ARSI UNIVERSITY

SCHOOL OF HUMANITIES & LAW

DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL STUDIES

LAND USE DYNAMICS AS LIVELIHOODS RISKS IN KOYEFECHE-QILINTO PERI-URBAN AREA, AKAKI-KALITI SUB-CITY, ADDIS ABABA

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ENVIRONMENTAL DISASTER RISK MANAGEMENT STREAM

MA THESIS

ON

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THIS THESIS IS SUBMITTED TO DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL STUDIES AS A PARTIAL FULFILLMENT FOR THE REQUIREMENTS OF MASTER OF ART IN ENVIRONMENTAL DISASTER RISK MANAGEMENT

Submitted by:

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Approval of Thesis

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As Thesis Research advisor, I hereby certify that I have read and evaluated this Thesis Research prepared, under the guidance, by Addis Ayano: Land Use Dynamics as Livelihoods Risks. I recommend that it be submitted as fulfilling the Thesis requirement.

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As member of Board of Examination of the M.A, Thesis open defense examination, we certify that we have read, evaluated the Thesis Research prepared by Addis Ayano and examined the candidate. We recommended that the Thesis Research be accepted as fulfilling the Thesis requirement for the Degree of Master of Art in Environmental Disaster Risk Management Stream.

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Declaration

I, the undersigned, Addis Ayano Haile declared that this Thsis Research is original work of my own and it has not been submitted partially or fully to any Universities and Colleges so far.

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Acronyms

AACA	Addis Ababa City Administration
AfDB	African Development Bank
BoFED	Bureau of Finance and Economic Development
CSA	Central Statistical Agency
DFID	Department for International Development
DRM	Disaster Risk Management
ESRI	Environment System Research Institute
ETM^{+}	Enhanced Thematic Mapper Plus
FAO	Food and Agricultural Organization
FDRE	Federal Democratic Republic of Ethiopia
GIS	Geographical Information System
HH	Household
IDS	Institute of Development Studies
ILO	International Labor Organization
IRR	Impoverishment Risk and Rehabilitation
KPUI	Kumasi Peri-Urban Interface
LUD	Land use dynamics
PUI	Peri-Urban Infringes
SDPI	Sustainable Development Policy Institute
SLF	Sustainable Livelihood Framework
SPSS	Statistical Package for Social Sciences
TM	Thematic Mapper
UN	United Nations
UN-DESAPD	United Nations, Department of Economic and Social Affairs, Population Division
UNISDR	United Nations International Strategy for Disaster Reduction
UN-HABITAT	United Nations Human Settlements Programme

Explanatory Notes of Ethiopian Words/Terms

Idir- a traditional institution for self-help of members during "death of family members' days" (Amharic)

Jigee- a traditional institution organized by community members to contribute labor at the time of disaster risks and emergency situation (Oromifa)

Layignaw: a word to indicate location delineated as upper stream (Amharic)

Qetena: The smallest unit of administration under Woreda, but higher than gott(Amharic)

Tachignaw: a word to indicate location delineated as lower stream (Amharic)

"ወዳጅ ሲያረጅ በዝሮ ይሐዳል"- a traditional saying to express a conditional friendship situation shown by former close friend(Amharic)

Woreda:The smallest administration units encompassing two or more qetena.(Amharic)

Abstract

Land use dynamics is a restless phenomenon all over the world mostly driven by population pressure supported with growing socio-economic interests especially in cities. Addis Ababa city is one of rapidly the rapidly urbanizing cities in Africa. However, there is limitation of empirical evidences on land use dynamics as livelihoods risks of peri-urban settlers. This study has been conducted with the objective of assessing the trends of land use dynamics as livelihoods risks in Koyefeche-Qilinto peri-urban area.In order to achieve the study objective, satellite images were captured and land use dynamics analysis was done using ERDAS EMAGINE 2014 computer software supported with ground survey. On top of this, a questionnaire survey covering a total of 172 sample respondents was conducted to examine the impacts of land use dynamics. The land use dynamics analysis results have shown built-up areas have increased by 1017.85ha (10.178km^2) with 47% and 13% decline of forestland and cropland respectively between 1986 and 2016. Even if cropland had a lion share in a horizontal expansion of built-up area as compared to other land use categories, its rate of reduction was very slow due to its illegitimate pressure on forestland.Consequently,46.1ha(51.4%)of forestland was converted to cropland in the study period(1986-2016). Such critical decline of forestland is very inevitable to trigger environmental vulnerability which potentially produces livelihoods risks when it reacts with locally inappropriate implementation strategies & approaches. Multiple linear regression analysis has identified that many of Koyefeche-Qilinto peri-urban settlers are significantly still dependent on agricultural activities after being compensated rather than engaging into non-farm livelihoods activities. On top of this, it was also examined that expropriated peri-urban settlers had not been technically capacitated & supported to utilize their locally available potential livelihoods capitals & compensated payment for adapting urban livelihoods and coping the adverse impact of land use dynamics. Hence, the pre-existing environmental, financial, human, social and physical assets were found to some extent depleted making expropriated peri-urban settlers vulnerable to adverse effect of land use dynamics contexts. Hence, pre-expropriation & displacement defensive measures associated with DRR and post-expropriation & displacement adaptation measures related to strengthening institutional capacity, community operational ability and promoting environment friendly high market value agricultural production are recommended in the study to mitigate the occurrence of livelihoods risks due land use dynamics in the peri-urban settlements.

CHAPTER I: INTRODUCTION

1.1 Background of the Study

Rapid Land Use dynamics in peri-urban areas in the 21st century is becoming the major phenomenon being observed especially in developing countries. Explosive growth of human population and increasing socio-economic demands are some of the core drivers of land use dynamics in the World (Jaiyebo, 2003; Mandere et al, 2010).UN-HABITAT (2010) has also realized that spatial expansion of cities to peri-urban areas is triggered by movement of people outside of cities for residents' preference. UN-DESAPD (2014) investigated that the urban population of the World was growing rapidly from 746 million in 1950 to 3.9 billion in 2014 and it has also projected to grow to 6.3 billion by 2050.Furthermore, according to Rockefeller Foundation (2013), by 2030; urban land area stands to increase by up to 1.2 million km^2, a 185% increase over urban land cover in 2000. However, this increase accounts for only 2.5% of the World's agricultural land.

In light of this evidences, Africa is identified as the second most populous continent on the earth with an estimated population of 1.138 billion people which accounts for 40% urban people (UN-DESAPD, 2014). AfDBG (2012) projected that African population is expected to peak at 1.6 billion by 2030 from 1.0 billion in 2010, which would represent 19% of the World's population. Outgrowths of cities due to the increasing socio-economic interests of population have disrupted the existing peri-urban livelihoods systems through diminishing the agricultural activities and expropriation of farmlands for urbanization purpose. Mandere et al,(2010) defined peri-urban areas as those areas adjacent to built-up areas of high population concentrations where traditional farming activities come into conflict with alternative economic, residential and recreational interests. Aberra & King (2005) also articulated about peri-urban interface as a zone which is spatially located between urban and rural areas where livelihoods and the environment (both natural and built) are under constant pressure from urban expansion. Further, Ricci(2011) defined peri-urban interfaces as the zones where intense socio-economic engagement and interactions with the urban are taken place. Practically, peri-urban areas are not only used to resettle rural migrants but also it is the place where urban migrants are dwelled looking for cheaper land to construct a residence or business premise (Mandere et al,2010). In the face of environmental changes and urbanization, peri-urban

settlers are subject to live in the presence of spatial and temporal trends and patterns of land use dynamics which trigger livelihoods risks among peri-urban settlers.

Studies on peri-urban livelihoods risks associated with land use dynamics are quite few in Ethiopia. However, various studies related to urban and rural livelihoods were undertaken by different researchers using different livelihoods frameworks. Depending on DFID sustainable livelihoods framework, it starts with the vulnerability context in which people live their lives and the livelihoods assets (in effect, capabilities) that they possess. It then looks at how transforming structures and processes generate livelihoods strategies that lead to livelihoods outcomes. According to Messay (2012), livelihoods can be conceptualized as consisting of six components of assets (building blocks) such as natural, physical, human, financial, social and personal capitals accompanied by appropriate activities, and approaches to utilize these assets that together decide the living of the individual or household.

Livelihoods strategies can vary at individual, household, community and national level (Tuyen & Lim, 2013). A household livelihoods strategy can be defined as a logical integration of activities that determine the means of household survival. An individual or a household whose livelihoods is not grounded on this logical combination of assets with activities and appropriate approaches is vulnerable to any human or natural induced shocks, trends and hazards. Consequently, this trend may tend to disrupt the livelihoods situation of a household. Adell (1999) identified that peri-urban areas are often characterized by multiple livelihoods strategies as they are accessible for heterogeneity and proximity of different agricultural and non-agricultural activities. However, the land based livelihoods of peri-urban settlers is usually conflicting against the strategy of urbanization to effectively respond for housing demands of urban people. From all these discussion, it could be very logical to consider urbanization as the core determinant factor of land use dynamics taken place in peri-urban settlements.

According to CSA projection (2013) for 2014-2017, Ethiopian total population is estimated to be 92,206,005 in 2016 with remarkable growth rate reduction from 2.4% in 2014 to 2.36% in 2016. In spite of this fact, UN-DESAPD (2014) has projected that Ethiopia is expected to be a major contributors for the growth of African population in the coming 40-50 years and its urban population has grown from 19% of the total country population in 2015 to 20% in 2016. The

Rockefeller Foundation(2013) considered Addis Ababa city among few fastest growing African cities that together responsible for 500% increase of urban land and population in 2000-2030.Among 900 urban centers in Ethiopia, Addis Ababa city consists about 23% of the total urban population in the country and consequently, the coverage of urban areas between 1986 and 2010 significantly increased from 12.95% to 36.28% at the expense of changing the land use composition of peri-urban areas around the city(Leulsegged et al,2011).Because of population pressure and development induced economic interest in Addis Ababa city, the city is actively and extensively expanding horizontally towards many peri-urban areas at the expense of farmlands and agricultural livelihoods strategies. Luelsegged and his friends also investigated that built-up areas have increased by 5.04km^2 per annum against 5.20km^2 per annum decrease of forest cover areas. Cernea portrayed that urbanization programmes are indisputably needed for improving settlers' lives, provide employment, and supply better services. But the involuntary displacements caused by urbanization also create major impoverishment or livelihoods risks on some population segments (Cernea, 2000)

To deal with livelihoods risks of land use dynamics, Koyefeche-Qilinto was one of the target area selected to be urbanized expropriating and dislocating farming communities for public socio-economic interests. This is the theme of this study to look at the extent of livelihoods risks at the local level due to land use dynamics for urban expansion.

1.2 Statement of the Problem

The dynamic nature of socio-economic interest in Addis Ababa is the underlying cause of Addis Ababa city's expansion at the expense of peri-urban agricultural livelihoods through reduction of farm and grasslands. From Cernea's point of view, development will continue, however, to require changes in land use and thus make various degrees of population relocation at times unavoidable (Cernea, 2000). Based on this notion, many researchers have confirmed that Addis Ababa city has continuously been grown horizontally consuming considerable size of farmlands, grasslands and forestland and thereby affecting livelihoods base of many peri-urban settlers. This restless land use dynamics recently is disturbing agricultural livelihoods of Koyefeche-Qilinto peri-urban settlers through expropriation of farmlands and dislocation of households. Cernea (2000) investigated that all people do not equally respond to all risks. Development process has a feature of gains for those who prepared and pains for those who didn't. In light of this, the responsive capacity of peri-urban

settlers to risks differ from households to households depending on their livelihoods capacity and vulnerability contexts. Within the same notion, many studies had been conducted in Akaki-Kaliti Sub City targeting dominantly on wastewater irrigations, threats of Akaki River quality, and groundwater potential to address basic livelihoods problems at the local and national level. However, at this time of urban & industries' zone expansion, investigative studies have not yet been undertaken related to land use dynamics as livelihoods risks in Koyefeche-Qilinto peri-urban areas. Hence, this study was fervently believed to be very supportive in providing empirical evidences about the trends of land use dynamics and its associated livelihoods risks at the local level for timely measures or actions to be taken by policy makers, governmental & non-governmental organizations and researchers so as ensure sustainable livelihoods. Therefore, these were the issues in mind that Koyefeche-Qilinto was selected as the focus of this study.

1.3 Objective of the Study

1.3.1 General Objective

The general objective of this study is to assess land use dynamics as livelihoods risks in Koyefeche-Qilinto Peri-urban settlements (Woreda 9 of Akaki-Kaliti Sub city).

1.3.2 Specific Objective

Aligning with the general objective of the study, the following specific objectives were designed:

a. to examine trends of land use dynamics in cropland, grassland, forestland and built-up area in Koyefeche-Qilinto peri-urban settlement
b. to identify impacts of land use dynamics on livelihoods of farming peri-urban settlers of the study area.
c. to investigate the most determinant factors affecting the variation of annual household income in livelihoods of farming peri-urban settlers.
d. to assess the existing vulnerability contexts of Koyefeche-Qilinto peri-urban farming livelihoods.
e. to evaluate adaptive and coping strategies employed by farming peri-urban settlers to resist the consequence of land use dynamics.

1.4 Research Questions

The study intended to respond five research questions which are interlinked with the above specific objectives:

a. What trends do cropland, grassland, forestland and built-up area show in land use dynamics process of the study area?
b. What are the impacts of land use dynamics on livelihoods of peri-urban settlement?
c. What are the most determinant factors affecting the annual household income of peri-urban settlers in the presence of land use dynamics?
d. What vulnerability contexts have been manifested in the livelihoods of expropriated and /or dislocated koyefeche-Qilinto peri-urban households?
e. Which adaptive and coping strategies have been employed by farming peri-urban settlers in presence of land use dynamics?

1.5 Significance of the Study

In the DRM policy, Ethiopia has developed a vision to see communities who are capable enough to withstand the impact of hazards and related disasters at national, local, community, household and individual levels and significantly reduce damages caused by disasters by 2023 (FDRE, 2013). For effective achievement of this vision, this study may provide empirical evidences for those who are willing to conduct further studies associated with land use dynamics induced livelihoods risks. Besides, it is very significant to indicate the existing environmental vulnerability in peri-urban livelihoods of Koyefeche-Qilinto area. This, in turn, may enable the woreda and other development agents to adjust their implementation strategies accordingly, strengthen institutional capacities appropriately and enhance operational abilities effectively to ensure sustainable livelihoods at local level in the face of land use dynamics.

1.6 Scope the Study

This study entailed, geographically, in *woreda* 9 of Akaki-Kaliti Sub City as a whole with a due focus on four settlement sites/Qetena/ (Koye, Feche, Layignaw Qilinto and Tachignaw Qilinto) to view the impact of land use dynamics throughout the woreda. The results of this study were thought to represent other peri-urban areas affected by urban pressure and located within the same socio-economic and agro-ecological environments.

1.7 Limitation of the Study

Currently, koyefeche-Qilinto is an infant administrative woreda of Addis Ababa City which was administered by Kebele of farmers' association. Since 2005, the inception year of urbanization, Koyefeche-qilinto has been growing to be urban settlement & industry zones. Depending on this situation, Koyefeche-qilinto peri-urban area is very infant and found on transition to urban administration. Due to this transition and dynamicity of administration at local level, documents related to household lists were not kept properly and handed-over to newly established Woreda Administration. Thus, the researcher encountered limitation to get updated and properly recorded list of farming peri-urban households at woreda level. Considering this limitation, the researcher was enforced to use simple random sampling technique for household selection so as to conduct questionnaire survey.

1.8 Organization of the Paper

This thesis paper has divided into five chapters. The first deals with the introduction part which in turn comprises the overview of land use dynamics in relation to peri-urban livelihoods situations at global, continental and national levels, statement of the problem, research objectives and questions, significance , scope and limitation of the study. In the second chapter the writer tries to review briefly the concepts and current thinking of livelihoods risks & impact of land use dynamics and definitions of important terms in this research. Conceptual model of livelihoods risks analysis has also been discussed in Chapter Two. The third chapter deals with the biophysical and socio-economic background of the study area. Both physical and socio-economic characteristics of the area have been briefly entertained in this chapter. Besides, data source & nature of data, sampling methods & sampling size determination, tools of data analysis and techniques of data analysis have been thoroughly discussed in chapter two. The spatial & temporal land use dynamics and its associated impacts on livelihoods of expropriated households have been boldly discussed in Chapter Four. This chapter also deals with households' livelihoods assets positions, vulnerability contexts and adaptive & coping strategies of peri-urban settlers. The overall summary of the research and recommendations that are assumed to mitigate livelihoods risks and improve environmental situation of the area are covered in Chapter five.

CHAPTER II: RELATED LITERATURE REVIEW

2.1 Introduction

This chapter discusses all about various literatures related to the study. Accordingly, different Key words are defined in light of the context of the study based on their scientific grounds. Concepts related to livelihoods risks are discussed in this thesis using various related literatures to show its theoretical basis supporting with frameworks of livelihoods. Discussion associated with impacts of land use dynamics in the peri-urban settlements is also thoroughly made while identifying vulnerabilities and issues related to strategies of peri-urban settlers under this section.

2.2 Key Words and Concepts in the Study Domain

2.2.1 Land Use: In this study context, land-use refers to the way in which land has been put to use, usually with emphasis on the functional role of land for economic activities.

2.2.2 Land use Dynamics: based on the context of this study, it reflects the changing processes of human activities in relation to farmlands, built-up areas, forest lands and grassland in the context of peri-urban settlements.

2.2.3 Peri-urban Areas: Peri-urban areas are, as a space between the city and the countryside, shaped by the urbanization of former rural areas in the urban fringes, both in qualitative (e.g. diffusion of urban lifestyle) and in a quantities (e.g. new residential zones) sense. Aberra & King (2005) stated about peri-urban interfaces and their characteristics as a zone which is spatially located between urban and rural areas where livelihoods and the environment (both natural and built) are under constant pressure from urban expansion.

The researcher also fervently believed and accepted this concept to deal with the trends of land use dynamics and its associated livelihoods risks within unrest dynamicity of population and local & national socio-economic interests in the study area.

2.2.4 Horizontal Urban Expansion: it is used in this study referring to the expansion of urban settlements into surrounding peri-urban areas to respond to the increasing population pressure and the growing demand of local & national socio-economic interests.

2.2.5 Risks: this thesis employs the term 'risk' to portray the probability of harmful consequences, or expected losses may be manifested in the form degradation of livelihoods assets & disruption of economic activities & working ethics of environment resulting from land use dynamics in the peri-urban areas.

2.2.6 Win-Win Strategy: it is employed in this research to represent the type of development games which is designed in a way that all stakeholders can profit from it in one way or the other. All stakeholders are treated as equally important and valuable. It often also carries an ethical message of caring for the environment and a holistic approach to life and society.

2.2.7 Livelihoods: The concept of livelihoods has been extensively discussed among academicians and development practitioners and International Organizations (Frankenberger,1992; DFID, 1999; Chimhowu & Hulme ,2006; FAO & ILO, 2009; Messay, 2012; FAO, 2013). Each household can have several possible sources of entitlement which constitute its livelihoods.

