat). (2016). *World Cities Report 2016: Urbanisation and development—Emerging futures*. UN-Habitat.
490. United Nations. (2019). World urbanisation prospects: The 2018 revision. United Nations Department of Economic and Social Affairs, Population Division. <https://population.un.org/wup>.
491. Urbanisation and Its Impact on Rural Livelihoods: A Study of Xichang City Administration, Sichuan Province, China. *Chinese Journal of Urban and Environmental Studies* Vol. 05, No. 04, 1750028 (2017)Free Access
492. Valette, É., Chéry, J.-P., Debolini, M., Azodjilande, J., François, M., & el Amrani, M. (2019). Urbanisation of the peripheral areas of Meknès (Morocco) and the conversion of agricultural land: Case study of the Naïji agricultural cooperative. *Cahiers Agricultures*, 22(6). <https://doi.org/10.1684/agr.2013.0656>.
493. Valladares-Neto, J. (2018). Effect size: a statistical basis for clinical practice. 33(1), 84–90. <https://doi.org/10.15448/1980-6523.2018.1.29437>
494. Vandercasteelen, J., Beyene, S. T., Minten, B., & Swinnen, J. (2018). Big cities, small towns, and poor farmers: Evidence from Ethiopia. *World Development*, 106. <https://doi.org/10.1016/j.worlddev.2018.03.006>.
495. Vann, B., Simpson, J., & Coleman, M. (2014). Development and validation of the Vannsimpco Leadership Survey (VLS).

496. Véron, R. (2006). Remaking urban environments: The political ecology of air pollution in Delhi. *Environment and Planning A*, 38(11), 2093-2109.
497. Vishwambhar Prasad SATI, Wei DENG, Yafeng LU, Shaoyao ZHANG, Jiangjun WAN and Xueqian SONG, 2017.
498. Vishwambhar Prasad SATI, DENG Wei, LU Yafeng, ZHANG Shaoyao and WAN Jiangjun and SONG Xueqian, (2017). Urbanisation and Its Impact on Rural Livelihoods: A Study of Xichang City Administration, Sichuan Province, China. *Chinese Journal of Urban and Environmental Studies* Vol. 5, No. 4 (2017) 1750028 (17 pages) © World Scientific Publishing Company and Social Sciences Academic Press (China) DOI: 10.1142/S2345748117500.
499. Vogt, J. M., Epstein, G. B., Mincey, S. K., Fischer, B. C., & McCord, P. (2015). Putting the "E" in SES: Unpacking the ecology in the Ostrom social-ecological system framework. *Ecology and Society*, 20(1).
500. Wakitole Dadi, Messay Mulegeta, & Negussie Simie (2012). Urbanisation and its effects on income diversification of farming households in Adama district, Ethiopia. *Cogent Economics & Finance* (2022), 10: 2149447 <https://doi.org/10.1080/23322039.2022.2149447>.
501. Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A. (2004). Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society*, 9(2).
502. Walker, G. (2012). Environmental justice: Concepts, evidence and politics. Routledge.
503. Wei, L. H., & Shiangyen, T. (2012). Factors Influencing a New Information and Communication Technology Adoption in Malaysia's Agriculture Community: Applying the Sustainable Livelihoods Approach. *International Journal of E Business and E Government Studies*, 4(2).

504. Weldearegay, S. K., Tefera, M. M, and Feleke, S.T. (2021). Impact of urban expansion to peri-urban smallholder farmers' poverty in Tigray, North Ethiopia
505. Weldegebriel, A., Assefa, E., Janusz, K., Tekalign, M., & van Rompaey, A. (2021). Spatial Analysis of Intra-Urban Land Use Dynamics in Sub-Saharan
506. Williams, C. (2007). Research methods. *Journal of Business & Economic Research*, 5(3), 65–72.
507. Winner, L. (1993). Upon opening the black box and finding it empty: Social constructivism and the philosophy of technology. *Science, Technology, & Human Values*, 18(3), 362-378.
508. Wiraszka, P., & Karpińska, U. (2020). Economic security as an element of the region's development process on the example of communes of the świętokrzyskie voivodship. *Baltic Journal of Economic Studies*, 6(3), 67–75.
<https://doi.org/10.30525/2256-0742/2020-6-3-67-75>
509. Wogedie, S., Gebeyehu, Z., & Mohammed, H. (2022). Impact of urban expansion on income of evicted farmers in the peri-urban areas of Amhara Regional State, Ethiopia: Endogenous switching regression approach.
510. Wolde-Michael, A. (1973). Urban Development in Ethiopia (1889-1925): Early Phase. *Journal of Ethiopian Studies*, 11(1).
511. Wolman, A. (1965). The metabolism of cities. *Scientific American*, 213(3), 178-193.
512. Wondimu, R. E. (2011). Rapid Urbanisation and Housing Shortage in Africa: The Opportunity within the Problem for Ethiopia. *Department of Real Estate and Construction Management*, 114.
513. Woolcock, M., & Narayan, D. (2000). Social capital: Implications for development theory, research, and policy. *The World Bank Research Observer*, 15(2), 225–249.
514. Worku, G. (2020), The Impacts of Urban Expansion on Livelihoods of the Surrounding Rural Society: The Case of Tefki Town, Oromia Special Zone Surrounding