Most frequently used definition of livelihoods which the researcher himself fervently agrees is 'A livelihoods comprise the capabilities, assets (including both materials and social resources) and activities required for a means of living'. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base' (Chambers & Conway, 1992)

Frankenberger,(1992) defined livelihoods security as the ability of a household with adequate and sustainable access to income and resources to meet basic needs (adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration). For CARE, sustaining livelihoods security depends on a number of enabling conditions that must be in place. These include human rights recognition, civil participation/action, risk management, an enabling policy environment, gender equity and environmental stewardship.

Messay (2012) has wrapped up the concept of livelihoods as having six types of building blocks (Human, physical, natural, financial, social and personal capitals/assets to further investigate livelihoods problems through personal capital focusing on motivation, self-esteem, self-confidence, emotional well-being, and assertiveness and spirituality of a household). DFID (1999) has also viewed the concept of livelihoods as an integrated efforts of five types of capitals/assets (natural, physical, human, financial, and social), the activities, and the approaches (mediated by institutions

and social relationships) that together decide the living of the individual or household. Therefore, livelihoods assets can be understood by the notion of the aforementioned five main capitals.

Natural capital: consists of land, forest and biological resources such as trees, pasture and biodiversity.

Financial capital: Consists of stocks of money or other savings in liquid form. In this study context, it includes not only financial assets but also income levels, variability over time, and distribution within society of financial savings.

Physical capital: capital created by economic production. In view of this study, it includes housing and number of livestock possessed by a household.

Human capital: is constituted by the quantity and quality of labor available. At household level, therefore, it is not only determined by household size, but also by education, nutrition, technical skills, participation, capacity and health of household members.

Social capital: Any assets such as rights or claims that are derived from membership of a group. This includes the ability to call on friends or kin for help in times of need, disaster risks (e.g. farmers' associations). In one way or in another the social capital is a function of power a given individual or group assumes and a kind and level of the relationship that exists in a given societal structure.

Livelihoods are not static but change in response to various internal and external stimuli (Chimhowu and Hulme, 2006). In light of this, the sustainability of livelihoods may be degraded or improved by social actions on natural capital(land & forest).It determines the favorability or non-favorability of the existing structures, institutions and processes as transforming factors in one hand and trends as vulnerability contexts on other hand. Their interplay with livelihoods of a given community has been depicted in the following sustainable livelihoods framework.

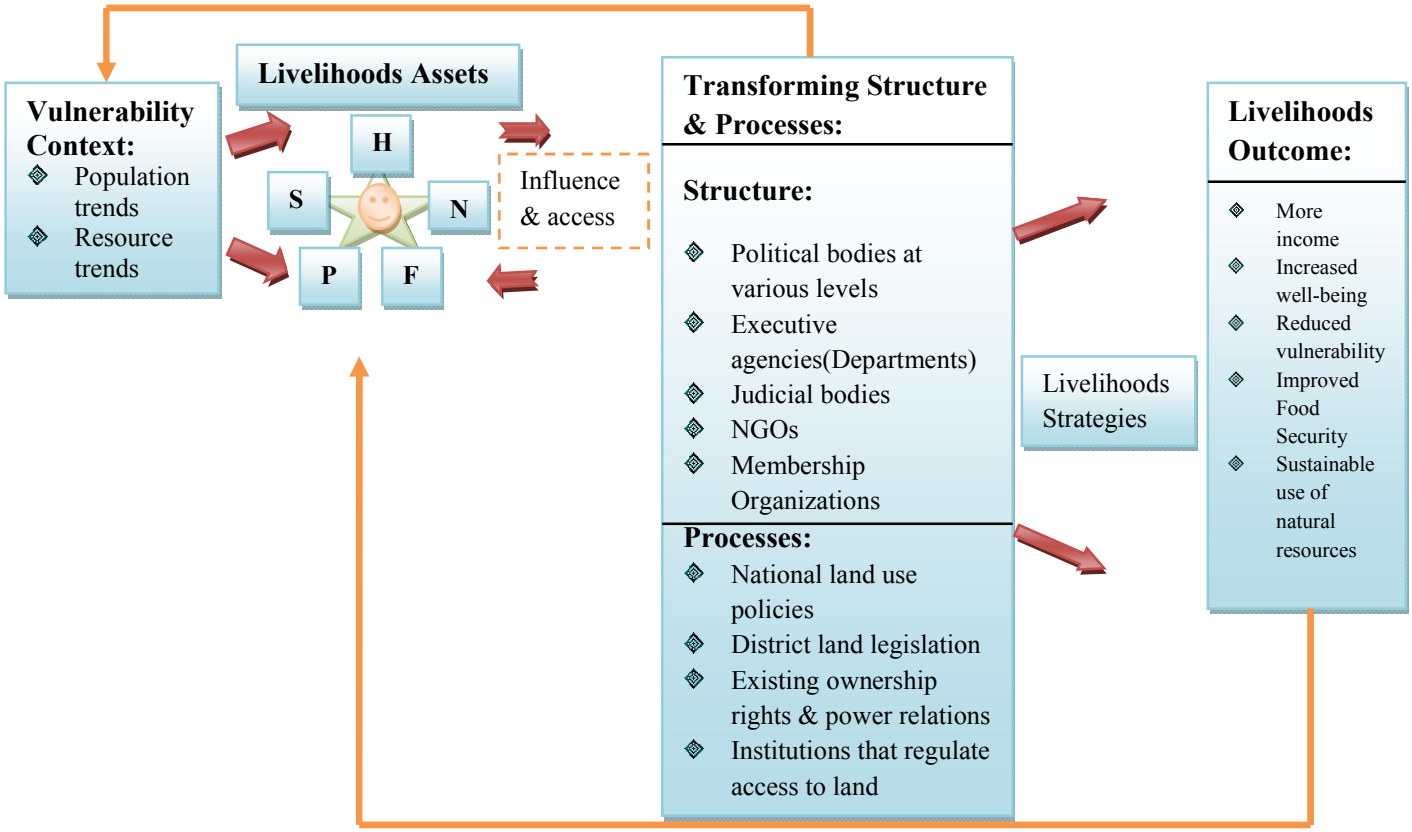

Figure 2.1: Analytical Framework of the study area adapting from DFID SLF
Source: Modified from DFID (1999) SLF

Transforming Structures and Processes: livelihoods are shaped by policies, institutions and processes at all levels-from the household to the international. These determine not only access to the various types of capital (natural, physical, human, social and financial), but also the substitutability of capitals. They determine options for livelihoods strategies, as well as access to decision-making bodies and external sources of influence. Organizations, in both the public and private sectors, decide and implement policies, legislation and regulations, and undertake activities, that affect livelihoods. Complementary to structure, processes as 'software' determine the way in which structures and individuals operate and interact.

Structures are considered as the hardware(the organizations, both private and public)"that set and implement policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods" (DFID, 1999). An absence of well working structures often

constitutes an obstacle to sustainable development and makes simple asset creation difficult in case of adverse structures impeding access to apply a certain livelihood strategy.

Livelihoods Strategies: according to DFID (1999), livelihoods strategies denote the range and combination of activities and choices that people undertake to achieve their livelihoods goal. Peri-urban settlers are characterized by different livelihoods strategies as they are influenced by urban and rural activities. According to Ricci's (2011) study on the peri-urban areas of Dar es Salaam city, the main source of livelihoods income for peri-urban settlers is agriculture and livestock (97%). According to Leulsegged et al.(2011) targeting on Bole sub city peri-urban settlers, agriculture(crop, livestock, eucalyptus, poultry productions, renting, grass production, and fattening) has contributed more than half (58%) of the total household income and a household receives, on average, Birr 15,036 per annum from agriculture. Thus, the livelihoods strategies of peri-urban areas are dominated by agricultural activities which are currently found under intensive pressure of horizontal urban expansion. Alaci (2010), UN-HABITAT (2010) and Bah et al.(2003) as cited in Leulsegged et al.(2011), urbanization has positive and negative attributes on livelihoods strategies of peri-urban settlers. Well planned and managed urban growth & development positively attribute to provide benefits to peri-urban settlers in the form of creating high demand on agricultural produces, access to developed extension services, and opportunities to non-farm employment. In the contrary, unguided urbanization like in most of developing countries negatively affects the livelihoods strategies of peri-urban settlers and their natural environment through changing land use, water resource management, waste dumping and increasing competition between agricultural and residential use of natural resources.

However, many researchers including this study fervently believed that any development process involves unavoidable competition among resources which either contributes gains or pains for settlers who are engaged in different livelihoods strategies. Similarly, Cernea (2000) verified in his model that urbanization programs are indisputably needed for providing employment and better services but they cause involuntary displacement and create major impositions on the livelihoods of some population segments. Depending on this notion, Cernea identified eight types of impoverishment risks likely to be occurred associated with livelihoods of involuntarily displaced and resettled people (landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity, loss of access to common property resources, social disintegration). In view of

this model, the critical livelihoods risks related to land use dynamics were assessed and analyzed targeting on livelihoods strategies of those displaced peri-urban settlers of the study area.

Livelihoods Outcomes: refers to the achievements of Livelihoods Strategies. Outcome encourages the study to focus on what actually happens. According to DFID (1999) framework, 'outcome' is used in preference to 'objectives' focusing on two main reasons such as sustainability and orientation of achievement.

Extensive Risk: the widespread risk associated with urbanization induced land use dynamics in the peri-urban settlements (urban margin)

2.3 Concepts of Livelihoods Risks

When we talk about the concept of risk, this study prefer to use the technical connotation of risks rather that the popular one (the combination of the probability of an event). Because, the technical settings of risk usually place its emphasis on consequences in terms of potential assets losses (UNISDR, 2009) due to land use dynamics in the peri-urban settlements.

Livelihoods risk is defined, in this study, as inability of the households to properly respond to the existing vulnerable situations in the presence of loss of farmlands and other created households' assets. Understanding the nature of vulnerability and risk is a key step in sustainable livelihoods analysis (Shahbaz, 2008).As Shahbaz (2008) discussed that livelihoods of an individual or a household is at risk when there is lack of access (limited access) to certain livelihoods assets with increasing vulnerability (defenselessness, insecurity) in the face of shocks, stress, trends to which an individual/ household is subjected. Therefore, livelihoods are said to be secured when households have secured ownership of, or access to, resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies. Households with little/no livelihoods assets are generally more vulnerable (incapable to withstand shocks, trends and stresses) than households with many assets to the impact of potential hazards (FAO and ILO, 2009).

Hence, it could be very reasonable to say that livelihoods risks are greatly manifested because of lack of access to livelihoods assets. Peri-urban settlers are subject to both expropriations of farmlands and/or dislocation from built assets (houses, social institutions and adapted environment) due to unrest land use dynamics caused by natural and human activities. According to

UNHCR,1993 cited in Messay (2012),there are four recognized Worldwide core causes of human displacement such as environmental stress (natural disaster, human induced calamities, development-induced land expropriations, ecological degradation and pollution), political instability, economic tension and ethnic conflicts. According to the Third United Nations World Conference for the commencement of Sendai Framework Declaration, reduction of livelihoods risks is one of the top agenda expected to be achieved through integrated and inclusive implementation of economic, social, cultural, educational, environmental and institutional measures.

This study was intended to assess the land use dynamics driven by dynamic nature of socio-economic and environmental pressures for instability of livelihoods in the peri-urban settlement. Based on this notion, Cernea (2000) in his IRR model noted that expropriation of land for other purpose removes the main foundation upon which people's livelihoods are constructed and can lead to the principal form of de-capitalization of displaced settlers, as they lose both natural and man-made capital. Cernea generalized that loss of land has far more severe consequences for land-based livelihoods than loss of the house. The exposure and sensitivity of peri-urban settlers to land use dynamics affects the pattern of livelihoods assets. In relation to this, Wisner et al(2003) noted that hazards are intertwined with human systems in affecting the pattern of assets and livelihoods among people through altering land distribution and ownership rights.

2.4 Impacts of Land Use Dynamics in Peri-Urban Settlements

As Aberra & King (2005) stated about the Livelihoods of the Kumasi Peri-Urban Interface (KPUI) of Ghana, Peri-urban interface become exposed to sources of vulnerability and poverty typical of urban livelihoods when rural spaces on the fringe of urban centers are engulfed by urban land use. Mattingly & Gregory (2006) explained that as cities expand, the peri-urban areas also moves outward and thus, places & people that were peri-urban become urban and others that were rural become peri-urban within unrest change of land use dynamics. This process of land use change provides gains and/or pains to peri-urban settlers depending on their level of preparation ahead to be either resilient or vulnerable to the likely livelihoods risks.

Many researchers have accepted the concept of vulnerability, in general, as the susceptibility to damage, and is often characterized by the sensitivity to or exposure of a system (people or place) to shocks, stresses or disturbances, the state of the system relative to a threshold of damage, and the

system's ability to adapt to changing conditions (Luers, 2005).The Hyogo Framework for Action has also summarized the above definition, as the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Many peri-urban settlers who are engaged dominantly in agricultural activities (Leulsegged al et.,2011; Ricci, 2011;) are very susceptible to land use dynamics due to high population pressure and growing demand of settlements in cities. The World's urban population increased from 2.3 billion in 1994 to 3.9 billion in 2014 and is projected to grow to 6.3 billion by 2050.Within this dynamicity context, Africa and Asia are expected to have more rapid rates of urbanization between 2014 and 2050 (UN, 2014). Africa's urban lands such as Addis Ababa, Dar es Salaam,Nairobi, and Kampala are expected to increase by 500% as they are the world's fastest growing cities. (Rockefeller Foundation, 2013)

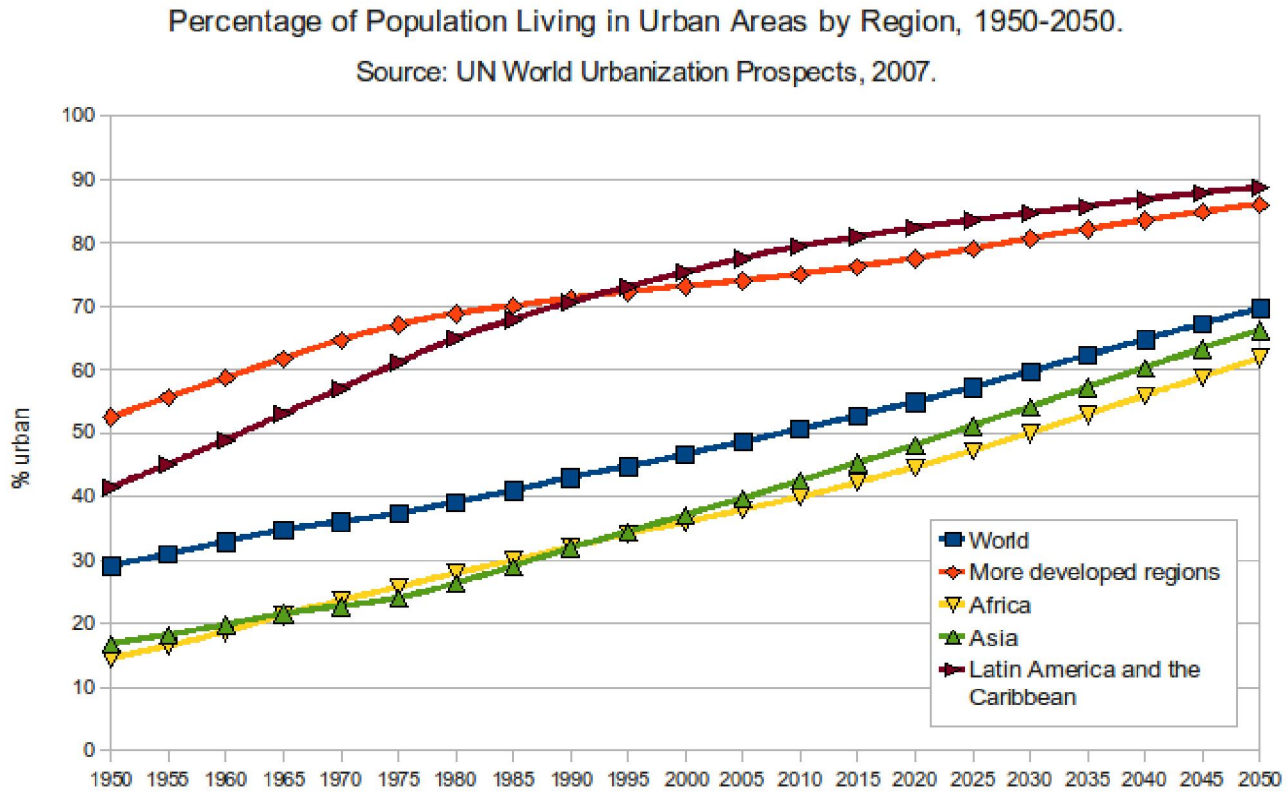

Figure 2.2: Urban population growth prospect by Region, 1950-2050
Source: UN,World Urbanization Prospects, 2007

Such trends of population growth explicitly disturb the existing livelihoods systems of peri-urban settlers through diminishing farmlands and increasing vulnerability to livelihoods risks. Maxwell et al., 1998 in Tetteh (2011) noted that in peri-urban areas although higher proportions of the population depend on agriculture, the amount of land available for farming is rapidly dwindling as the city expands. This state of condition is also identified by Wisner, et al (2003) as a major factor in the growth of vulnerability, particularly of low-income families living within peri-urban settlements. Thus, poor peri-urban settlers are more vulnerable to the adverse effect of land use dynamics taken place in the peri-urban settlements. Mattingly and Gregory(2006) investigated in their study that urbanization disproportionately affects the livelihoods of poor people by diminishing the natural resources available to them as they are no longer able to access common pool and private property resources. On top of this, these poor peri-urban settlers are often lack the capital and other resources they need to invest in new opportunities to survive and generate cash regularly and rapidly. According to Ricci (2011), peri-urban settlers are exposed to considerable uncertainty since continuous land use dynamics to urban land use increases land regularization process and the imposition of certain fees, which may force poorer settlers to migrate, further marginalizing and making them more vulnerable to environmental changes and heavily impacting their livelihoods.

People without adequate access and equity to livelihoods assets are vulnerable to adverse effects of land use dynamics. Messay (2012) has discussed issues related to equity in his recommendation that ensuring gender equity and equality with enhancing skills of accessing & consuming resources across resettlements can reduce vulnerability in Ethiopia. Adger and Kelly, 1999; Leichenko and O'Brien, 2002, cited in Luers,(2005) described about the characteristics of vulnerability as a dynamic quality that can be altered suddenly or gradually by changes in the social and biophysical conditions. In light of this, in the context of land use dynamics, livelihoods vulnerability of peri-urban settlers is an effect of a gradual process of changes associated with accessing livelihoods assets.

Based on the empirical findings, many peri-urban areas are being engulfed by increasing urban settlements with decreasing of farmlands and forestlands from year to year. This horizontal growth of urban settlements has visible and invisible positive and negative impacts on livelihoods of peri-

urban settlers. The pursuing land use dynamics accompanied by population pressure & increasing demands for settlements towards the southern fringes of Addis Ababa City (i.e. Akaki-Kaliti Sub City Peri-Urban areas) is diminishing the agricultural livelihoods while declining the farmlands and forest coverage in Koyefeche-qilinto peri-urban area. However, researches have not yet been carried out to get access to empirical evidences associated to the impact of land use dynamics as livelihoods risks in the study area. Hence, this study was conducted intentionally to fill this research gap and create disasters' resilient peri-urban settlers and environment at the local level.