Finfinne. *Asian Journal of Humanities and Social Studies* (ISSN: 2321 - 2799) Volume 8 – Issue 6, December 2020 . Asian Online Journals (www.ajouronline.com). Geography and Environmental Studies at Salale University, Ethiopia Email: gadisaworku98 [AT] gmail.com.

515. World Bank (2020). Ethiopia - Urban Productive Safety Net and Jobs Project.
516. World Bank. (2015). Ethiopia—Urbanisation review: Urban institutions for a middle-income Ethiopia. Washington, DC: World Bank.
517. World Bank. (2015). Stocktaking of the housing sector in Sub-Saharan Africa: Challenges and opportunities (Vol. 2: Ethiopia). World Bank Group.
518. World Bank. (2017). *Land Governance Assessment Framework (LGAF) implementation in Ethiopia: Final country report*. Washington, DC: World Bank.
519. World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191–2194. <https://doi.org/10.1001/jama.2013.281053>
520. Wu Zhilong, Zeng Tian, and Huang Jin (2022). "Sustainable Livelihood Security in the Poyang Lake Eco-economic Zone: Ecologically Secure, Economically Efficient or Socially Equitable?," *Journal of Resources and Ecology* 13(3), 442-457, (27 April 2022). <https://doi.org/10.5814/j.issn.1674-764x.2022.03.009>.
521. Wu, X., Qi, X., Yang, S., Ye, C., & Sun, B. (2019). Research on the intergenerational transmission of poverty in rural China based on sustainable livelihood analysis framework: A case study of six poverty-stricken counties. *Sustainability (Switzerland)*, 11(8). <https://doi.org/10.3390/su11082341>.
522. Wubneh, M. (2018). Policies and praxis of land acquisition, use, and development in Ethiopia. *Land Use Policy*, 73, 170–183. <https://doi.org/10.1016/j.landusepol.2018.01.017>.

523. Xu, G., Jiao, L., Liu, J., Shi, Z., & Zheng, X. (2019). How does urban population density decline over time? An empirical link with urban expansion. *Landscape and Urban Planning, 183*, 59–69.
524. Yang, B., Feldman, M. W., & Li, S. (2021). The status of family resilience: Effects of sustainable livelihoods in rural China. *Social Indicators Research, 153*(3), 1041–1064. <https://doi.org/10.1007/s11205-020-02518-1>
525. Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report, 20*(2), 134–152.
526. Yeneabat, Mulu; Johnson, Alice. (2007). *Pottery Production an Asset for Women Livelihood Case Study on Kechene Women Potters in Addis Ababa*. (Addis Ababa University)
527. Yimam, A. (2017). Urban expansion and its impact on the livelihood of peripheral farming communities: The case of Kutaber Town, Amhara Region, Ethiopia [Master's thesis, Addis Ababa University]. Addis Ababa University Institutional Repository.
528. Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). SAGE.
529. Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). SAGE.
530. You, H., & Zhang, X. (2017). Sustainable livelihoods and rural sustainability in China: Ecologically secure, economically efficient or socially equitable? *Resources, Conservation and Recycling, 120*. <https://doi.org/10.1016/j.resconrec.2016.12.010>.
531. Zarafshani, K., et al. (2020). Applying the Technology Acceptance Model to [context]: Evidence on reliability of PU and PEOU.
532. Zaremohzzabieh, Z., Ismail, I. A., Ismail, N., Omar, S. Z., & Bolong, J. (2021). Information and Communication Technologies and Sustainable Livelihood Opportunities: A Study of Information Behavior Among Malaysian Youth. *Asian Social Science, 17*(11). <https://doi.org/10.5539/ass.v17n11p57>

533. Zhang, X., & Lu, H. (2011). Compensation for compulsory land acquisition in China: To rebuild expropriated farmers' long-term livelihoods (Working paper). University of California eScholarship.
534. Zhou, B. B., & Lv, L. (2020). Understanding the dynamics of farmland loss in a rapidly urbanizing region: a problem-driven, diagnostic approach to landscape sustainability. *Landscape Ecology*, 35(11). <https://doi.org/10.1007/s10980-020-01074-w>.
535. Zhou, B. B., Aggarwal, R., Wu, J., & Lv, L. (2021). Urbanisation-associated farmland loss: A macro-micro comparative study in China. *Land Use Policy*, 101. <https://doi.org/10.1016/j.landusepol.2020.105228>.
536. Zhou, T., Koomen, E., & Ke, X. (2020). Determinants of Farmland Abandonment on the Urban–Rural Fringe. *Environmental Management*, 65(3). <https://doi.org/10.1007/s00267-020-01258-9>.

ANNEXES

ANNEX .1: MEDIAN RANKS OF THE SLSI

Eviction Statu	No. of HH	Mean Rank	Sum of ranks
Non-Evicted households (0)	223	262.44	58525
Evicted households (1)	223	184.56	41156
Total 446			

ANNEX 2: TEST STATISTICSA

	Total_SLSI
Mann-Whitney U	16180
Wilcoxon W	41156
Z	-6.381
Asymp. Sig. (2-tailed)	0
a. Grouping Variable: Eviction (1) and non-eviction (0)	

ANNEX 3: CLASSIFICATION TABLEA,B

Initial Classification or Step 0	Predicted		Percentage correct	
	SLS_Coded (1 >= 0.3736, and 0 = < 0.3736)	SLS_Coded (1 >= 0.3736, and 0 = < 0.3736)		
	SLS Not Secured	SLS Secured		
SLS_Coded (1 >= 0.3736, and 0 = < 0.3736)	SLS Not Secured	0	229	0
	SLS Secured	0	217	100
Overall percentage				48.7

Annex 4: Classification Tablea

Observed Classification at step 1		Predicted		Percentage correct
		SLS Secured	Not SLS Secured	
SLS_Coded (1 >= 0.3736, and 0 = < 0.3736)	SLS Not Secured	175	54	76.4
	SLS Secured	26	191	88
Overall percentage				82.1

a. The cut value is .374

ANNEX 5: OMNIBUS TESTS OF MODEL COEFFICIENTS

		Chi-square	df	Sig.
Step 1	Step	277.341	16	0
	Block	277.341	16	0
	Model	277.341	16	0

ANNEX 6 : HOSMER AND LEMESHOW TEST

Step	Chi-square	df	Sig.
1	5.254	8	0.73

ANNEX 7 SUMMARY OF THE MODEL

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	340.623 ^a	0.463	0.618

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

ANNEX 8: ECONOMIC SECURITY MEAN RANKS

	Status of Eviction	N	Mean Rank	Sum of Ranks
Economic Security Level	Evicted HHs	223	204	45492
	None Evicted HHs	223	243	54189
	Total	446		

ANNEX 9 : TEST STATISTICS

	Economic Security Level
Mann-Whitney U	20516
Wilcoxon W	45492
Z	-3.695
Asymp. Sig. (2-tailed)	0

a. Grouping Variable: Status of Eviction

ANNEX 10 CLASSIFICATION TABLEA,B

Step at initial stage	Observed	Predicted		Percentage correct
		Economic Security		
		Not secured	Secured	
	Not Secured	0	235	0 100
Step 0	Economic Security Secured	0	211	
Overall percentage				47.3

a. The constant is included in the model.

ANNEX 11 : CLASSIFICATION TABLEA

	Observed	Predicted		Percentage correct
		Economic Security		
		Not Secured	Secured	
Step 1	Economic Security Not secured	94	141	40
	Secured	37	174	82.5
Overall percentage				60.1

a. The cut value is .377

ANNEX 12: OMNIBUS TESTS OF MODEL COEFFICIENTS

		Chi-square	df	Sig.
	Step	59.688	15	0
Step 1	Block	59.688	15	0
	Model	59.688	15	0

ANNEX 13: HOSMER AND LEMESHOW TEST

Step	Chi-square	df	Sig.
1	5.333	8	0.721

ANNEX 14: MODEL SUMMARY

Step	-2 Log-likelihood	Cox & Snell R Square	Nagelkerke R Square
1	557.307 ^a	0.125	0.167

Annex 15 : Ranks

	Eviction (1) noneviction (0)	and N	Mean Rank	Sum of ranks
	Non-Evicted HH	223	301.28	67186
Food Security	HH Evicted	223	145.72	32495
	Total	446		

ANNEX 16 : TEST STATISTICS

	Food Security
Mann-Whitney U	7519
Wilcoxon W	32495
Z	-13.703
Asymp. Sig. (2-tailed)	0

a. Grouping Variable: Eviction (1) and non-eviction (0)

ANNEX 17: CLASSIFICATION TABLEA,B

		Observed	Predicted		Percentage Correct
			Food Security		
			Not Secured	Secured	
Step 0	Food Security	Not Secured	251	0	100
		Secured	195	0	0
Overall percentage					56.3

a. The constant is included in the model.