2.5 Conceptual Model of Livelihoods Risk Analysis

This study employed the conceptual framework to analyze livelihoods risks in the face of land use dynamic as it is set up below:

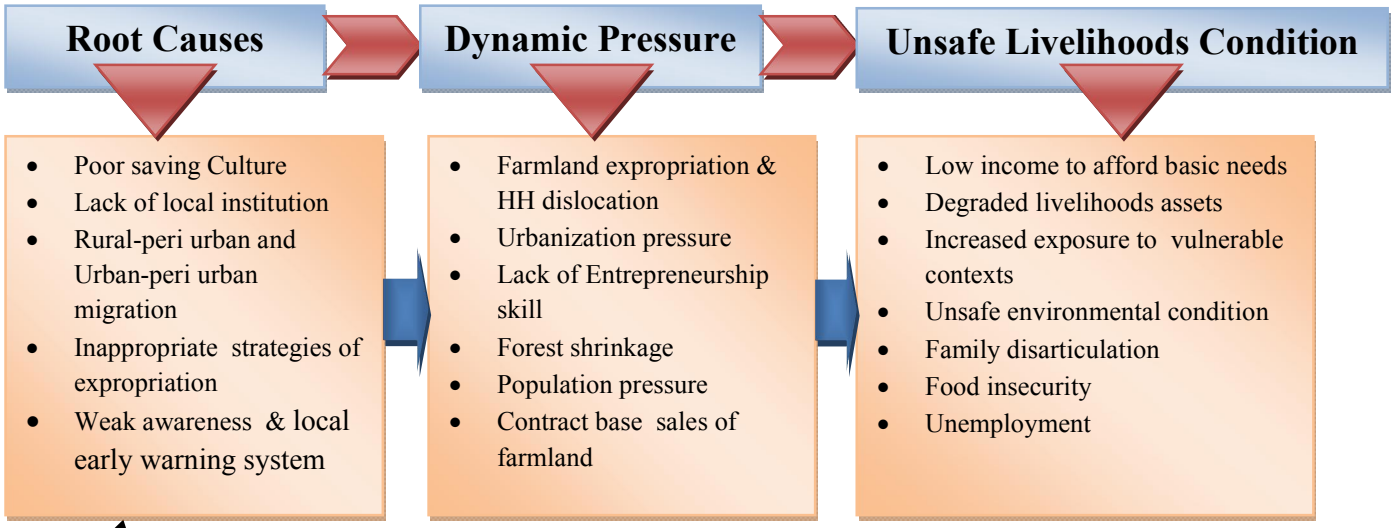

Figure 2.3: Conceptual Model of land use dynamics as livelihoods risks
Source: Researcher's own notion based on Pressure & Release/PAR/Model

CHAPTER III: DESCRIPTION OF THE STUDY AREA AND METHODS

3.1 Description of the Study Area

3.1.1 Physical Profile

Akaki-Kaliti is one of the ten Sub Cities of Addis Ababa, the Capital city of Ethiopia. It is located in the southern part of the City at 20km distance from the City's center. According to CSA projection (2013), the population of Akaki Kaliti is estimated about 216,538 with proportion of 111,132 females and 105,406 males. It is also known as an industrial zone of the city and the country as well. Eleven *woredas* are administered under the sub city and many of them are found at the fringe of Addis Ababa City. *Woreda* 2, 4,9,10 and 11 are the most considerable peri-urban areas where new expansion of urban settlements and establishment of industrial zone are undertaken intensively.

Koyefeche-Qilinto Peri-urban is recognized as *Woreda* 9 Akaki-Kaliti Sub city administration located at 8°52'0"-8°56'0"N latitude and 38°48'0"-38°52'0"E longitude occupying about 3,140.6 hectare (CSA, 2007 and ESRI Basemap, 2015) with total estimated population of 5119 (AACA, 2014). Its altitude ranges between 2190 - 2331masl enjoying mid-highland climatic conditions and its political boundary is also surrounded by neighborhood areas such as Gelan gura(woreda 11) & Kersa(woreda 10) in the north, woreda 2 in the south, woreda 1 in south west ,woreda 8 in the west and Deka Seden in the east & south east.

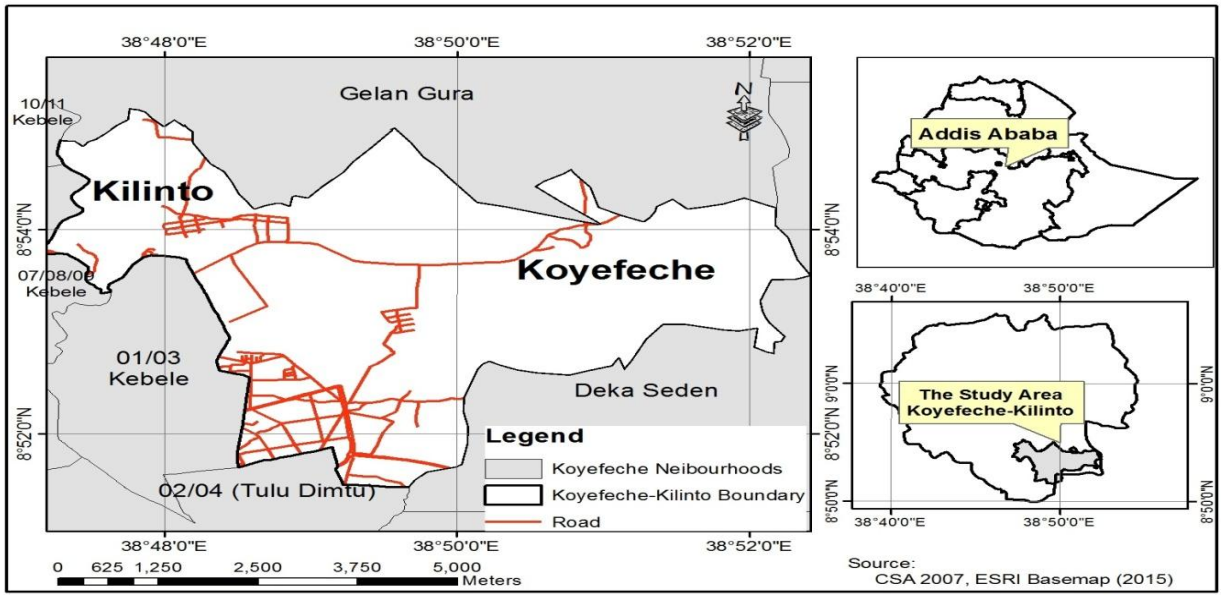

Figure 3.1: Topo map of Koyefeche-Qilinto Area(Woreda 9 of Akaki-Kaliti S/City)
Source: CSA, 2007 and ESRI Basemap, 2015

The study area is characterized by a daily average temperature ranging between 15-25^{0}C and the mean monthly rainfall between 3.41 to 303.79mm within midland agro-ecological zone. It has two rainy seasons, *i.e.* the main rainy season (*keremit)* between June and September which contribute to more than 70% of the total annual rainfall and a small rain season (*belg)* between February and April.

3.1.2 Socio-economic Profile

Koyefeche-Qilinto peri-urban area is one of infant woreda administration of Addis Ababa city under Akaki-Kaliti Sub city, being urbanized to respond for the increasing socio-economic interests of the population in the centre of Addis Ababa City. The area is divided into four villages/Qetenas/ such as *Tachignaw Qilinto,Layignaw Qilinto, Feche* and *Koyeqersa* dwelling a total of 1041 households who are engaged dominantly in agricultural livelihoods activities. Oromifa is widely speaking language as it is located near to the border of Oromia Regional State and most of the community used to believe in Orthodox Christian Religion. According to Akaki-Kaliti sub-city Urban Development & Rehabilitation Division, Urbanization was commenced in 2005 with compensation payment rate of 3Birr for a square meter of expropriated farmland. Recently, Koyefeche-Qilinto peri-urban area is administered as Woreda 9 of Akaki-Kaliti Sub-city. Addis Ababa Science & Technology University, Qilinto Prison Camp, Waliya Beer Factory, Les Prance Adventist School, Condominium Houses and one government owned Health Center are the most recognizable public assets existing in the area expecting to provide socio-economic services to the community at the national and local levels.

Generally, Socio-economic infrastructures such as highway road connecting Addis Ababa city with Adama,Mojo & Bishoftu , establishment of different factories and condominium houses are the most decisive public assets growing in the area challenging the agricultural livelihoods strategies of pre-settlers.

3.2 Research Design

As livelihoods are multifaceted in nature (Adell, 1999), it is very difficult to assess livelihoods risks while neglecting the status of the previous risk events. Hence, it is fervently believed to prefer a research design which is capable enough to assess the past and present land use trends and its

adverse effect on livelihoods of peri-urban settlers over a period of time. Based on this notion, this study employed longitudinal research design for collecting satellite images of 1986, 2000 and 2016. On top of this, cross-sectional survey design was also utilized to conduct household survey emphasizing on fully mixed concurrent dominant status approach so as to assess the impacts of land use dynamics on livelihoods. In this study, the quantitative phase was given higher priority in the analysis and applied for generalizing the result using a sample as a spring board to a population. As noted also by Babbie, 1990 cited in Creswell (2003) data collected using a quantitative phase is useful for generalization based on a sample taken among particular population.

3.3. Data Source and Nature of Data

Primary and secondary sources of data had been collected and utilized to achieve the intended goal of research. The primary data was collected through household questionnaire, in-depth interview of the key informants, field observations and satellite images. Besides, the secondary data was collected from all available written documents and electronic sources. Related to the nature of data, both quantitative and qualitative data were applied to including ideas, viewpoints, concepts, definitions, arguments and suggestions associated with land use dynamics and livelihoods risks so as to strengthen the analytical frameworks and come up with realistic research outputs and thoughtful recommendations.

3.4. Sampling Methods and Sample Size Determination

3.4.1 Sampling Methods

Both the hybrid of random sampling and non-random sampling methods were employed in such a way to reduce the sampling error. A simple random sampling technique was utilized as random sampling to ensure the representativeness of on-target group households that were subject to land expropriation and/or dislocation. Most of the earlier peri-urban settlers were dislocated and went to different areas within the woreda because of urbanization in the previous settlement areas. Conversely, some of the community were able to remain intact at their original place but with reduced or lack of farmland due to expropriation. Purposive sampling technique from non-random sampling method was also employed to intentionally identify seven key informants from government offices, elders and youth groups who could provide well thoughtful information about the impact and trends of land use dynamics in the study area.

3.4.2 Sample Size Determination

In order to determine an adequate sample size, Green's sample size determination procedures was employed using $n > 50 + 8m$ as it was believed more comfortable to conduct multiple regression analysis (Green,1991). Accordingly, $n > 50 + 8m$,(where m is the number of predictors) was applied to determine the sample size which potentially represent the expropriated population of Koyefeche-Qilinto peri-urban area as depicted in Table 3.1.

Hence, the sample size with 15 predictors was expected to be more than 170. Depending on this statistical recommendation, 172 sample households were employed to conduct household survey that potentially could represent 552 dislocated & expropriated population of Koyefeche-Qilinto peri-urban area.

Table 3.1: Distribution of sample households per village

Villages/*Qetena*	Total estimated population	Total estimated household	Estimated population of dislocated & dispossessed households	Proportion of sample households per Village
Tachignaw Qilinto	1411	287	152	46
Layignaw Qilinto	659	134	71	25
Feche	1475	300	159	48
Koye Qersa	1574	320	170	53
Total	**5119**	**1,041**	**552**	**172**

Source: Woreda 9 Administration and AKSCA, 2014

Furthermore, seven key informants who have better understanding about the trends of land use dynamics and its impacts on livelihoods were selected using purposive sampling technique.And accordingly, two elders from both sex, two youths (male & female), government representatives (Akaki-Kaliti sub city Urban Development & Rehabilitation Office, Woreda Chief Executive Office and Woreda Agricultural Office) were intentionally interviewed so as to strengthen the data received through household survey and satellite images.

3.5. Tools of Data Collection

So as to achieve the intended objectives and respond effectively to the research questions, this study utilized data collection instruments such as household questionnaire, satellite images of the study

area, key informant interview and personal field observations. In order to acquire deep insight on the trends & impacts of land use dynamics in the study area, key informants were sought as best means to support the information gained from household questionnaire. On top of these, satellite images of 1986, 2000, and 2016 were utilized as a tool to obtain data potentially describing the land use changes across the past 30 years in the study area.

Thus, the researcher purposively selected three government responsible persons, two community elders and two youths from both males and females in the study area because they were believed to be rich of knowledge and experiences as to how well the process of land use dynamics was taken place in the targeted peri-urban areas. Therefore, members of the key informants were drawn from middle and top management members of the woreda and Sub-city. Finally, field observation was carried out by the researcher to cross-check what were received through key informant interview against the existing livelihoods situations and impacts of land use dynamics in the peri-urban settlements.

3.6. Techniques of Data Analysis

Employing appropriate techniques of data analysis is very vital to investigate livelihoods risks likely to occur in the process of land use dynamics in the peri-urban settlements. Understanding livelihoods risks is very complex as it is multifaceted in nature and thus, it was believed to apply different techniques of data analysis aligning with each specific objective designed to be achieved at the end of this thesis.

3.6.1. Land Use Dynamics Analysis

The study utilized this technique to analyze and come up with the degree of land use changes and to identify the proportional trends of forestland, cropland, grassland, plantation and built up areas in the study area. In doing so, analysis of the proportion of land use changes between 1986 & 2016 were carried out by employing three imageries of Landsat TM and Landsat ETM^{+}. The Satellite imageries were captured on February 24, 2016 at 1:13:45PM using the path/row numbers 168/054 and 181/054 with careful attention of capturing cloud free images to enhance their quality. Depending on the scope of the study and visual interpretation of the satellite imageries, five classes were chosen. These were forestland (including bushes and shrubs), plantation, grassland, cropland and built-up (including any sort of housing construction, road, and other infrastructures) areas. The

study utilized the satellite images to depict the spatial and temporal land use condition of the study area.

Using ERDAS IMAGINE Version 2014 software, there are supervised and unsupervised image classifications. Supervised classification involves selecting pixels that represents land cover classes that are recognized by the analyst. This requires, however, prior knowledge of the area by the analyst. Unsupervised image classification is more computer-automated. It enables the analyst to specify some parameters that the computer uses to reveal statistical patterns that are inherent in the data. These patterns are simply clusters of pixels with similar spectral characteristics. This method is usually used when less is known about the data before classification. Due to similar spectral characteristics of grass, crop and bush lands, which were determined to be independent classes before classification, the application of unsupervised classification may not give good results.

As a result, in this analysis, supervised image classification was used. After determining the land use features, the next step employed was land use change detection. Land use change detection is the process of assessing the spatial and temporal dynamics of a given land use feature. This was done through overlaying the classified satellite imageries and analyzing by image differencing algorithm. Finally, the outputs of image classifications were verified by conducting ground truth while recording x and y coordinates of 41 samples of spatial features using GPS (see Table 3.2) and undertaking ERRMAT to show the confidence level of office interpretation of land use categories against the GPS observation of land use categories in the study area as being shown below in Table 3.2

Table 3.2: Cross tabulation of field observed and office interpreted land use categories

		Field Observed Land Use Types										Total	
		Forestland		Plantation		Grassland		Cropland		Builtup Area			
		Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Office Interpreted Land user types	**Forestland**	2	4.9	0	0.0	1	2.4	0	0.0	0	0.0	3	7.3
	Plantation	0	0.0	5	12.2	0	0.0	1	2.4	0	0.0	6	14.6
	Grassland	0	0.0	0	0.0	11	26.8	1	2.4	0	0.0	12	29.3
	Cropland	0	0.0	0	0.0	0	0.0	15	36.6	1	2.4	16	39.0
	Builtup Area	0	0.0	0	0.0	0	0.0	0	0.0	4	9.8	4	9.8
Total		2	4.9	5	12.2	12	29.3	17	41.5	5	12.2	41	100.0

Source: Ground Survey, March 2016

Matching level= $\frac{2+5+11+15+4}{41} = 90.24$

Table 3.3 : Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement	Kappa	.864	.064	9.614	.000
N of Valid Cases		41			

Source: Ground Survey, March 2016

Based on Table 3.3 the researcher is 99% confident that about 90% of office interpreted land use categories match with GPS observed land use categories.

3.6.2. Livelihoods Impact Analysis

In order to examine the impact of land use dynamics on livelihoods in peri-urban settlements and determine the root causes of annual household income variation among the proposed independent variables. Hence, in order to investigate the relationships between the dependent and independent livelihoods variables of the survey data, the following statistical methods were used:

i. Analysis of variance(ANOVA)
ii. Multiple Linear Regression and Correlation analysis

Chi-square and non-parametric statistics for testing the significance of the relationships between categorical variables in the study were also utilized. In each test, the statistical significance of the results was assessed.

In order to conduct multiple linear regression analysis, this research proposed the following explanatory variables (predictors) to identify the most determining factors of dependent variable (Annual household income) after reviewing different researches' results and academic journals.

Dependent variable: Annual household income in ETB
Independent variables:

- Age of household head
- Sex of household head
- Educational Status of household head(0:Illitrate,1:Primary,2:Secondary 3:Completed high school,4: Completed under graduate, 5:Completed post graduate, 6: Read and Write
- Family size per household
- Land use size for cereal crops in hectare per household
- Access to entrepreneurship training (0:Yes, 1: No)
- Access to advisory support (0: Yes, 1: No)
- Risk awareness raising program on the adverse effect of land use dynamics(0:Yes,1:No)
- Number of farm oxen per household
- Number of fatten oxen per household
- Number of milk cow per household
- Number of Sheep per household
- Number of chicken per household
- Employment Opportunity (0:Yes, 1: No)
- Access to additional income activities(0:Yes, 1:No)

3.7. Reliability and Validity of Instruments and Methods

Whenever materials and methods in the data collection process are used, measuring the validity and reliability of that materials and methods is very crucial. Reliability and validity of the materials and methods are responsible to enhance the quality of data and appropriateness of the methods employed in the research process. According to Joppe(2000), cited in Golafshani (2003),reliability

is the extent to which results are consistent over time and an accurate representation of the total population under study. Kirk and Miller (1986) in Golafshani (2003), identified three events such as stability (repeated use of instrument), internal consistency (homogeneity of items), equivalence (Equivalence of 2 instruments) to ensure the reliability of the study. Validity, on the other hand, refers to the suitability or meaningfulness of the measurement. It indicates how well an instrument measures the constructs it purports to measure.

This research was done assessing reliability for any further measurements to be taken in the future related to the result of the study. The stability of the instrument was realized through repeated testing or test-retesting process with the same group of respondents to ensure reliability of the study. Golafshani (2003) described that ensuring reliability is not good enough to address the validity or trustworthiness of the research. Depending on this view, the validity or trustworthiness of this research was ensured through triangulating data collected through field observation, household survey and Key informant interview to draw more credible and defensible research results.

CHAPTER IV: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents the data with detailed analysis supported by satellite imageries and statistical tools such as Multiple Linear Regression Techniques and Coefficient of Correlation. In general, this chapter has provided discussion on six issues related to socio-economic characteristics of households, spatial and temporal land use dynamics, and determinant factors of peri-urban annual per capita income, vulnerability context of peri-urban households, adaptive livelihoods strategies, and impacts of land use dynamics on peri urban livelihoods of the study area.

4.2. The Households' Socio-Demographic Features

4.2.1 Age of Respondents

Majority of the respondents' age ranges between 34 and 72 and were believed in providing well thoughtful information associated with the impact of land use dynamics on their own livelihoods. It is very vital also to determine the degree of variation in the dependent variable /annual household income/

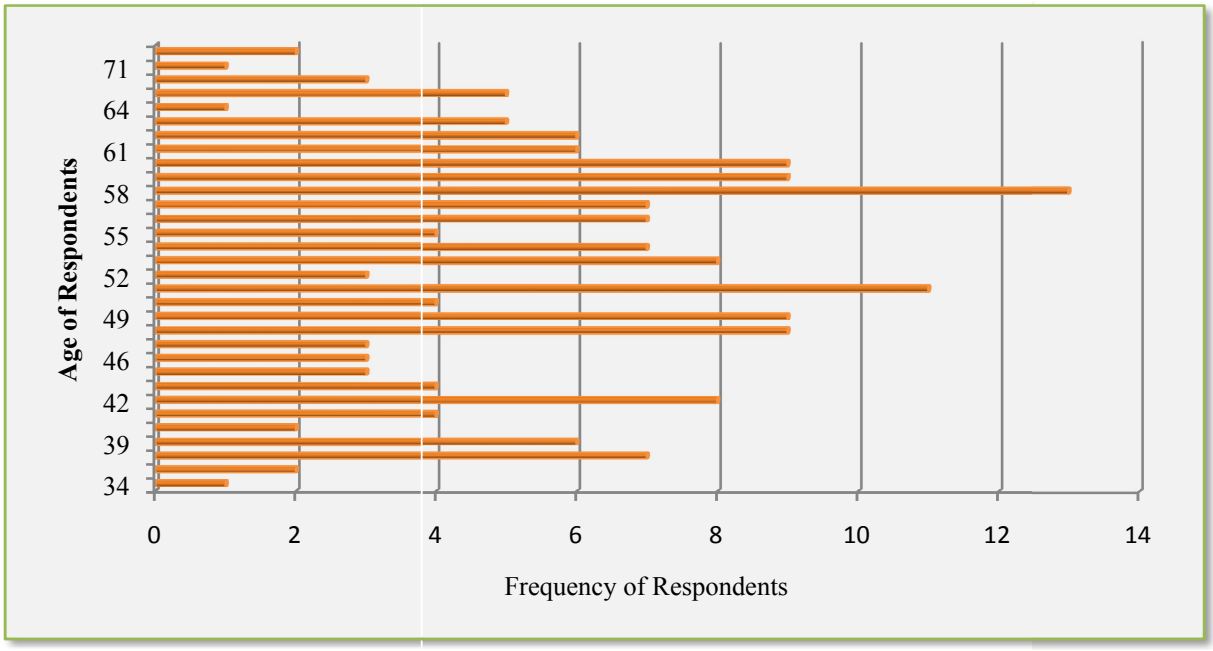

Figure 4.1: Age of Respondents
Source: Household survey, March 2016

4.2.2 Sex of the Households' Head

Figure 4.2 depicts that 84.3% of the respondents are male and 15.7% of respondents are female. It is very known that the degree of livelihoods impacts varies depending on gender differences and their access to locally available productive assets. Hence, gender has its own implication to investigate the types and magnitude of vulnerability in Koyefeche-Qilinto peri-urban areas associated with land use dynamics.

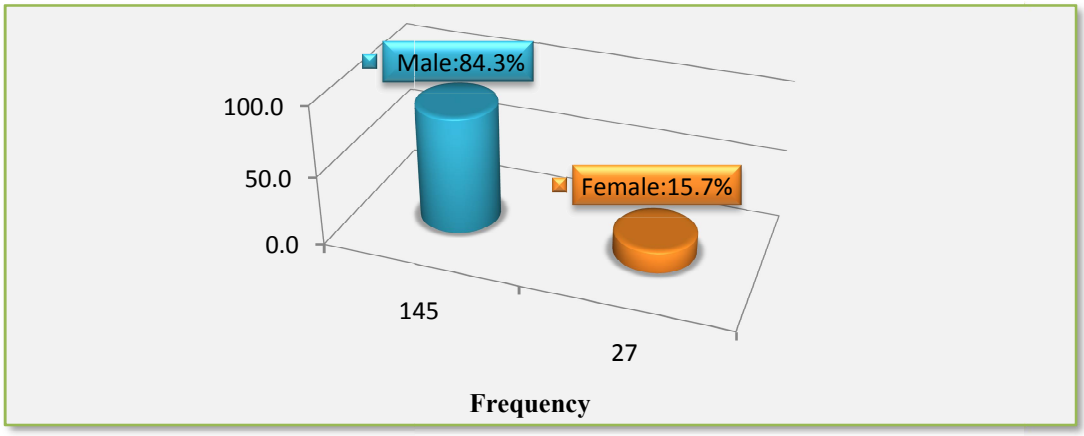

Figure 4.2: Sex of respondents
Source: Household Survey, March 2016

4.2.4 Educational background of the households

Regarding the educational background of the respondents, Figure 4.3 shows that 56% of them are illiterate farmers. Those who were literate virtually decline from 20% to 1% as we move from primary level to high school level while those who can "read and write" shared 14%.This implies that most of peri-urban settlers are illiterate farming settlers whose livelihoods could be affected with limited adopting & operating capacity of urban livelihoods systems as a consequence of land use dynamics. Thus, illiteracy was assumed in this research as one of the key factors affecting peri-urban livelihoods through retaining them from accessing and managing alternative non-farm income generating activities.

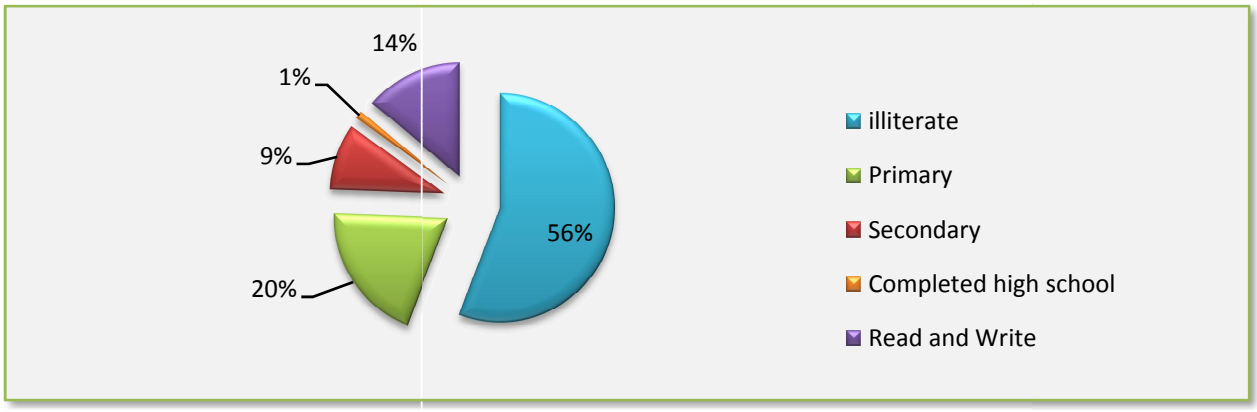

Figure 4.3: Educational background of the households
Source: Household Survey, March 2016

4.2.5 Family Size

While keeping other factors constant; a given household's expenditure is determined by the family size each of them holds. In the context of the study area, total family size was 856 with the average family size of 4.98 per household. And the study also identified that the minimum and maximum family size of the study area are found within a range between 2 and 12 respectively. The average family size investigated in the survey was almost similar with that of the size being used at woreda level (5.6) for socio-economic services. Thus, we can learn that those peri-urban farmers who had been exposed to expropriation of farmland and/or dislocation from old settlements have a large family size burden with a continuous diminishing farmlands and narrower income source condition.

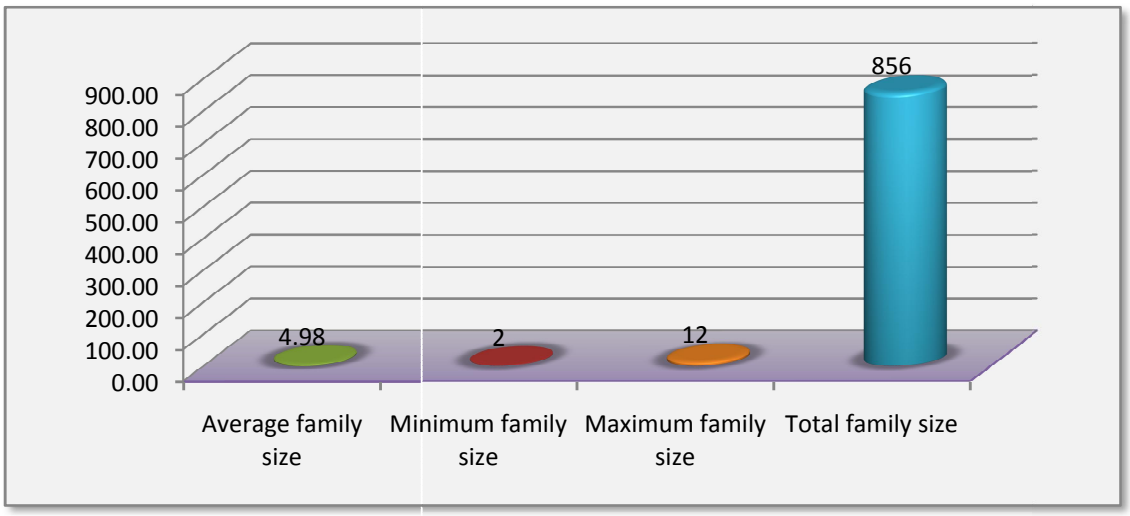

Figure 4.4: Respondents' Family size
Source: A households Survey, March 2016.

4.2.6 Number of Dependant

Numbers of dependants in a household determine the amount of expenditures to be incurred during expropriation and dislocation due to land use dynamics. As described in Figure 4.5, contacted households' head were found with number of dependants ranging from 2 to 12 and 23.3% of them were responsible to ensure the wellness of 5 dependants. Thus, the numbers of dependants have their own burden on livelihoods of expropriated and dislocated peri-urban settlers to measure the degree of vulnerability at the household level.

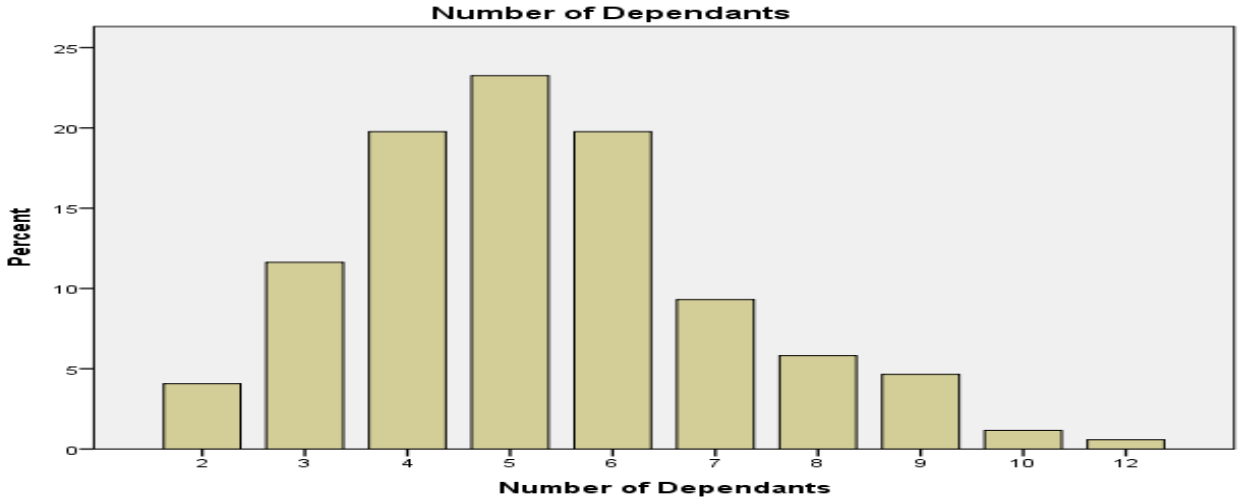

Figure 4.5: Number of dependants in a household
Source: Household survey, March 2016

4.3. Spatial & Temporal Land Use Dynamics in Peri-urban Area

Land use dynamics analysis was undertaken depending on satellite images of 1986, 2000 and 2016 classified land use maps of Koyefeche-Qilinto (woreda 9). As can be seen from the 1986 land use map of the study area, there had been cropland dominated land use with very few built up areas, forestland and plantation but relatively wide area of grasslands uniformly distributed in all parts of the study area. Very few numbers of built up areas had been observed across the west, east and south edges of the study area. However, according to the land use map in 2000 and Table 4.1, plantation came into being dominant increasing by 142.6% due to high market demand for eucalyptus trees especially for construction purpose in vicinity urban areas such as Kaliti, Akaki, Gelan & Dukem towns. Built-up area was also simultaneously increasing slightly concentrating at Tachignaw Qilinto *qetena*. Due to dynamicity of population and socio-economic interests in Addis

Ababa city, the coverage of built-up area has, surprisingly, increased by 679.9% in 2000-2016 with a critical decline of forest coverage from 2.9 % to 1.5% of the study area (See Table 4.1 & 4.4)

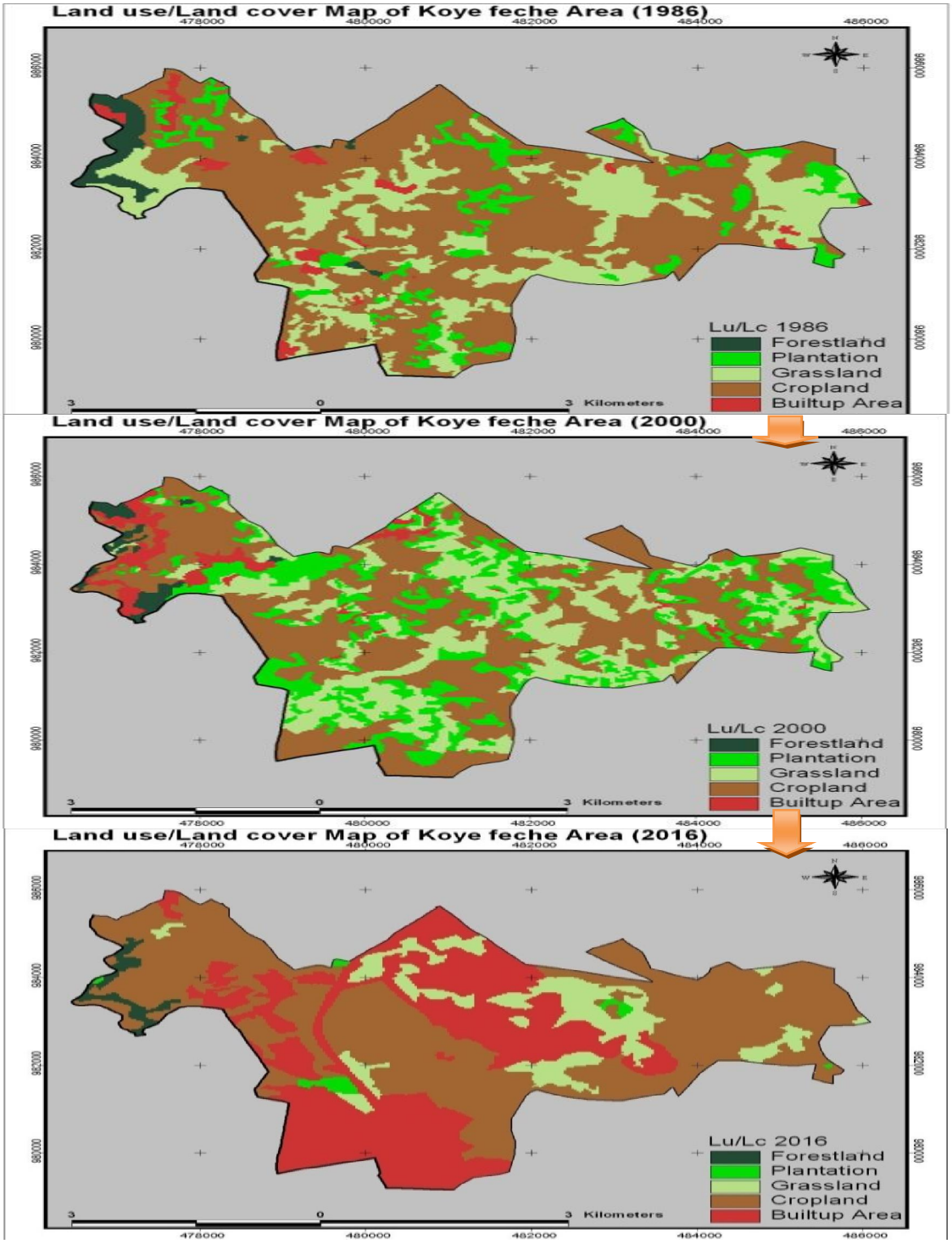

Figure 4.6: Land use maps of Koyefeche-Qilinto (Woreda 9) in 1986, 2000 and 2016
Source: Landsat TM and ETM^{+} images captured & processed by the researcher himself, March 2016

After a critical review of the classification of land use features of each satellite images separately, the spatial and temporal trends of land use dynamics was detected in Koyefeche-Qilinto area (woreda 9 of Akaki-Kaliti Sub City) using post classification comparison approach here below.