ANNEX 18: CLASSIFICATION TABLEA

		Observed	Predicted		Percentage Correct
			Food Security		
			Not Secured	Secured	
Step 1	Food Security	Not Secured	228	23	90.8
		Secured	31	164	84.1
Overall percentage					87.9

a. The cut value is .500

ANNEX 19: OMNIBUS TESTS OF MODEL COEFFICIENTS

		Chi-square	Df	Sig.
Step		358.1	17	0
Step 1	Block	358.1	17	0
	Model	358.1	17	0

ANNEX 20: HOSMER AND LEMESHOW TEST

Step	Chi-square	df	Sig.
1	10.724	8	0.218

ANNEX 21 : MODEL SUMMARY

-2 Log likelihood	Cox & Snell R Square	Nagelkerke Square	R
253.137 ^a	0.552	0.74	

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

ANNEX 22: HOUSEHOLD SURVEY QUESTIONNAIRE

i Consent Form- signed by every respondent.
 ii Date of Interview:..... iii Code
 of the Respondent _____ . _____ iv Questionnaire
 Number: v City
 vi Sub City vii Woreda
 viii
 Kebele/Village/Ketena.....
 ix Date o Interview _____

Sl. No	Questions	Codding Categories	Skip
	Part 1: Demographic characteristics		
1	Category of the household it belongs (Categ HH):	1=Fully Evicted/ displaced 2=Partially evicted/displaced 3=Non-evicted	
2	Gender of the head of the household (TypeHH)	0 =Female 1= Male	
3	Gender of the respondent? (GendRes)	0 =Female 1= Male	
4	Age of the respondent (AgeRes)	Years _____	
5	What is your family size ? (FamSize)	Number _____	

6	Total Number of family members engaged in productive activities (income generating) (FamilyWorkageforce)	No _____	
7	Marital status of the respondent (MartSta)	1= Married 2 = Single 3= Separated/Divorced 4 = Widow / widower	
8	What is level of education of the wife of the respondent? (LevEdu) :	1 = Illiterate 2 = Read and Write 3 = Primary School 4= Secondary School 5 = College/TEVT 6 = University Graduate	
9	What is the level of education of the household head (if the HH head is male)? (LevEdu):	1 = Illiterate 2 = Read and Write 3 = Primary School 4= Secondary School 5 = College/TEVT 6 = University Graduate	
10	What is your current primary occupation? (PrimOccu currently)	1= Agriculture/Farming 2 = Handicraft 3= Business/trader 4= Government official 5= Skilled-Wagedworker 6 = Casual labourer 7 = unemployed 8 = Old/retired/Illness 9 = Others	

11	What is your Primary Occupation before eviction/the displacement? (PrimOccuBefore)	1= Agriculture/Farming 2 = Handicraft 3= Business/trader 4= Government official 5= Skilled-Wagedworker 6 = Casual labourer 7 = unemployed 8 = Old/retired/Illness	
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		9 = Others	
12	What is the condition of residential house the respondent resides in currently? (Typhouse) Note: Improved (Cement concert floor, cement block wall, and CIS roof) = excellent if all are fulfilled, otherwise = bad, if all are not fulfilled or in between 2 -4, if the missing are one, two, or three.	1= Excellent 2 = Very good 3 = good 4 = fair 5 = bad	
13	What is the tenure type of the house you reside in? (Tenure of House)	1= Owned 2= Rented 3 = Kebele/ government owned 4 = Gift	
14	After displacement, family disintegration occurred.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	

15	After displacement, male become more relaxed/leisured.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
16	After displacement, female (women) become more stressed/overburdened.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
17	After displacement, male adults become addicted to liquors and chat.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree	

		5 = strongly disagree	
18	After displacement, youth lost land for farming and become jobless.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
19	After displacement, young children left home.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
20	After displacement, female youth of the family member migrated to urban.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	

21	After displacement, school aged children dropped out of school.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
22	After displacement, some family members become sick.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
23	After displacement, the family life deteriorated.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
24	After displacement, the family income decreased	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
25	After displacement, the family faced food insecurity	1 = Strongly agree 2= agree 3 = I can't decide	

		4 = disagree 5 = strongly disagree	
26	After displacement, the robbery and theft increased.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	

27	After displacement, the family agricultural production has decreased.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
28	After displacement, the social network of the community became weak.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
29	After displacement, the community traditions and culture are distorted	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
30	After displacement, the children forgot their mother-language.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
31	Children and future generation do not have hope to maintain their ancestor's land.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
32	After displacement, the household faced food shortage (food insecure).	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
33	What were the consequences of eviction? (multiple question)		

33-1	Loss of agricultural land	1= Yes 0 = No	
33-2	Loss of grazing land	1= Yes 0 = No	
33-3	loss of mining of stones, aggregate stone, and other construction raw materials land	1= Yes 0 = No	
33-4	Loss of other Property such as housing, or other assets	1= Yes 0 = No	
33-5	Displacement or relocation of households including the distance and conditions of the new location	1= Yes 0 = No	
33-6	Psychological Distress including stress, anxiety, and trauma resulting from eviction.	1= Yes 0 = No	
33-7	Economic Disruption including loss of income, livelihood, and employment.	1= Yes 0 = No	
34	How much does and to what extent the forced eviction has affected the livelihoods and incomegenerating activities of your household?	1= Very high 2= High 3= average or medium 4= low 5= very low	
35	After displacement the family life improved	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	