Table 4.1: Land Use Changes of Koyefeche-Qilinto Area (Woreda 9), 1986 –2016

Land Use Type	1986		2000		2016		Change 1986-2000		Change 2000-2016		Change 1986-2016	
	Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%
Forestland	89.6	2.9	58.1	1.8	47.5	1.5	-31.6	-35.2	-10.5	-18.1	-42.1	-47.0
Plantation	278.9	8.9	676.7	21.5	30.4	1.0	397.8	142.6	-646.3	-95.5	-248.3	-89.1
Grassland	820.8	26.1	812.8	25.9	341.6	10.9	-8.0	-1.0	-471.2	-58.0	-479.2	-58.4
Cropland	1860.7	59.2	1450.9	46.2	1612.6	51.3	-409.8	-22.0	161.73	11.1	-248.0	-13.3
Builtup Area	90.5	2.9	142.1	4.5	1108.4	35.3	51.6	57.0	966.2	680	1017.8	1124.6
Total	**3140.6**	**100**	**3140.6**	**100**	**3140.6**	**100**	**0.0**	**0.0**	**0**	**0.0**	**0**	**0.0**

Source: Extracted from analysis of Landsat images of 1986, 2000, and 2016

Table 4.2: Land Use Change Matrix of Koyefeche-Qilinto Area(Woreda 9) ,1986 - 2016

		Land use types 1986											
	LU type	Forestland		Plantation		Grassland		Cropland		Built up Area		Total	
		Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%
Land use types 2016	**Forestland**	36.0	40.2	0.0	0.0	11.5	1.4	0.0	0.0	0.0	0.0	47.5	1.5
	Plantation	2.5	2.8	3.9	1.4	13.2	1.6	7.9	0.4	2.88	3.2	30.42	1.0
	Grassland	1.4	1.5	12.9	4.6	146.5	17.9	174.0	9.3	6.93	7.7	341.64	10.9
	Cropland	46.1	51.4	153.5	55.0	452.9	55.2	914.5	49.1	45.72	50.5	1612.62	51.3
	Built-up Area	3.7	4.1	108.7	39.0	196.7	24.0	764.3	41.1	35.01	38.7	1108.35	35.3
	Total	**89.6**	**100**	**278.9**	**100**	**820.8**	**100**	**1860.7**	**100**	**90.5**	**100**	**3140.6**	**100**

Source: Extracted from analysis of Landsat images of 1986, 2000, and 2016

In the first analysis period (1986-2000), the built-up area expansion was contributed by 21.3ha (23.8%), 7.1ha (2.5%), 23.7ha (2.9%) and 81ha (4.4%) conversion of forestland, plantation, grasslands and cropland, respectively. In the second analysis period (2000-2016), the built-up area expansion was contributed by 1.5ha (2.6%), 286.5ha (42.3%), and 330ha (40.6%) and 461.3ha (31.8%) conversion of forestland, plantation, grassland and cropland respectively. Cropland areas have shown a net loss of 409.8ha in the first analysis period and reached 1450.9ha in 2000.This was majorly due to the conversion of 446.6ha (24%) grassland, 389.3ha(20.9%)plantation, and 81ha(4.4%) built-up areas.

Table 4.3: Land Use Change Matrix of Koyefeche-Qilinto Area (Woreda 9), 1986 - 2000

		Land Use types 1986											
	Lu/Lc type	**Forestland**		**Plantation**		**Grassland**		**Cropland**		**Built-up Area**		**Total**	
		Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%
Land Use types 2000	**Forestland**	35.6	39.8	0.0	0.0	17.6	2.1	4.2	0.2	0.5	0.6	58.1	1.8
	Plantation	2.6	2.9	94.8	34.0	167.9	20.5	389.3	20.9	22.05	24.4	676.7	21.5
	Grassland	5.4	6.0	87.8	31.5	265.5	32.3	446.6	24.0	7.47	8.3	812.8	25.9
	Cropland	24.7	27.5	89.2	32.0	346.1	42.2	939.5	50.5	51.48	56.9	1450.9	46.2
	Built-up Area	21.3	23.8	7.1	2.5	23.7	2.9	81.0	4.4	9	9.9	142.1	4.5
	Total	**89.6**	**100**	**278.9**	**100**	**820.8**	**100**	**1860.7**	**100**	**90.5**	**100**	**3140.6**	**100**

Source: Extracted from analysis of Landsat images of 1986, 2000, and 2016

However, during the second analysis period (2000-2016) the coverage of croplands has increased by 161.72ha in the presence of rapid urbanization which converted 461.3ha of cropland. This was due to unsympathetic pressure on the existing few forests and plantation to survive within agricultural livelihoods in the area. Consequently, 31.4ha (54.1%) of forestland and 351.5ha (51.9%) of plantation were converted into cropland. Due to a competitive land use dynamics pressure between cropland & urban expansion, the trend of forestland throughout the analysis period(1986-2016) have shown a continuous decline from 89.6ha in 1986 to 47.5ha in 2016.

Table 4.4: Land Use Change Matrix of Koyefeche-Qilinto Area (Woreda 9), 2000 – 2016

		Land use types 2000											
	LU type	**Forestland**		**Plantation**		**Grassland**		**Cropland**		**Built-up Area**		**Total**	
		Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%	Ha.	%
Land use types 2016	**Forestland**	24.5	42.2	0.5	0.1	1.5	0.2	10.2	0.7	10.8	7.6	47.5	1.5
	Plantation	0.6	1.1	1.7	0.3	7.8	1.0	20.3	1.4	0	0.0	30.42	1.0
	Grassland	0.0	0.0	36.5	5.4	138.0	17.0	159.5	11.0	7.65	5.4	341.64	10.9
	Cropland	31.4	54.1	351.5	51.9	335.4	41.3	799.7	55.1	94.59	66.6	1612.62	51.3
	Built-up Area	1.5	2.6	286.5	42.3	330.0	40.6	461.3	31.8	29.07	20.5	1108.35	35.3
	Total	**58.1**	**100**	**676.7**	**100**	**812.8**	**100**	**1450.9**	**100**	**142.11**	**100**	**3140.6**	**100**

Source: Extracted from analysis of Landsat images of 1986, 2000, and 2016

These all imply that land use dynamics is unrest phenomena that could have a possibility of dislocating and /or dispossessing households while disrupting their livelihoods strategies unless

appropriate intervention is taken place to prevent the occurrence of livelihoods risks and to successfully absorb urban opportunities for enhancement of livelihoods at the local level.

4.3.2 The Rate of Land Use Dynamics in Koyefeche-Qilinto Area

Over the study period, built-up area has increased by 33.93ha per annum with 8.27ha, 15.97ha; 8.28ha and 1.4ha per annum reduction of cropland, grassland, plantation and forestland, respectively (see Table 4.5). As can be seen in Table 4.2 and 4.4, even though cropland was the major contributor (i.e. 42.62%) for urban expansion (1108.35ha), it seems that it is less sensitive to respond to urban pressure as compared to others. The hidden logic behind was that the crop producing farmers were resisting to detach themselves from agricultural livelihoods and striving to survive competitively with urban livelihoods removing forests for crop expansion.

Table 4.5: Rate of Land Use change (hectare) per annum in Koyefeche-Qilinto Area, 1986 -2016

Land use type	Year		
	1986-2000	2000-2016	1986-2016
Forestland	-2.26	-0.66	-1.4
Plantation	28.41	-40.39	-8.28
Grassland	-0.57	-29.45	-15.97
Cropland	-29.27	10.11	-8.27
Built-up Area	3.69	60.39	33.93

Source: Computed based on data extracted from image analysis, April 2016

4.4 Impacts of Land Use Dynamics on Peri-Urban Livelihoods

This section provides rigorous analytical descriptions related to the impacts of LUD on livelihoods assets/capitals since 2010, the year of intensive expropriation of farmlands. In doing so, the study measured the households' asset position in terms of financial, physical, social and natural assets before/after expropriation of farmlands

4.4.1. Households' Financial Assets Position

Before the year of expropriation and/or dislocation (2010), the target households had a capacity to earn an average annual income of ETB 76,154.00 from agricultural and related activities and came down to ETB 52,160 in 2016. The minimum annual earning capacity of affected households between 2010 and 2016 was also declined by 28.8% while the maximum annual earning capacity reduced by 38.5%.

Table 4.6: Financial assets position of affected households in 2010 and 2016

Household Income(ETB/annum)	Year		Change 2010-2016	
	2010	2016	ETB	%
Average HH income	76,154.00	52,160.00	-23,994	-31.5
Minimum earning capacity	40,000.00	28,500.00	-11,500	-28.75
Maximum earning capacity	130,000.00	80,000.00	-50,000	-38.46

Source: Household survey, March 2016

Hence, it implies that the financial asset position of affected households in the study area has diminished and exposed them to less purchasing power in the market to fulfill their basic needs and sustain their livelihoods.

4.4.2 Household Natural Assets Position

As part of natural assets, landholding size of peri-urban settlers is restlessly changing with the expansion of urban area. As can be seen in Table 4.5 above, the rate of land use dynamics for urban use per annum is constantly increasing while the other land uses (forestland, grassland, plantation and cropland) are diminishing at alarming rate from year to year especially in the last analysis period (2000-2016).Accordingly, 41% of the total cropland and 24% of the grassland were converted into urban land during the study period (1986-2016). Surprisingly, 54.1 %(31.4ha) of forestland of the study area was relatively more affected by actions taken by farmers to expand their cropland for survival as per the second phase analysis of land use dynamics (2000-2016). Even though forestland area was observed almost as equal as built-up area before 1986, its coverage has been critically declined subsequently until 2016 while built-up areas have been expanding horizontally controlling over other land use categories (see Figure 4.7). Such decreasing trends of forestland can be seen as a paradoxical phenomenon against the efforts every nation is doing to mitigate the global climate change problems.

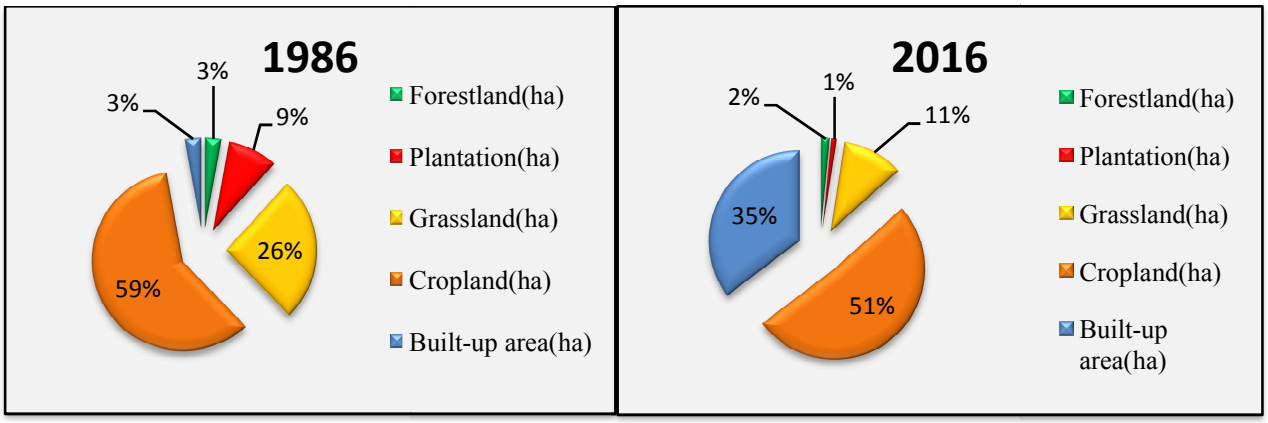

Figure 4.7: Trends of forestland in relation to built-up area between1986-2016
Source: Household Survey, March 2016

4.4.3 Household Physical Assets Position

With regard to livestock assets before and after expropriation of farmlands and/or dislocation from the former residences, the oxen, the cows, the sheep and poultry were purposely taken into the account of measurement and the following analysis has been made. Due to reduction of grassland and farmlands, except fatten oxen, all components of livestock were decreased significantly as can be seen in the Table 4.7 From this we can infer that land use dynamics with rapid urbanization phenomenon has significant impact not only on the size of cropland but also on the number of livestock assets owned by a household

Table 4.7 Livestock Asset Position in 2010 and 2016

Average Number Livestock/HH	2010	2016	Change (2010-2016)	
			Livestock/HH	%
Farm Oxen	3.26	0.7	-2.56	-78.53
Fatten Oxen	0.12	0.26	0.14	116.67
Milk cow	1.88	0.72	-1.16	-61.70
Sheep	4.91	2.28	-2.63	-53.56
Chicken	6.92	4.18	-2.74	-39.60

Source: A households' survey, March 2016

However, as part of physical assets, the average number of houserooms built by non-dislocated households for renting purpose using the advantage of urbanization in the study area was raised by 18.2%. This, in turn, enabled the households to some extent mitigate the adverse effect of land use dynamics even though it is not capable enough to easily adopt urban livelihoods due to limitation in entrepreneurial skills.

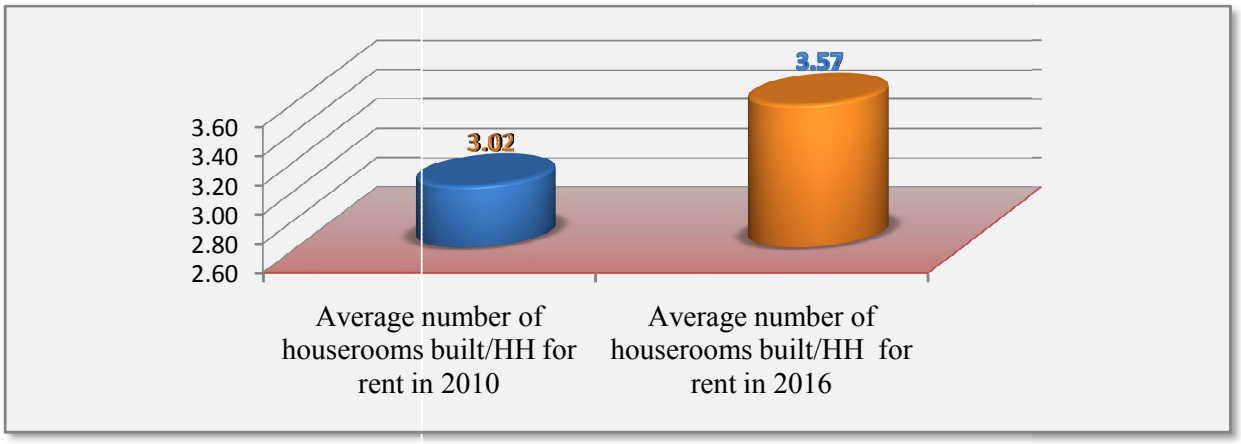

Figure 4.8: Number of houserooms built for renting as part of physical asset
Source: Household survey, March 2016

4.4.4 Household Social Capital Position

Social relationship is a crucial determinant to measure the degree of social capital that households should possess to sustain their livelihoods especially in the presence of dynamicity. A household having social network and cooperation is expected to be in a better position of social capital. As can be seen in the Table 4.8, among the respondents, the very high and high social status categories were shown decreasing after farmland expropriation in 2010 and in the contrary, the number of households in the moderate, low and very low social status categories were raised substantially due to the adverse impact of land use dynamics in the study area.

Table 4.8: Households' social assets position before and after 2010

Social Status Category	Number of HH	
	Before 2010	After 2010
Very high	70	5
High	80	48
Moderate	21	72
Low	1	44
Very low	0	3

Source: A households' survey, March 2016

This implies that many of the affected households who were categorized in very high and high social status have come down mostly to the moderate and low social status categories level while emerging very low social status category. Related to the trends of social capital among the affected households in the area, the study used the case received from the key informant's view to further verify the degradation of social capitals at the household level.

Case: Urban Expansion and Its Impact on Social Capital

We had very tied relationship and bonded together through different socio-cultural obligations. Formerly, for example, we had 'Idir', and 'Debo/Jigee Mahiber' were socio-cultural institutions to support members at the time of disaster risks such as illness, death and disability to help powerless households through housing, farming, harvesting, weddings and related traditional ceremonies, to settle members' disputes and to maintain a common value. But now we rarely see such life and many of our friends and neighbors including me are not willing to support others since we are running to win our own bread. We have 'idir' even after expropriation and dislocation but it lost members' commitment and participation to help others at a time of risk for rehabilitating their livelihoods.

*Some of us have lost our farmland and others have dislocated from their previous home and resettled in other place within the woreda. Due to this, many of us don't have adequate agricultural yields and additional income which help us to strengthen our social relationship. Inadequate resources availability is not the only reason for a decline of social relationship but the attitude of people has deviated obeying the previous socio-cultural obligations. There is saying in Amharic regard to this-"**ወዳጅ ሲያረጅ በጓሮ ይሄዳል!**" Generally, a culture of socio-economic relationship has become weak primarily because of urban intervention and insufficient access to non-farm job opportunity in our vicinities.*

(One of my key informants, March 2016)

As the narrated information of the Case above drawn from a key informant shows us, before the households were being expropriated and/or dislocated due to land use dynamics over the study area, peri-urban settlers of this community had very tied relationship that is based on socio-cultural institutions that obligate each and every members to support others at the time of disasters, and other conditions which are beyond the capability of a household in certain time. Each and every household which is the member of these institutions have the rights to claim support from the members via the institutions which all are the typical features of the peri-urban settlers. However, this kind of traditional institution has been shrunk almost to extinction stage after the expropriation of farmland and dislocation of households.

4.5 Multiple Linear Regression Analysis

This multiple linear regression analysis technique was employed in this research to analyze the nature and level of determinants of annual household income available among peri-urban settlers in

the presence of land use dynamics in the study area. In connection to this, the study forwarded 15 explanatory variables at the outset of Multiple Linear Regression Analysis.

4.5.1 Rationale for selecting the variables

As mentioned above, 15 explanatory variables were selected for the aforesaid regression analysis. They were thought to determine the annual household income status of expropriated and dislocated farming peri-urban settlers under the influence of land use dynamics for urban expansion. It should be noted that these variables are assumed to have more significant effect on the households' annual income variations. The effect of the other factors such as climatic conditions, soil fertility and policy issues are held constant or considered as if they have similar impact on all the households as they are settled in the same agro ecological zone (*Woynadega*)

Number of fatten oxen per HH(X_{10}), milk cow per HH(X_{11}), and chicken per household (X_{13}) have been selected from livestock assets as an important variables likely to predict the variation in annual income positively given that they have considerable market demand and favorable to develop resilient community through urban agriculture project in the presence of land use dynamics. However, number of farm oxen per HH(X_9) and sheep per HH(X_{12}) were assumed expecting that they are likely predict the variations of annual household income negatively as the size of grassland decreases due to urban expansion.

Besides, land use size for cereal crop in hectare per HH (X_5) was similarly proposed in the regression analysis as a key positive predictor for the variation of annual income at the household level in the view that non-farm alternative income generating activities have not been adequately established in the presence of land use dynamics. Even though farmland available for agricultural livelihoods declines due to urban expansion, it remains important to produce cereal crops and generate extra cash to purchase other consumable commodities and create resilient households. Age(X_1) and educational status of household head (X_3) were taken to regression analysis expecting that both variables are positively correlated with the variation of household income with the understanding that they are tools to enhance technical skills and experiences useful for income improvement. Family size (X_4) was assumed in the regression analysis expecting a negative association with annual household income since farm landholding size of the household could

decrease with the increase in family size. Finally, sex of household head (X_2) is also considered as a predictor for dependent variable (per capita livelihoods income) assuming that men are more influential than women in the variation of annual household income. Furthermore, access to entrepreneurship skill trainings(X_6), advisory support(X_7), awareness on the adverse effect of LUD(X_8), employment opportunity per HH (X_{14}) and additional income per HH(X_{15}) were also considered in the regression analysis expecting that they are positively related to annual household income in the presence of land use dynamics to gear farming peri-urban settlers towards non-farm businesses in the study area.

4.5.2 Regression Analysis Results

Multiple linear regression model was used to analyze the associations between the households' per capita annual livelihoods income (dependent variable) and the selected 15 explanatory (independent) variables. In doing so, the overall significance of this model for variation of dependent variable (annual household income) was tested using ANOVA as shown below:

H_o: $\beta 1 = \beta 2 = \beta 3 = \cdots \beta 15$: There is no linear relationship between predictors and the responsive variable

H_1: $\beta 1 \neq \beta 2 \neq \beta 3 \neq \ldots \beta 15$: At least one predictor determines the responsive variables

Table 4.9: Test of the model: ANOVA[a]

Model	Sum of Squares	Degree of freedom	Mean Square	F	Sign.
Regression	10194461040.125	15	679630736.008	9.300	.000[b]
Residual	11400392157.549	156	73079436.907		
Total	21594853197.674	171			

Source: Household Survey, March 2016

As indicated in Table 4.9,the overall significance of regression model for variation of annual household income was found to be statistically significant with F *ratio*=9.3 and $\alpha = 0.000$. This indicates that at least one explanatory variable is different from zero and determines variation in the dependent variable i.e. Annual household income. On top of this, the data have been tested for normality, homoscedasticity and multicollinearity problems. The assumption of normality was assessed by Kolmogorov-Smirnov and Shapiro-Wilk tests as well as Q-Q plot (See Appendix 2 and 3). This test was carried out in this research for the very purpose that the errors are identically and independently distributed.The assumptions homoscedasticity (homogeneity of variance) are that error variance should be constant and the variance of the residuals is homogeneous across the levels

of the predicted values. However, as can be seen from the scatter plot on Appendix 3, there is some heteroscedasticity problem in error variance distribution across the predicted value. Likewise, since VIF for all the variables in the Table 4.10 are less than 10 or Tolerance value is greater than 0.10, and thus there is no multicollinearity among independent variables.

Table 4.10: Summary of the results of multiple linear regression analysis

Explanatory Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
X_1:Age of Respondents	109.972	119.762	.082	.918	.360	.424	2.357
X_2:Sex of HH head	177.475	2157.030	.006	.082	.935	.690	1.449
X_3:Educational Status of HH head	141.424	355.963	.026	.397	.692	.814	1.229
X_4:Family Size	180.425	391.295	.036	.461	.645	.555	1.802
X_5:Land use size for Cereal Crop in ha per HH	12265.436	2876.781	.362	4.264	.000	.470	2.129
X_6:Access to entrepreneurship skill training(0:yes,1:No)	1757.016	2152.188	.056	.816	.416	.715	1.399
X_7:Access to Advisory Support(0: Yes, 1:No)	-2341.349	5269.696	-.028	-.444	.657	.879	1.138
X_8:Risk awareness raising program on adverse effects of land use dynamics(0:Yes,1:No)	-756.809	1639.677	-.033	-.462	.645	.665	1.505
X_9:Number of farm oxen per HH	2961.182	955.245	.252	3.100	.002	.512	1.951
X_{10}:Number of fatten oxen per HH	1286.730	976.613	.082	1.318	.190	.883	1.132
X_{11}:Number of milk cow per HH	624.842	1234.227	.037	.506	.613	.643	1.555
X_{12}:Number of sheep per HH	244.713	342.949	.052	.714	.477	.635	1.575
X_{13}:Number of Chicken per HH	-97.751	198.389	-.035	-.493	.623	.680	1.471
X_{14}:Employment Opportunity(0: Yes, 1:No)	-2082.033	1594.638	-.092	-1.306	.194	.679	1.472
X_{15}:Access to Additional Income activities(0:Yes, 1:No)	-4914.511	1659.733	-.197	-2.961	.004	.767	1.304
Constant	42903.284	7464.243		5.748	.000		
R	0.687						
R Square	0.472						
Adjusted R Square	0.421						
Standard error of estimate	8,548.65117						

Source: Household Survey, March 2016

Among the explanatory variables Land use size for cereal crop in ha per HH(X_5), Number of farm oxen per household(X_9), and Access to additional income activities(X_{15}) were found to be the major determinants of the annual household income of peri-urban settlers. The associations of these three variables were found to be statistically significant at 99% of confidence level.

Accordingly, the reduced model of regression analysis is found to be:

$$Y = \alpha + 12265.436X_5 + 2961.182X_9 - 4914.511X_{15}$$

This regression model indicates that the major source of annual household income for expropriated and/or dislocated households was dominantly dependent on agricultural activities related to cereal crop production using croplands left from expropriation and contractual farmland elsewhere in the vicinity area with support of farm oxen available per HH. However, the emerging non-farm additional income generating activities were negatively related with the agricultural based annual household income in the study area. One additional hectare of land use for cereal crops per HH was expected to increase the annual household income by 12265.436 while one additional number of farm oxen per HH also contributed for growth of annual household income by 2961.182 units. In the contrary, access to additional income, according to the reduced model, was negatively associated with the annual household income and accountable for reduction of the annual household income by 4914.511 units.

As depicted in Table 4.11 below, 47.2% of the variance in the annual household income was explained by this model and the results confirmed the availability of key determinants in variation of annual household income.

Table 4.11: Model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
.687[a]	.472	.421	8,548.65117	.472	9.300	15	156	.000	1.574

Source: Household Survey, March 2016

4.6 Vulnerability contexts of the Study Area

4.6.1 Environmental Vulnerability

Vulnerability is a dynamic quality that can be altered suddenly or gradually by changes in social and biophysical conditions (Adger and Kelly, 1999; Leichenko and O'Brien, 2002 sited in Luers,

2005).Depending on land use dynamics analysis in 1986-2000 and 2000-2016, 24.7ha (27.5%) of forest was replaced by cropland aiming at off-setting 81ha of the expropriated farming land due to urbanization program. Similarly, during 2000-2016 analysis period, removal of forest for crop production purpose alarmingly increased to 31.4ha (54.1%) while horizontal urban expansion pursue to take over 461.3ha of farming land(cropland). These dynamic trends of forest reduction coupled with impervious land cover due to urban settlements is likely to facilitate runoff, flash floods and environmental degradation in the area as a whole seriously affecting particularly farming peri-urban households. This continuous decline of forest cover in the study area was also verified by almost all respondents in survey, even though their views associated with the causes of forest reduction were different as depicted in Table 4.12.

Table 4.12: Major factors affecting forest coverage based on HH responses

Factors affecting Forest Coverage	Number of respondents	Percent
Crop expansion	11	6.4
Urban expansion	133	77.3
weak protection	11	6.4
Crop & urban expansion	17	9.9
Total	**172**	**100.0**

Source: Household Survey, March 2016

Even though urban expansion was responded as the dominant factor for critical forest reduction in the study area, its direct impact on forest was not as such significant as compared to that of the cropland. However, the combination of cropland & unplanned urban expansion along with weak forest protection are the considerable factors for reduction of forest coverage which could trigger environmental vulnerability at the local level.

4.6.2. Financial vulnerability

Due to a dynamic pressure of socio-economic interest, sustainable livelihoods can't be supported by natural resource-based activities (agriculture) in many parts of the World (Wisner et al,2003). According to Table 4.6 in this study, the average annual farm earning capacity of the farming peri-urban settlers was substantially shrunk by 31.5%. As can be seen from Table 4.13, those instruments such as entrepreneurial skill training, advisory support and formal awareness techniques almost had no association with the annual household income as they had not been adequately carried out at the local level ahead of expropriation. Consequently, the expropriated and dislocated farming peri-urban settlers were not able to diversify their alternative income sources employing

income generating skills and compensation payment to easily engage in non-farm urban livelihoods activities. Recently, at the time of rapid land use dynamics with a critical decline of farmlands, forestlands and grasslands, using agricultural livelihoods strategies associated with cereal crop land use and farm oxen have become risky to generate adequate household income due to the present rapid urbanization in the study area. Hence, dislocated and expropriated households were found financially vulnerable as they had no adequate income generating skills before expropriation and compensation are taken place. The strength of association of access to entrepreneurial skills, access to advisory support and awareness raising activities to explain the variance of the existing annual household income was very weak as can be seen from Table 4.13. This implies that many of dislocated & expropriated peri-urban settlers were not able to generate non-farm income activities utilizing technical income generating skills in combination with compensation payment undertaken after expropriation and dislocation.

Table 4.13: Strength of association between explanatory variables & dependent variable

Explanatory Variables	Coefficient of Correlation	Coefficient of Determination	% of Determination
X1: Age of Respondents	.389	0.151	15.13
X2: Sex of HH head	-.151	0.023	2.28
X3: Educational Status of HH head	-0.12	0.014	1.44
X4: Family Size	.333	0.111	11.09
X5: Land use size for Cereal Crop in ha per HH	.593	0.352	35.16
X6: Access to entrepreneurship skill training	0.029	0.001	0.08
X7: Access to Advisory Support(0: Yes, 0: No)	0.02	0.000	0.04
X8: Risk awareness raising program on adverse effects of land use dynamics(0:Yes, 1: No)	-0.038	0.001	0.14
X9:Number of farm oxen per HH	.484	0.234	23.43
X10: Number of fatten oxen per HH	0.089	0.008	0.79
X11:Number of milk cow per HH	.332	0.110	11.02
X12: Number of sheep per HH	.273	0.075	7.45
X13: Number of Chicken per HH in 2016	.167	0.028	2.79
X14: Employment Opportunity(0: Yes, 1:No)	-0.022	0.000	0.05
X15: Access to Additional Income(0:Yes, 1:No	-.321	0.103	10.30

Source: Household Survey, March 2016

Even though the government set compensation rate per meter square of expropriated farmland in different rounds (see table 4.14) based on the dynamic nature of market situation, many expropriated settlers were not comfortable with the rate perceiving urban livelihoods as complex and beyond their level experience.

Table 4.14: Rate of Compensation set in different rounds for expropriated peri-urban settlers

Expropriation Round	Year of Expropriation	Rate of Compensation(ETB/m^2)
1st	2005	3
2nd	2005-2011	11.89
3rd	2011-2013(Sept.)	18.50
4th	2013(Sept)-2015(Nov.)	29.50
5th	2015(Nov.)-up to completion of the Thesis	33.50

Source: Akaki-Kaliti S/city Urban Development & Rehabilitation Division

According to the household survey data, 77.9% of respondents were dissatisfied with its adequacy considering its weak purchasing power in the existing markets to fulfill household's basic needs. However, 19.8% of respondents expressed their feeling indifferently while only 1.2% of respondents were satisfied with the given set compensation rate (see Table 4.15).

Table 4.15: Status of HHs satisfaction for received compensation

HH feeling to Compensation	# of HH	Percent of HH
Satisfied	2	1.2
Indifferent	34	19.8
Dissatisfaction	134	77.9
Total	170	98.8
Not applicable	2	1.2
Total 172	100.0	

Source: Household survey, March, 2016

Hence, it implies that even though there is declaration number 455/1997 that enforces compensation to be paid for legitimate land owner for the land expropriated to public interests, many of farming peri-urban settlers are willing to be compensated with another farmland. According to the key interview made with elders, expropriated & dislocated peri-urban settlers were using their compensated money to secure one season contractual farmland elsewhere inside & outside their

political administrative area spending ETB 3000-3500 for a square meter of farmland rather than easily engage in non-farm livelihoods activities. However, due to limitation in financial management knowledge and technical income generating skills, many expropriated households couldn't properly utilize their financial capital but depleted with no effective adaptation to urban livelihoods because of financial vulnerability.

4.6.3 Human Vulnerability

The coordination among livelihoods assets of the households such as human (entrepreneurship skills & employability), social (cooperation, local institutions and participation in decision-making process) and personal assets (motivation, self-confidence and emotional well-being) are expected to play a crucial role in mitigating risks through investing on reduction of vulnerability. However, the household survey data in Figure 4.8 showed that all these factors were not sufficiently given due attention ahead of compensation payment and expropriation of farmlands so as to enhance their employability and preparation to mitigate the adverse impact of land use dynamics. As part of the building blocks in sustainable livelihoods framework, Messay (2012) has discussed the significance of peoples technical skills within a frame of human asset to determine the economic status and livelihoods security of the community to a great extent. This implies the reality that entrepreneurship skill training and continuous advisory support have inevitable role in strengthening copping strategies and easily adapting urban livelihoods to mitigate the likely risks of livelihoods in the land use dynamics process. To this end, this study examined that many respondents had no access to income generating capacity building trainings and awareness raising prior to compensation payment and expropriation as depicted in Figure 4.8.

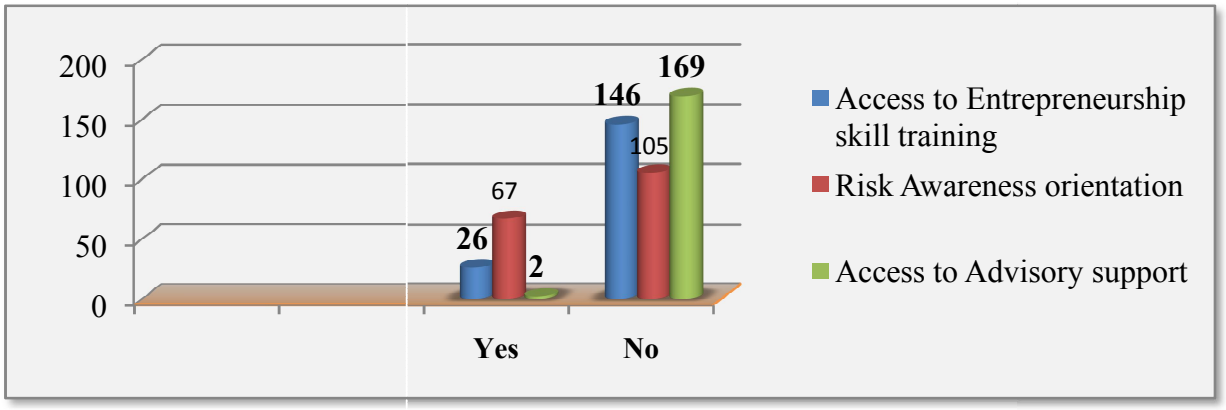

Figure 4.9: Access to entrepreneurship skill, risk awareness & advisory supports
Source: Household Survey, March 2016

Thus, consequently, employability and operational capacity of the households to effectively utilize urban opportunity to improve their livelihoods were not grown to ensure their wellbeing at the local level after expropriation and displacement. Furthermore, from Table 4.10 of this research, it was possible to investigate weak association manifested between sex of respondents and annual household income. In light of this, sex of the respondents was responsible for explaining only 2.28% of variation in the annual household income as can be seen in the Table 4.13.This was due to limited access to gender based income generating skill trainings for enhancing human capital at the household level.

4.6.4 Social Vulnerability

Vulnerability may result from exclusion of communities from social, cultural and political processes affecting households' well-being and responses to negative change (Shahbaz, 2008).In this study, as depicted in Figure 4.9 households were not adequately involved in decision making processes of farmland expropriation and dislocation to look for appropriate non-farm income generating activities at the local level.

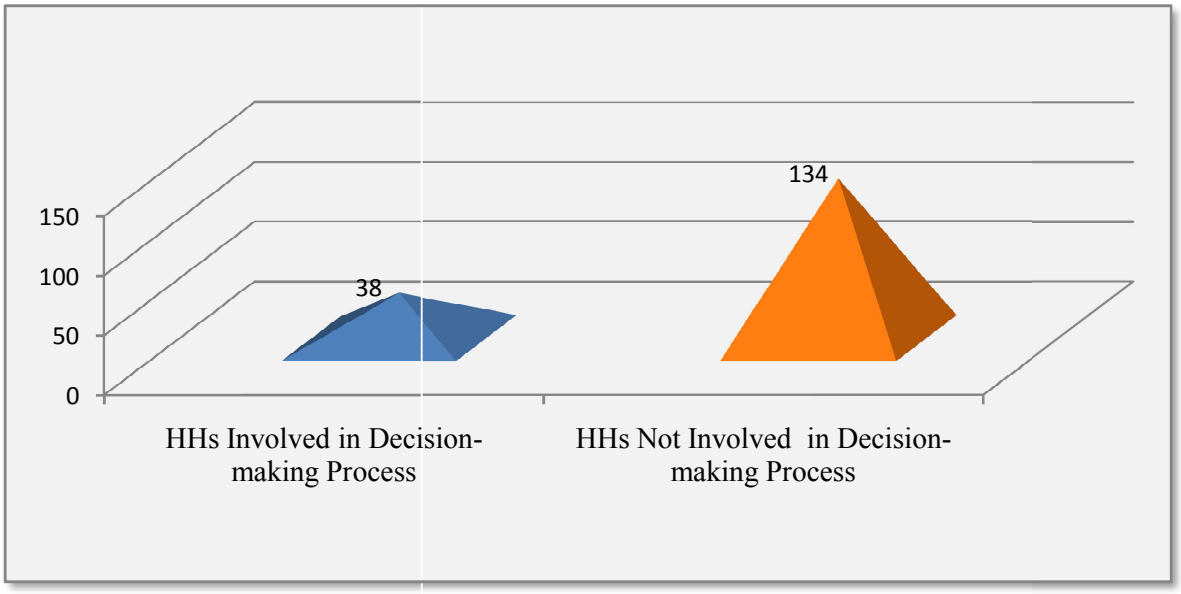

Figure 4.10: Involvement of households in urbanization process
Source: Household Survey, March 2016

On top of this, as can be seen from the 'case' received from the key-informant under sub section '4.4.4' of this thesis , Social tied-up and interconnection of expropriated & dislocated peri-urban settlers through local institutions(*Idir, Iquib, Debo Mahiber* and others) decreased due to the adverse impacts of land use dynamics in the study area.

4.7 Adaptive & Coping Livelihoods Strategies of Peri-urban settlers

Considering the pressures of land use dynamics into account, peri-urban households had different adaptive livelihoods strategies. These were broadly categorized into major and additional income generating livelihoods strategies.

4.7.1 Major Income Generating Livelihoods Strategies

Based on Table 4.10, agriculture still remains a dominant income generating activities employing cereal cropland and farm oxen. Table 4.16 also indicated that agricultural livelihoods (Agriculture on remaining piece of farmland, fattening and sales of milk, chicken, egg & Sheep) have still been providing employment opportunity to about 83% of expropriated and/or dislocated households. Cereal crop production using the remaining piece of fragmented farmland occupied the largest share (53%) among major livelihoods strategies of respondents. However, daily labor, Bajaj taxi and self-employment (small shops and alcoholic liquor shop) were also found important in providing alternative employment opportunities for 14.6%, 12.2% and 11.6% respondents, respectively.

Table 4.16: Major income generating activities of peri-urban settlers

Major Income Generating Activities	# of HHs	Percent
Self employed	20	11.6
daily labor	25	14.5
Employed in Government Organization	1	.6
Employed in private Organization,	6	3.5
Fattening	11	6.4
Small Restaurant & Cafe	8	4.7
Bajaj taxi	21	12.2
Egg, milk products, chicken & sheep selling	19	11.0
Agriculture on remaining farmland	53	30.8
Total	164	95.3
Not applicable	8	4.7
Total	**172**	**100.0**

Source: Household Survey, March 2016

Regardless of its adverse consequences on those households who did not prepare themselves as early as possible, urbanization was found very opportunistic for about 45.9% of respondents who were able properly utilize their compensated payment. Bajaj taxi service and small restaurant &

Café created job opportunity for 12.2 % and 4.7% contacted households respectively and helped them to structurally transform from traditional agricultural livelihoods into the advanced urban livelihoods strategies.