36	After displacement the family started better income generating scheme	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree	
		5 = strongly disagree	
37	The compensation paid to you was fair or adequate for the land you lost	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	
38	The current land tenure system should be changed.	1 = Strongly agree 2= agree 3 = I can't decide 4 = disagree 5 = strongly disagree	

Sl.No	Economic Security	Coding	Amount	Skip
1.1	Have you obtained cash income from sales of crops (Teff, wheat, barley, chickpea, vegetables, etc) in the past 12 months?	1= Yes 0 = No	If Yes, How much ? _____ _ETB	

1.2	Have you obtained income from sales of livestock (milk, meat, live animal, eggs, sheep, goat, heifer, bull, ox, cow, horse, donkey, etc sold in the year X prices) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.3	Have you obtained income from other jobs/employment (Daily Wage/Causal labour work, Permanent employment, Other, specify) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	

1.4	Have you obtained income from business in the past 12 months livestock trade, grain trade, etc?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.5	Have you obtained income from semi-skill work (pottery carpentry, masonry, electric work, gypsum work, metalwork, mechanics etc.) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	

1.6	Have you received remittances (support from children or relatives working in another country or outside of own home) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.7	Have you received pension income in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.8	Did you receive income from renting out assets (land, house, shops, etc.) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.9	Did you receive income from selling of assets (land, house, shops, etc.) in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.10	Did you receive aid/support/ from the government and/or NGOs in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.11	Have you received Loan from MFIs or banks or informal money lenders in the past 12 months?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	
1.12	Have you cash on hand?	1 = Yes 0 = No	If Yes, How much ? _____ _ETB	

1.13	Have you savings in a bank?	1= Yes 0 = No	If Yes, How much ? _____ _ETB	
1.14	How many of your family members engaged in other income-generating scheme other than agriculture?	Number	_____	
1.15	How do you evaluate the current and before eviction status of your income level ?	1)Excellent 2)Very good 3) Good 4)Bad 5)Very Bad		

Section II Social Network Security of the household

Sl.No	Social Assets	Response Coddng	Skip
2.1	Are you a member of any traditional money saving association such Iqub?	1= Yes 0 = No	
2.2	Are you a member of any Faith Based traditional association (Maheber)?	1= Yes 0 = No	
2.3	Are you a member of any labour exchange group (daboo/jigii member) in your community?	1= Yes 0 = No	
2.4	Are you a member of a Social support group (Afosha/iddir) in your community?	1= Yes 0 = No	
2.5	Do you have relatives whom you rely on to get support in case of emergency or need arises?	1= Yes 0 = No	

2.6	Are you a member of any Farmers' Cooperative organisation?	1 = Yes 0 = No	
2.7	Are you a member of micro and small enterprises in your community?	1 = Yes 0 = No	
2.8	How do you evaluate your status of the overall social capital security?	1 = Excellent 2 = Very good 3 = Good 4 = Bad 5 = Very Bad	

Section III Land Tenure Security

Sl.No	Land Tenure Security	responses coded	Skip
3.1	Have you got official title deed for your total land?,	1 = Yes 0 = No	
3.1.1	If yes, What type of title deed you have?	1 = Official karta, 2 = Green Card 3 = Only receipt of land tax 4 = Other specify	

3.2	Have you got title deed for your residential area?	1= Yes 0 = No	
3.3	Is there any plot of land which you do not have title deed?	1= Yes 0 = No	
3.4	How many hectares of cropland does your HH have (Hectare)?	Ha._____	
3.5	How many hectares of grazing land does your HH have (Hectare)?	Ha._____	
3.6	How many hectares of wasted land do your HH have (Hectare)	Ha._____	
3.7	How many hectares of stone/red soils/ site do your HH have (Ha)?	Ha._____	
3.8	How many square meters of residential land your HH has (m2)?	M2_____	
3.9	Do you feel you may lose your farmland in the future? Why?	1= Yes 0 = No	

3.10	Do you have adequate land for agricultural practice?	1= Yes 0 = No	
3.11	Have you or your HH members ever sold land?	1= Yes 0 = No	

3.11. 1	If yes, how many M2 you sold?	M2 ____	
3.11. 2	If yes, when was the time you sold it?	Year _____	
3.11. 3	If yes, how much you earned from the sold land?	ETB _____	
3.11. 4	If yes, what did you do with the money you earned from the sold land?	1= consumption 2= investment 3= business	

3.11. 5	If Yes, what was the reason you sold your land?	1= invest in construction of better residential house 2= purchase of livestock 3 = start business 4= consumption and family expenses	
		5 = Fear of land loss or land grabbing 6= Other, specify	
3.12	Have you ever bought land?	1= Yes 0 = No	

3.12. 1	If yes, what was your reason of purchasing land?	1= residential house construction 2= agriculture activity expansion = Other specify	
3.13	How do you evaluate your status of land tenure security status?	1= Excellent 2=Very good 3=Good 4= Bad 5= Very Bad	

Section IV. Human Resource Security

Sl.No	Education	Response Coding	Skip
4.1	What is your education level?	1= Illiterate (cannot read and write)	
		2= Only Read and write basics 3= Elementary school complete 4= High school complete 5= TVET graduate 6 = University graduate	

4.2	Do you have a special Marketable Skill by experience or by training (woodwork, metalwork, electric work, masonry, pottery, others)?	1 = Yes 0 = No	
4.3	Are you an experienced /Conventional Business person?	1 = Yes 0 = No	
4.4	Are you an experienced Commission Agent?	1 = Yes 0 = No	
4.5	Is there anybody from your HH had a chronic health problem?	1 = Yes 0 = No	
4.6	Is there anyone from the HH who has a disability?	1 = Yes 0 = No	
4.7	Is anybody from your HH sick and unable to go to work/school in the last 12 months?	1 = Yes 0 = No	
4.8	Can you afford to get medical services from health institutions?	1 = Yes 0 = No	
4.9	How do you evaluate your human resource security /capital?	1 = Excellent 2 = Very good 3 = Good 4 = Bad 5 = Very Bad	

Section V. Physical Assets Security

SI No	Physical Asset	Responses Coded		Skip
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5.1	What is the land size of your residential area?	___m2		
4.2	You have private residential house.	1= Yes 0 = No		
4.3	What is the size of your house in square meter?	___m2		
4.4	How many rooms you have in your house?	No__		
4.3	You have house for rent other than the one you reside in	1= Yes 0 = No		
4.4	You Have you got a business/shop building.	1= Yes 0 = No		
4.5	Have you got Tricycle Bajaji?	1= Yes 0 = No		
4.6	Have you got a Motorcycle?	1= Yes 0 = No		
4.7	Have you got a Bicycle?	1= Yes 0 = No		

4.8	Have you got a vehicle for family use (sedan)?	1 = Yes 0 = No		
4.9	Do you have a business vehicle (tracks)?	1 = Yes 0 = No		
4.10	Do you have a Horses/Donkeys/Mules cart?	1 = Yes 0 = No	If yes, No__	
4.11	Do you have livestock?	1 = Yes 0 = No	Bull No____ Ox No____ Cow No____ Heifer No____	
4.12	Do you have Sheep/goat?	1 = Yes 0 = No	No.____	
4.13	Do you have Poultry?	1 = Yes 0 = No	No-____	
4.14	Do you have jewelry/precious ornaments?	1 = Yes 0 = No	Value ____	

4.15	How do you evaluate your possession of physical asset?	1= Excellent 2=Very good 3=Good 4= Bad 5= Very Bad		
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Section VI. Infrastructure Service Security

Sl.No	Social services	Responses Coded	Skip
6.1	Primary school exist in our community within the distance of <= 5km.	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	

6.2	Public medical services (Health station and hospital) exist within the distance of ≤ 5 km	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	
6.3	Market centre exist within the distance of ≤ 5 km	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	
		5 = Strongly Disagree	

6.4	Pipe water is connected to your house.	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	
6.5	If you use communal water point (from bono), exists within the distance of ≤ 1 km.	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	
6.5	Your house is connected to electricity from the main grid.	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree,	

		5 = Strongly Disagree	
6.6	Mobile network connection is available in your residential area.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree	
6.7	There is Kebele administration or a police station within a distance of ≤ 5 km.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree	

6.8	Motorable asphalt roads exist within a distance of ≤ 1 km.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree,	
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		5 = Strongly Disagree	
6.7	Good hygienic conditions maintained in your household.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree	

6.8	You have access and use a clean and safe drinking water for your household.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree	
6.10	You have a toilet/ toilet facilities in your household.	1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree	
		5 = Strongly Disagree	

6.11	You got waste disposal site for dry and liquid wastes	1 = Strongly Agree, 2 = Agree, 3= Neutral, 4= Disagree, 5 = Strongly Disagree	
6.12	How do you evaluate your access to public infrastructural services?	1= Excellent 2=Very good 3=Good 4= Bad 5= Very Bad	