4.7.2 Additional Income Generating Livelihoods Strategies

As the land use dynamics through expansion of urban areas is horizontally growing in the study area, this study investigated that more than 27% of respondents were generating their additional income from one season contractual farmland elsewhere either inside or outside of the study area. 20.9% of the households were also engaged in houserooms renting business to generate additional income so as to develop resilient livelihoods in the presence of land use dynamics (see Table 4.17)

Table 4.17: Additional income generating activities

Types of additional income activities	# of HH	Percent
House rental income	36	20.9
Broker business	3	1.7
Farmland income elsewhere	47	27.3
Public/dry items transportation service	1	.6
Small Restaurant & Cafe	10	5.8
Bajaj Taxi services	10	5.8
Small shop	14	8.1
Fattening	5	2.9
Total	126	73.3
Not applicable	46	26.7
Total	172	100.0

Source: Household Survey, March 2016

Small restaurant & café, Bajaj taxi services and fattening businesses were used as additional sources of income for 15% of households in Table 4.17 while agricultural activities on remaining farmlands were considered as the main sources of income generating activities in their livelihoods strategies of the study area for 30.8% of households (see Table 4.16)

CHAPTER V: CONCLUSION AND RECOMMENDATION

5.1 Introduction

At present, Addis Ababa city is expanding horizontally towards its peri-urban areas at the expense of agricultural lands located surrounding the city. CSA has projected that the population growth rate of the city within the projection period (2014-2017) is estimated to be 2.4% coupled with the growing demand of urban settlements and food access. As a socio-economic dynamics, urbanization underwent different phases in Addis Ababa development process; the current rate of dynamicity is very high. On top of this fact, Akaki-Kaliti Sub city is expanding with higher rate land use dynamics affecting crop, grass, plantation and forestland aiming at establishing urban settlements and industries expansion. Koyefeche-Qilinto area(Woreda 9 of Akaki Kaliti sub city)is a place where such dynamicity is dominantly occurring through diminishing agricultural livelihoods of peri-urban settlers. This study has assessed livelihoods risks of such dynamicity in Ethiopia by taking the case of Koyefeche-Qilinto area (woreda 9) land use dynamics.

Having employing the descriptive and inferential statistical methods, the researcher collected satellite imageries data and conducted survey on 162 households whose farming land had been expropriated and/or dislocated from their residences. The key informants, frequent field observations and documentary resources were tools to collect data. With the application of both quantitative and qualitative analysis approaches, the following conclusions and recommendations are drawn:

5.2 Conclusions

The land use dynamic process of Koyefeche-Qilinto peri-urban settlement has detected three land use era depending on Figure 4.5. These are Agricultural era (before 1986), plantation era (1986-2000) and urbanization era (2000-2016). During Agricultural era, 59.24% of Koyefeche-Qilinto peri-urban settlement (Woreda 9 of Akaki-Kaliti Sub-City) had been used for crop farming practices (i.e mainly teff, wheat and barley with some legumes) to sustain their livelihoods. During this time, 2.9% of Koyefeche-Qilinto peri-urban settlement was covered by forest and recently, in the urbanization era, it has dramatically diminished to cover 1.5% of the area while built-up area has grown to cover 38% of the study area by 2016.The highest rate of this urban expansion coupled with rapid reduction of forestland and decline of grass & cropland has disturbed the adequacy and

sustainability of livelihoods through degrading assets such as natural forest, livestock, community participation, social integration to meet basic needs. The critical decline of forest cover in the area coupled with limited risk knowledge and operational technical skills to create another optional non-farm income generating activities could likely generate livelihoods risks through triggering environmental vulnerability and degrading productive livelihoods assets of peri-urban settlers. And this may grow as the frequency of extreme rainfall events increases with the visible global climate change. Forest provides comprehensive ecological benefits that contribute for sustainability of livelihoods at the local level. The existing status of forest cover(1.5%) has no enough potential to provide regulating local surface and air temperature, filtering pollution from the local atmosphere which may positively impact the health of peri-urban settlers, trapping rainwater during heavy storms which prevents pollution of local waterways, and storing and sequestrating atmospheric carbondioxide. Besides, it can be easily understand from household survey result of this study that there is narrow knowledge at the local level in relation to the ecological management and benefits of forest. With the existing trends of land use dynamics' impact on forest coverage without appropriate intervention other than compensation in the livelihoods of peri-urban settlers is likely to trigger the occurrence of livelihoods risks through disturbing the natural working ethics of the environment and its reaction with peri-urban settlers in the study area.

A broaden perspective of livelihoods systems reveals households as dynamic institutions determined by access to income sources, assets' positions and technical skills & awareness. All influence the households' ability to meet basic needs and negotiate survival. The regression analysis disclosed that the expropriated and dislocated peri-urban settlers have not yet been adequately engaged in non-farm income generating activities rather cereal cropland and farm oxen are revealed to determine about 45% and 29% of the expropriated and/or dislocated households' income variation respectively in the peri-urban settlements.

Generally, land use dynamics is the unrest phenomenon manifested in all parts of the World being supported by the socio-economic interests and climate change. Land use dynamics facilitated with establishment of new industries, transportation highways or urban development has a feature of involuntary displacements but caused major impositions on some population segments (Cernea, 2000).Likewise, involuntary expropriation and/or dislocation in Koyefeche-Qilinto peri-urban settlement was taken place for the same reasons to establish new industries, transportation highways

or urban development. However, land use dynamics and regression analysis of this study revealed some issues related to weak attention to forest protection, inadequate involvement of affected peri-urban settlers in urbanization process, degraded livelihoods assets and insufficient non-farm livelihoods promotion in the study area. In the comprehensive view of sustainable livelihoods development, failing to resolve the investigated constraints have inevitable potential to trigger vulnerability contexts causing livelihoods risks at the local level.

5.3. Recommendations

As per the land use dynamics analysis, Koyefeche-Qilinto peri-urban area is indispensably found in the context of transition with a dynamic feature of natural, physical, financial, human and social assets for urban and rural livelihoods strategies. As a result, its ecosystems are increasingly at risk of forest degradation and loss of livelihoods assets. As a socio-economic development, urbanization should be a program that each stakeholder equally wins. But this study had investigated that there was no"win-win", but "win-loss" impacts among stakeholders in the study area. The expropriated peri-urban farming settlers constitute the loser's group whose livelihoods had been adversely affected. Based on these gaps identified and the impacts assessed by this study, the following recommendations have been forwarded:

- Early warning for disaster risk reduction as a legitimate matter of public policy at the highest national levels should be strengthened to protect national resource base and productive assets to ensure sustainable livelihoods. By this study, forest, as a national and local resource base, was found almost at risk due to insufficient early assessment of community vulnerability situations and protection of natural resources prior to decision making for urban expansion. Hence, risk knowledge at community level should be promoted in addition to compensation to effectively cope-up the likely occurrence of livelihoods risks and to absorb urban opportunities for ensuring sustainable livelihoods through employing win-win strategies. Compensation alone is not good enough to protect natural resource base and rehabilitate disrupted livelihoods as a result of land use dynamics for urban expansion. Hence, community based environmental rehabilitation program aiming at strengthening the resilience of ecosystem and reducing environmental vulnerability should be also organized at community level.

- As it was examined in the analysis, many of the farming households were illiterate and had reservations to detach their livelihoods from agricultural activities fearing the complexity and expensiveness of urban livelihoods. Thus, capacity building trainings should be given for all affected farming peri-urban settlers to enable them easily transforms into urban livelihoods systems and generate non-farm income.

- Among adaptive and coping livelihoods strategies, agricultural activities using residual fragmented and contractual farmlands inside and/or outside of the woreda have still a lion share in subsistence mode of life in Koyefeche-Qilinto peri-urban livelihoods affecting the productivity and production of farmlands through monotonous agricultural activities and rapid urbanization. Hence, the future intervention planning needs to reverse this vulnerability context through strengthening institutional capability and community operational ability prior to expropriation of farmland and/or dislocation of households.

- Furthermore, urban friendly agriculture should be promoted using open spaces focusing on high market value crop, fattening, milk production and poultry businesses after technical skills are provided for expropriated and dislocated peri-urban settlers ahead of compensation to be effected. This may be helpful not only to develop adaptive urban livelihoods strategies & build resilient household but also to shape abusive characteristics of community towards forest protection and non-natural resources.

- Based on the guiding principle of Sendai framework for Disaster Risk Reduction and prescriptions of other International, National and Scholars, the Woreda administration should execute non-discriminatory participation for risk reduction in the decision making process of expropriation and/or dislocation for urbanization starting from its inception to implementation. Because, peri-urban farming communities are the primary settlers that could affect the existing natural local resource base for prolonging their survival in narrowed livelihoods options. Thus, urban expansion program should involve them in any cases as far as the decision affects their livelihoods.

- Even though proclamation No. 455/2005 declares to claim compensation for expropriated land, peri-urban farming settlers had not been satisfied with the kind and amount of compensation implemented in the study area. Nevertheless, if the money compensation is only a resolution, then it should be effected after the provision of entrepreneurship skill trainings and other capacity building services to the expropriated and dislocated settlers (Mandere, Ness, & Anderberg, 2010) as to how to make & manage non-farm businesses in the upcoming and emerging urban livelihoods.

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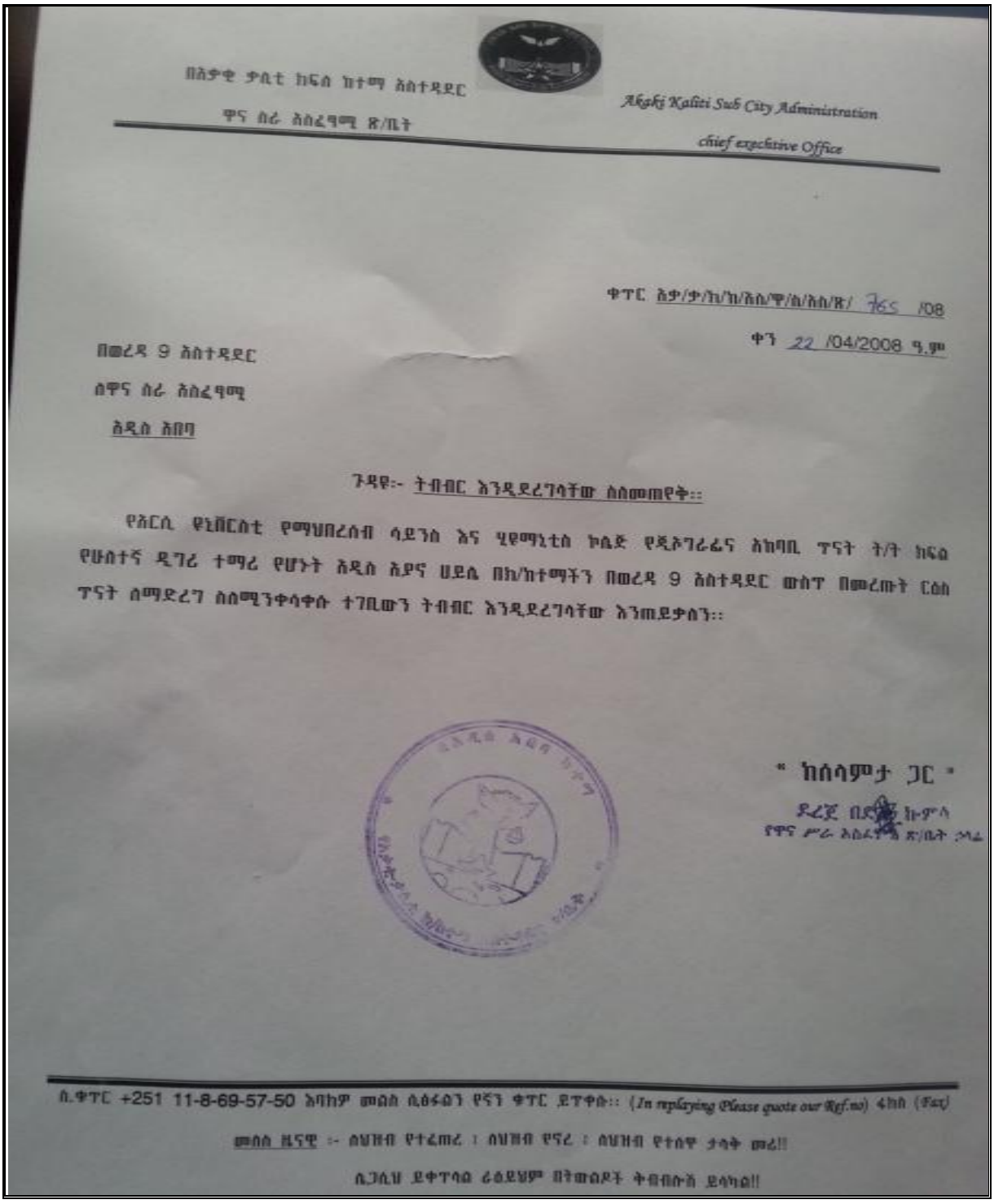
Appendix 1: Entry Letter for Field Data Collection

Appendix 1.1: Letter of Cooperation from Akaki-Kaliti Sub-city



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Akaki Kaliti Sub City Administration
chief exechtive Office

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የሕርሲ ዩኒቨርስቲ የማህበረሰብ ሳይንስ እና ሂዩማኒቲስ ኮሌጅ የጂኦግራፊና አከባቢ ጥናት ት/ት ክፍል የሁለተኛ ዲግሪ ተማሪ የሆኑት አዲስ አይና ሀይሌ በክ/ከተማችን በመረዳ 9 አስተዳደር ውስጥ በመረጡት ርዕስ ጥናት ስማድረግ ስለሚንቀሳቀሱ ተገቢውን ትብብር እንዲደረግላቸው እንጠይቃለን::

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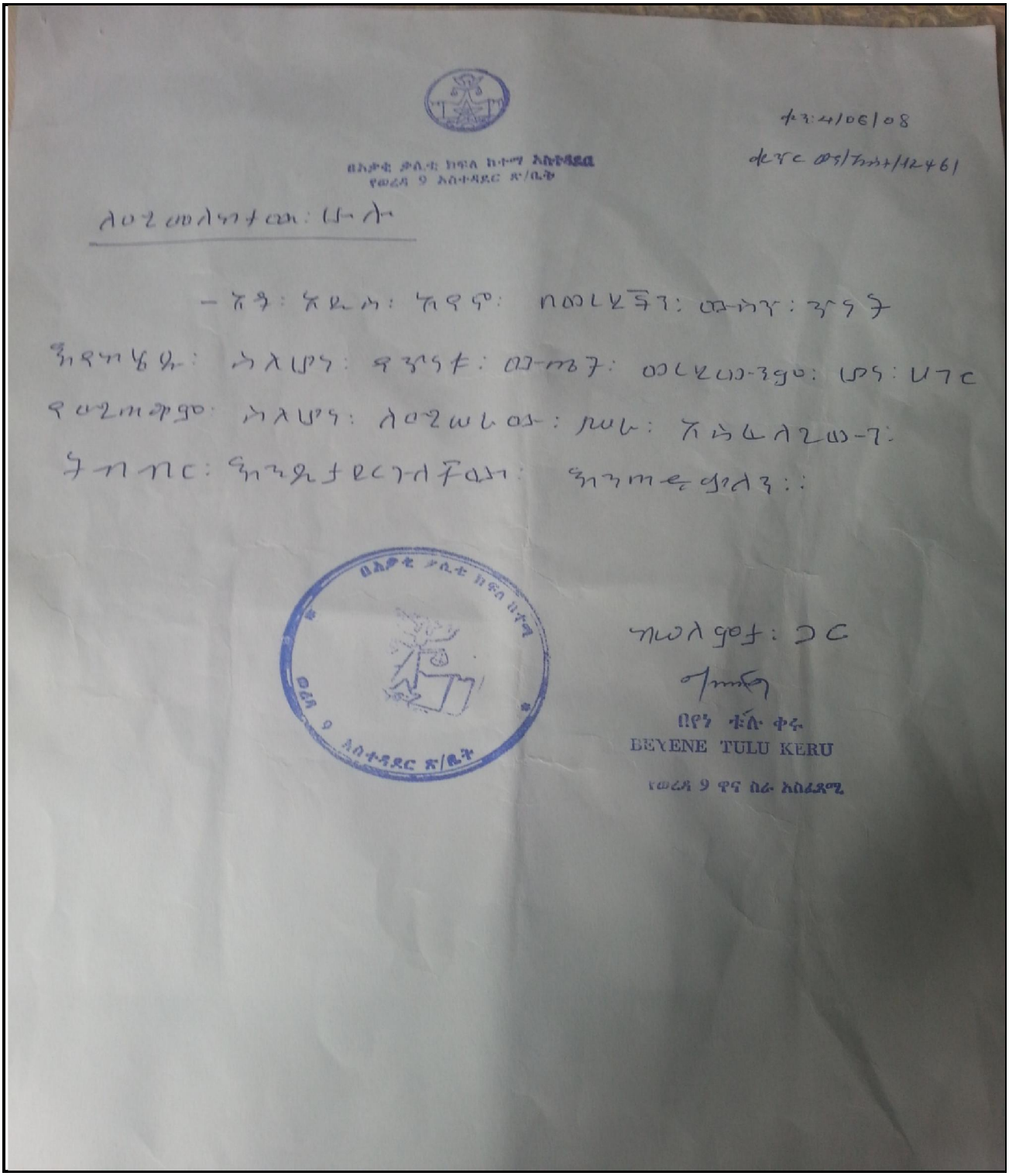
Appendix 1.2: Letter of Cooperation from Woreda 9 of Akaki-Kaliti Sub City

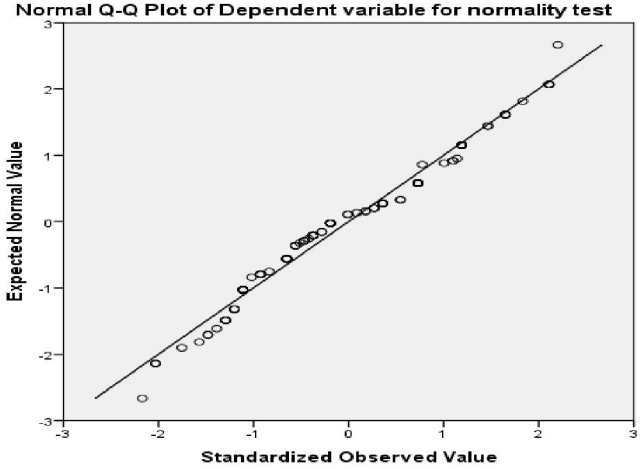


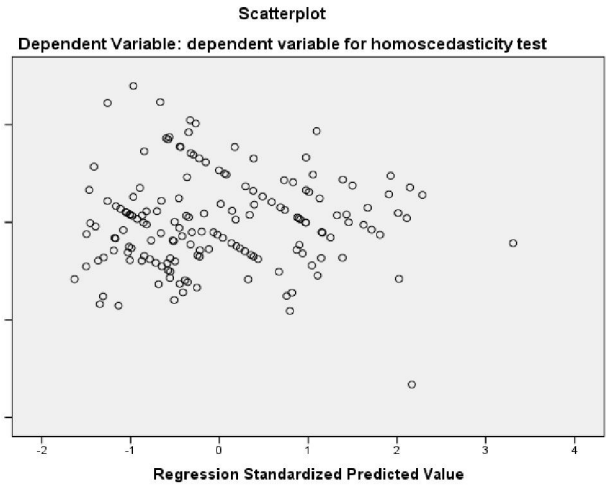
Appendix 2: Tests of Normality

Dependant Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Annual household income	.131	162	.000	.969	162	.001

Source: Household Survey, March 2016

From Appendix 1, Asymp.Sig. Values (*P)* <0.05 was observed to indicate that the dependent variable (annual household income) is not significantly different to a normal distribution.