VII. Technological Security (ICT Capital)

Sl.No	ICT capital	Responses Coded	Skip
7.1	Does your household own a Smart Mobile Phone?	1= Yes 0 = No	
7.2	Does your household have a Satellite TV Dish/receiver?	1= Yes 0 = No	
7.3	Does your household get updated information concerning their health, family care, income generating,	1= Yes 0 = No	

	modern farming practices, village security situation, etc.?		
7.4	If yes for Q7.3, does the information you get from mobile communication and or from TV, helps you to get income/job, etc. for you?	1= Yes 0 = No	
7.5	Does your household use an ATM to withdraw money?	1= Yes 0 = No	
7.6	Does your household use Mobile Banking or Tele birr for receiving or transferring money or for online purchase?	1= Yes 0 = No	
7.7	Do you have broadband Internet connection in your area?	1= Yes 0 = No	
7.8	Do you use internet for economic activities/ income generation, (job getting, selling or buying) others	1= Yes 0 = No	
7.9	Do you have knowledge of using the internet?	1= Yes 0 = No	
7.10	How do you evaluate your access and use of the ICT technologies?	1= Yes 0 = No	

VIII: Food Security

	Food Security	Responses Coded	Skip
8.1	your household has access to sufficient, safe, and nutritious food in the past 12 months?	1= Yes 0 = No	
8.2	Have your household able to eat healthy and nutritious food throughout the year?	1= Yes 0 = No	

8.3	Have your household eaten enough or adequate kinds of foods throughout the year?	1 = Yes 0 = No,	
8.4	Can you afford to buy food or produce enough food from own farm?	1 = Yes	
		0 = No	
8.5	Does your household produce enough food for your family that would be enough throughout a year?	1 = Yes 0 = No	
8.6	How many quintals of Teff you used to produce every year?	Qt_____	
8.7	How many quintals of wheat you used to produce every year?	Qt_____	
8.8	How many quintals of other crops you used to produce every year?	Qt_____	
8.9	On how many hectares of land you produced Teff every year?	ha_____	
8.10	On how many hectares of land you produced wheat every year?	ha_____	

ANNEX 23: FGD AND KEY INFORMANT INTERVIEWS GUIDES

Date of FGD/KII Interview:.....CODE of the FGD

FGD/KII Number:

City

Sub City

Woreda

Kebele/Village.....

I. Year and consequences of eviction

1. When was the eviction/ displacement/farmland lost occurred? _____ Month/ Year
2. What type of land was mainly lost? _____
3. For what purpose/Why was the land grabbed?_____
4. What were the consequences of the eviction? (multiple question)
5. How much does and to what extent the forced eviction has affected the livelihoods and income-generating activities of your household?

II. Compensation

6. How did you manage or cope up with the eviction?
7. How do you see the effectiveness of the coping mechanisms for the eviction?
8. Have you got or able to secure alternative housing or land after eviction?
9. To what extent your household is resilient or able to adapt and recover from the effects of eviction?
10. What is your households' overall satisfaction with your post-eviction situation?
11. Was the compensation received by all family members? Who received the compensation from the family members? Where children compensated?

12. What is the total amount of compensation you received for the lost farmland? _____ Birr
13. For what purposes, has your household used this amount of compensation?
14. What is the extent of your satisfaction with adequacy of the compensation or fairness of the compensation?
15. What type of compensation is most preferred?
16. What is your view on the compensation price?
17. Who decided on the compensation price and support policy?
18. How much you have trust in government authorities, such as government officials, local leaders, or law enforcement?

19. Have you become dependent on external aid or support for survival?

III. Economic/financial status

20. What is the level of your household's income stability after eviction? 1) Very high 2) high 3) medium 4) low 5) Very low
21. How does the Loss of Agricultural Land exacerbate depriving farming households of their primary source of income?
22. How does the forced evictions can result in the displacement and relocation of peri-urban farming households disrupts established farming practices and livelihoods, affecting the continuity of income-generating activities?
23. How does urban expansion limit the availability of space for diversified activities, and reducing the opportunities for income diversification?
24. How does the urban expansion and forced eviction affect Economic Opportunities in Urban Areas due to competition for jobs and livelihoods in the city can be intense, affecting the overall economic well-being of displaced households?

25. **What are the economic challenges and deprivation among peri-urban households due to urban expansion?**
26. How does the displacement affected the family life in improving or in deteriorating?
27. How does the displacement affect agricultural land, crop production, and productivity?
28. How does the displacement affected in creating new income generating schemes?
29. How does the displacement affect land for agricultural practice?
30. How do you evaluate the current land tenure policy in the peri-urban communities?

31. How does the fate of children and future generation is affected in maintaining their ancestors land?
32. Have you lost agricultural livelihood and assets?
33. Have your household faced food Insecurity and to what extent your household experienced food insecurity in terms of access to sufficient, safe, and nutritious food?
34. Have you lost livestock and assets which are vital for livelihoods?

35. Have you got employment opportunities for your household members after eviction?
36. How does the displacement affected the youth in getting jobs, new skills, business creation skills, etc.?
37. What types of support were offered?
38. Were the supports suitable/adequate?
39. How do you evaluate the support you received to change livelihoods?
40. Did investors and local authorities do what they promised for villagers?
41. After land loss, do you think that looking for a non-farm occupation is very difficult? Why?.
42. After agricultural land was converted to urbanisation, what did the villagers' life look like? Why?

IV. Land Tenure Security

43. Do you think that many households want their farmland to be converted to urban development to receive compensation? Why?
44. Do you think that many households in this community would prefer to rent or sell land to others for any purpose? Why?
45. Do you agree with the current land acquisition policy for urban development? Why?
46. What type of land tenure system do you prefer?
47. Have your household secured property rights in your new locations, considering issues related to land ownership or housing? (Yes/No)

48. **How does urban expansion and forced evictions affected land tenure security of peri-urban farmers?**

V. Social Network Security and Culture preservation

49. Have you Social Support Networks?
50. How much is the strength of your social cohesion after eviction to ability to maintain relationships and networks within the new community and how these dynamics have changed?
51. **How does the urban expansion affect the social networks within peri-urban communities?**
52. How strong is your cultural and social identity in preserving your cultural and social identity or the extent to which you maintained your traditions, practices, and social bonds?
53. Do you think that the village's culture has changed as outsiders moved to the village? Why?
54. Are you well integrated to the new community at your new location?
55. Do you feel that there is a loss of cultural heritage and what is the extent to which eviction has led to the loss or degradation of cultural heritage in your community?
56. Do you feel that there is community disintegration and to what extent?
57. Have your children disrupted education or from school attendance and access to educational resources?
58. Have you faced social stigma in your new community? and to what extent if any?
59. How does urbanisation affect preservation of culture and language development in peril urban areas?
 - a. How does urban expansion and forced eviction influences and contribute to Human Capital Security
60. How urban expansion does affect the human capital development in peri-urban areas?

VI. Physical Assets Security

61. What is the level of the quality of your household housing situation?
62. Were you able to recover your property or assets lost during the eviction process?

VII. Access to basic Infrastructure services

63. Have you got access to Basic Services such as in your new location?

64. Have you got access to education for your children?
65. Have you got access to Healthcare Services?
66. Have you got access to public infrastructure such as roads, public transportation, and public buildings in the new location?
67. How does **urban expansion and forced eviction impact peri-urban households in access to public infrastructure services?**

VIII. ICT Capital Security

68. How does the of urban expansion and forced eviction affects the peri-urban households in access to ICT capital?
69. What are the Online Livelihood Activities that the peri urban households engage in before and after the urban expansion?
70. Is there any difference between the evicted and non-evicted peri-urban households in access to E-Commerce?
71. Is there any Loss of Information Sources due to forced evictions?
72. Is there any Community Connectivity Challenges due to urban expansion?
73. Is there any challenges in accessing reliable and affordable internet services after eviction?

IX. Food security

74. How is the community food security status now? Before the eviction?
75. Do you think every household in the community produce enough food now? Before the eviction?
76. How urban expansion and forced eviction affected the community in relation to food security?

Annex 24: Reliability Test Analysis

Case Processing Summary

		N	%
Cases	Valid	87	19.5
	Excluded	359	80.5
	Total	446	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.819	74

Annex 25: Ethical clearance

College of Agriculture and Environmental Sciences_Health REC

Date: 01/02/2024

Dear: Mr Kejela Gnamura

NHREC Registration # : REC-170616-051
Ref #: 2024/CAES_HREC/2693
Name: Mr Kejela Gnamura
Student #: 19247893

Decision: Ethics Approval from

Researcher: Mr Kejela Gnamura
19247893@mylife.unisa.ac.za +251911211258

Supervisor: Prof MICHAEL ANTWI antwima@unisa.ac.za

Impact of urbanisation and forced eviction on livelihood security of the peri urban farming households in Addis Ababa, Ethiopia

Qualification: PhD Agriculture

Thank you for the application for research ethics clearance by the College of Agriculture and Environmental Sciences Health REC for the above mentioned research study. Ethics approval is granted for five years, **subject to submission of yearly progress reports.**

Failure to submit the progress report will lead to withdrawal of the ethics clearance until the report is submitted.

Due date for progress report: 31 January 2025

The **low risk application** was **reviewed** by College of Agriculture and Environmental Sciences_Health REC on 18 January 2024, and the required clarifications approved on 31 January 2024 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

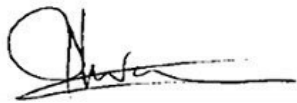
1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Agriculture and Environmental Sciences_Health REC.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

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Kind regards,



Dr MA Nyila
Deputy Chair of College of Agriculture and Environmental Sciences_Health REC E-
mail: nyilama@unisa.ac.za



Executive Dean / By delegation from the Executive Dean of the College of Agriculture and Environmental Sciences, Health REC Email:
ntwasm@unisa.ac.za
mm@unisa.ac.za