Appendix 3: Plots of normality and homoscedasticity

(Source: Household Survey, March 2016)

Appendix 4: Questionnaire for Sample households

Informed Consent and Cover Page

Good morning/afternoon. My name is Addis Ayano. I am MA student at Arsi University for specialization in Environmental Disaster Risk Management. Currently, I am doing a research to assess and investigate livelihoods risks of land use dynamics with major emphasis to Koyefeche-kilinto settlement sites. Your household has been selected randomly from all settlers in the Village. The study will help the government to evaluate the effect of land use dynamics upon your livelihoods at the current resettlement sites. Your responses are useful and will be held in utmost confidentiality and will be used only for the analysis of this research. You will never be identified by name in any case. If you accept to participate in this research, you will be doing so voluntarily and there will not be any monetary returns. You are also free to refuse to respond to any questions you do not feel comfortable or to withdraw from the research all together. This questionnaire will take about half an hour of your time to respond to the questions.

Respondent agreed to be interviewed 1. YES

2. NO

Thank you in advance for your cooperation!

I. Background of the respondents

1. Sub-city_____

2. Ketena_____

3. Age of household head (in Year) _____

4. Sex of household head Male ☐ Female ☐

5. Level of education of the household head

A. Illiterate ☐ D. Completed high school ☐

B. Primary (1-6) ☐ E. Completed undergraduate ☐

C. Secondary (7-8) ☐ F. Completed postgraduate ☐

G. Read and write ☐

6. Household size

A. Male ☐ B. Female ☐ C. Both ☐

7. Number of dependants in a household (in number) _____

II. Land Use Dynamics

Did you have farmland before urban settlement program? Yes ☐ No ☐

If "yes" for" # 1" above, what purpose did/do you use it for?

Land use	Before 2010		Now(2016)	
	Please make √ (tick)	Size (please indicate unit of measurement)	Please make √ (tick)	Size (please indicate unit of measurement)
Crop land				
Pastureland				
Forest land				
Irrigation land				
Others(Specify)				

III. Determining the Underlying Factors for Livelihoods Risks

1. How long did you live in the former residence? A. More than 10 years ☐

B. less than 10 years ☐

2. If your response to # 1 is "A", how do you think about the trends of forest coverage?

A. Decreasing ☐ B. Increasing ☐ C. No Change ☐

3. If "decreasing", what is/are the major reason/s for reduction of forest cover?

A. firewood/charcoal sales ☐ B. expansion of cropland ☐ C. Urban expansion ☐

D. Other (specify)_____

4. What benefit packages had you been promised as compensation when you're asked to leave the farmland to urban use?(multiple answer possible)

A. Money compensation ☐ B. housing plots ☐ C. Job opportunities ☐

D. Income generating Skill training, E. Property transportation fee ☐

F. Money compensation & housing plot, G. Money compensation & job opportunity,

H. Other specify_____

5. Which of the benefit packages did you actually get at last (Multiple responses Possible)?

A. Money compensation ☐ B. housing plots ☐ C. Job opportunities ☐

D. Income generating Skill training ☐ E. Property transportation fee ☐

F. Money compensation & housing plot ☐ G. Money compensation & job opportunity ☐

H. Other specify_____

6. What was your reaction towards the kind and amount of compensation (benefits) you received about? A. Satisfied ☐ B. Indifferent ☐ C. Dissatisfied ☐

7. Did you get any training on how to use the benefit packages provided to you while you move to urban livelihoods ? A. Yes ☐ B. No ☐

8. If "Yes "in which of the following training did you participate?

	Yes	No
A. private business development, management and supervision	☐	☐
B. Financial management saving	☐	☐
C. Basic entrepreneurship	☐	☐
D. Technical training for livelihood means	☐	☐

9. Did you get any advisory support from any institutions after displacement or/and dispossession? A. Yes ☐ B. No ☐

IV. Determining Vulnerability Contexts

1. Were you aware of the urban settlements program that displaces you from your former vicinity?

A. Yes ☐ B. No ☐

2. If "Yes", how?(Multiple response possible)

A. Public orientation ☐ B. Official training ☐ C. Informal discussion ☐

D. Urbanization trends of vicinity areas ☐ E. Increased arrival of new settlers ☐

F. Other specify_____

3. If you had awareness of urban settlements that affect your livelihoods, what preparation did you make ahead? A. Money saving ☐ B. Small trade ☐ C. ther (specify)_____

4. What was your reaction when you are asked to move from your former possession?

A. Agreed without objection ☐ B. Objected but left force fully ☐

C. Objected but convinced through bargaining ☐

5. Did you participate in group during decision making process in the implementation of expropriation program? A. Yes ☐ B. No ☐

6. If "Yes", what were the benefits you obtained because of participation?

A. Raised own interest ☐ B. Expressed own opinion no ☐

C. Created access to benefit packages ☐ D. Created opportunity to livelihood means ☐

E. Nothing ☐ F. Other specify_____

7. Did you have representatives in decision making on benefit packages allotments?

A.Yes ☐ B. No ☐

8. If "Yes" how did that represent?

A. Through community institution ☐ B. Through elected community ☐

C. Through individual interested group ☐ D. through Kebele administration ☐

E. other specify_____

9. Do you have access to water, schools, health institutions, saving & credit institutions, and main roads? A. Yes ☐ B. No ☐

10. What are the major causes for your livelihoods problems in your current situations?

A. Lack of farmland ☐ B. Lack of income generating skill ☐

C. Unemployment ☐ D. other (specify) _____

V. Impacts of Land Use Dynamics on livelihoods

1.How much of average annual household income did you earn commonly before 2010?

_____ETB.

2. What do you say about the size of your average annual household income now in 2015/16?

_____ ETB?

3. How was your social relationship and value within your community before 2010 ?

A. Very high ☐ B. High ☐ C. Moderate ☐ D. Low ☐ E. Very low ☐

4. What is your social relationship and value now(2015/16)?

A. Very high ☐ B. High ☐ C. Moderate ☐ D. Low ☐ E. Very low ☐

5. What was the total asset possession of the household before and after expropriation /displacement/ dispossession?

Household Possession	**Before(2010)**	**Now(2015/16)**
Oxen(#)		
Fatten Oxen(#)		
Cow(#)		
Equine (#)		
Goats(#)		
Sheep(#)		
Chicken(#)		
Bee colony(#)		
Land(in ha)		
House(in room umber)		
Forest(permanent tree)plants(in ETB estimation)		
Others specify and in ETB estimates_____		

6.Do you agree that urban expansion into your area is advantageous to your family members?

A. Strongly agree ☐ B. Agree ☐ C. Disagree ☐ D. Strongly disagree ☐

7. Explain for any of your choice for question no"6" above?

_____

8. Do you have young children in the family? A.Yes ☐ B. No ☐

9. What was their reaction to the adverse impact of land use dynamics?

A. Migration ☐ B. Drop out school & engage in non-farm business ☐

C. Daily labor in town ☐ D. Other(specify)_____

VI. Coping/Adaptive/ Strategies

1. Were you engaged in any of productive income generating activities just right after the dispossession/ displacement of your land? A. Yes ☐ B. No ☐
2. If "Yes" is your choice for question #"1"above, in which of the following activity did you engage? A. Agricultural ☐ B. Non-agricultural ☐
3. If your response for question number "2" above is "B", in which of these you engaged yourself? A. Raising own business ☐ B. serving in some one's house ☐

   C. Migration to far areas of urban ☐ D. Migration to far areas of rural ☐

   E. Daily labor in the city ☐ F. Begging ☐ G. Firewood sales ☐

   H. Others specify _____
4. Do you believe that you get jobs or works easily these days than before? A. Yes ☐ B. No ☐
5. If "No" is your response for question #4 above, why? _____
6. Do you have a job (work) now? A. Yes ☐ B. No ☐
7. If "Yes" what type of job (work) it is? A. Self employer ☐ B. Daily labor ☐

   C. employed in government organization ☐ D. employed in private business ☐

   E. Other, Specify _____
8. Do you have any other source of income today? A. Yes ☐ B. No ☐
9. If "Yes", which of these? A. Rental income ☐ B. Remittances ☐

   C. Farmland income from elsewhere ☐ D. Supplementary small and micro enterprises ☐

   E. Other, specify_____
10. What did your family decide to do as an individual or group after land expropriation (dispossession)? A. Raised common business ☐ B. Disintegrated

    B. Followed each of their livelihoods strategies ☐ D. Other, specify _____
11. Do you believe that the way they turned on become favorable to them to secure their livelihoods? A.Yes ☐ B. No ☐
12. What do you think about the major problems you and your family faced while coping up with (to) urban livelihoods strategies?

    A. Lack of knowledge in financial utilization ☐ B. Discrimination by the other settlers ☐

    C. lack of follow-up from the concerned institutions ☐ D. Lack of skill for job opportunity ☐

E. Others, specify_____

13. Who is, as to you, a responsive body to improve the current status of your livelihoods?

A. Government ☐ B. NGOs ☐ C. Private Investors ☐

D. Private settlers ☐ E. All ☐

14. What do you think as better to be done to improve your livelihoods status?

_____

_____

የቤተሰብ ዳሰሳ ጥናት መጠይቅ

የተጠያቂ ቤተሰብ ሀላፊ ፈቃደኝነት ማረጋገጫ

ጤና ይስጥልኝ! ስሜ አዲስ አያኖ ይባላል፡፡በአርሲ ዩኒቨርሲቲ በአካባቢ ሳይንስ ዘርፍ የሁለተኛ ድግሪ ተማሪ ነኝ፡፡ በአሁኑ ወቅት የናንተ መኖሪያ አካባቢ በመሬት አጠቃቀም ለውጥና ጉዳቶቹ ላይ ጥናት ለማካሄድ ተመርጧል፡፡ ስለሆነም አርስዎ ለዚህ ጥናት ከአካባቢው ነዋሪዎች መካከል በዕድል ተመርጠዋል፡፡ ጥናቱም የመሬት አጠቃቀም ለውጥ በዕርስዎ የአኗኗር ሁኔተ ላይ ያመጣውን ተፅዕኖ መንግስት መገንዘብ ዕንዲችል የሚረዳ ነው፡፡

ስለዚህ ለዕያንዳንዱ ጥያቄ የርስዎ ምላሽ በጣም ጠቃሚ ሲሆን የሰጡት መረጃ በጣም ሚስጥራዊ(ለማንም ተላልፎ የማይሰጥ) ሆኖ የጥናቱን ውጤት ትክክለኛውን ዕውነተ ለማግኘት ብቻ ነው የምንጠቀምበት፡፡

ለተወሰኑ ደቂቃዎች ጊዜዎን ሊሰጡን ፈቃደኛ ነዎትን?

የተጠያቂው ስምምነት ይረጋገጥ! ተስማምቻለሁ ☐

አልተስማማሁም ☐

ለትብብሮዎ በቅድሚያ አመሰግናልሁ!

I. የመሠረተዊ መረጃ

1. ክፍለ ከተማ----------

2. ቀጠና----------

3. የአባ ወራ ዕድሜ(በዓመት ይፃፍ)----------

4. የቤተሰብ አስተዳዳሪ ፆተ ወንድ ☐ ሴት ☐

5. የየቤተሰብ አስተዳዳሪ የትምህርት ደረጃ

ሀ. ምንም ትምህርት አልተማሩም ☐ መ. መለስተኛ ደረጃ(7-8) ያጠናቀቀ ☐

ለ. ማንበብና መፃፍ ☐ ሠ. ሁለተኛ ደረጃ(9-12) ያጠናቀቀ ☐

ሐ. የመጀመሪያ ደረጃ(1-6) ያጠናቀቀ ☐ ረ. ኮሌጅ/ዩኒቨርሲቲ ዲፕሎማ/ድግሪ☐

6. የቤተሰብ ብዛት፡- ወንድ-------- ሴት----------

7. የጥገኛ ቤተሰብ አባላት ብዛት(በቁጥር)----------

II. የመሬት አጠቃቀም ለውጥ

1. **ከከተማ መስፋፋት ፕሮግራም በፊት የዕርሻ መሬት ነበሮት? ሀ. አዎ☐ ለ. የለኝም ☐**
2. **መልሰዎ «አዎ» ከሆነ፤ ለምን አላማ ነበር የሚጠቀሙት? አሁንስ?**

የመሬት አጠቃቀም	2002		2008	
	ምልክት(√) ያስቀምጡ	መጠን(መለኪያ)	ምልክት(√) ያስቀምጡ	መጠን(መለኪያ)
ለአዝርዕት				
የግጦሽ				
ለደን				
ለመስኖ				
ለሌላ ካለ በተሰጠው ቦተ ያስቀምጡ				

III. የወደፊት የቤተሰብ የኑሮ አደጋ ዋንኛ ምክንያቶችን መለየት

1. **የበፊቱ የመኖሪያ አካባቢዎ ላይ ለምን ያህል ጊዜ ኖረዋል?**
   ሀ.ከ10 ዓመት በላይ ☐ ለ. ከ10 ዓመት በተች☐

2. **ለጥያቄ ቁጥር 1 መልስዎ«ሀ» ከሆነ፤ ከጊዜ ወደ ጊዜ ስለሚተየው የደን ይዘት ሁኔተ ምን ይላሉ?**
   ሀ. ቀንሷል ☐ ለ. ጨምሯል ☐ ሐ. ለውጥ አላሳየም ☐

3. **ለጥያቄ ቁጥር 2 መልስዎ «ቀንሷል» ከሆነ ምክንያቱ ምንድን ነበር?**
   ሀ. የማገዶ አንጨት/ከሰል ንግድ ምሰፋፋት☐ ለ.የአዝርዕት መሬት መስፋፋት☐ ሐ. ሌላ-----

4. የዕርሻ መሬቶዎን ለከተማ መስፋፋት አንዲለቁ ሲጠየቁ በምትኩ ቃል የተገባሎት ጥቅማጥቅም ምን ነበር?(ከአንድ በላይ መልስ መስጠት ይቻላል)
ሀ. የገንዘብ ካሳ☐ ለ. የመኖሪያ ቤት ቦተ☐ ሐ. የስራ ዕድል☐ መ.የክህሎት ስልጠና☐

ሠ. ሌላ(ጥቀስ)_____

5.ቃል ከተገባሎት ጥቅማጥቅም መካከል የተቀበሉት የትኛውን ነው?(ከአንድ በላይ መልስ ይቻላል)

ሀ.የገንዘብ ካሳ ☐ ለ.የመኖሪያ ቤት ቦተ☐ ሐ. የስራ ዕድል☐ መ. የክህሎት ስልጠና ☐

ሠ. ሌላ ካለ ይጥቀሱ ----------

6. ስለተቀበሉት የጥቅማጥቅም(ካሣ) አይነትና መጠን ምን ተሰማዎት?

ሀ. ዕርካተ☐ ለ.ምንም አልተሰማኝም ☐ ሐ. አልረካሁም☐

7. በኑሮዎ ላይ ሊደርስ የሚችለውን አደጋ ለመቀነስ/ለመከላከል/የተቀበሉትን ጥቅማጥቅም በአግባቡ መጠቀም የሚያስችሎትን የክህሎት ስልጠና ወስደው ነበር? ሀ. ወስጃለሁ ☐ ለ. አልወሰድኩም ☐

8. መልስዎ «ወስጃለሁ» ከሆነ ምን ምን ስልጠና ላይ ተሳትፈዋል?	አዎ	አይደለም
ሀ. የግል ቢዝነስ አመሰራረት፤አስተዳደርና ቁጥጥር ዘዴ	☐	☐
ለ. የገንዘብ አስተዳደርና ቁጠባ	☐	☐
ሐ. መሰረተዊ ቢዝነስ ዘዴ	☐	☐
መ. የኑሮ ዘዴ ክህሎት ስልጠና	☐	☐

9. የበፊት መኖሪያዎንና ይዞተዎን ከለቀቁ በኋላ የምክር ድጋፍ አግኝተው ያውቃሉ?

ሀ. አዎ ☐ ለ.አይደለም ☐

IV. ለአደጋ ተጋላጭ የመሆን አውዶችን መለየት

1. ቀድመው የአርስዎንና የቤተሰብዎን ይዞተ የሚነካ የከተማ ማስፋፋት ፕሮግራም አንደሚኖር ግንዛቤ ነበርዎት? ሀ.አዎ ☐ ለ.አይደለም ☐

2. መልስዎ«አዎ» ከሆነ፤አንዴት ነው ግንዛቤውን ያገኙት?(ከአንድ በላይ መልስ ይቻላል)

ሀ.ሕዝባዊ የግንዛቤ ፕሮግራም ☐ ለ.በተሰጠኝ ስልጠና ☐ ሐ. ሌላ ካለ ይጥቀሱ ----------

3. ይዞተዎን አነደሚነካ ቀድመው ግንዛቤ ከነበሮት ምን ዝግጅት አደረጉ?

ሀ. ገንዘብ መቆጠብ ጀመርኩ ☐ ለ. ንግድ ጀመርኩ ☐ ሐ. ሌላ ካለ ይጥቀሱ ----------

4. ቀድሞ ከሚኖሩበት ቦተ ወይም ከያዙት ዕርሻ መሬት አንዲለቁ ሲጠየቁ የዕርስዎ ምላሽ ምን ይመስል ነበር? ሀ. ያለምንም ተቃውሞ ተስማምቼ ለቀኩኝ☐ ለ. ተቃውሜ ነበር ግን ተገድጀ ለቀኩ ☐

ሐ. ተቃውሜ ነበር በጠቃሚነቱ ላይ አምኜ ለቅቄያለሁ ☐

5. ይዞተዎን ለከተማ መስፋፋት የመልቀቅ የውሳኔ ሂደት ላይ ከሌሎች መሰል የአካባቢ ሰዎች ጋር ሆነው ተሳትፈው ነበር? ሀ. አዎ ☐ ለ. አይደለም ☐

9. መልስዎ «አዎ» ከሆነ የውሳኔ ሀሣብ ላይ በመሳተፍዎ ምን ጥቅም አገኙ?

ሀ. ውስጥ ፍላጉቴን ለማሳወቅ ችያለሁ ☐ ለ. በመቃወም ሀሣቤን መሳወቅ ችያለሁ ☐

ሐ.ጥቅማጥቅም ማገኝበትን ሁኔተ አመቻችቻለሁ ☐

መ. የአኗኗር ዘዴን ለመፍጠር ተጠቅሜበተለሁ ☐ ሠ. ምንም አልተጠቀምኩም ☐ ረ.ሌላ------

7. የጥቅማጥቅም መደባ ውሳኔ ላይ ርስዎን የሚወክል ተሳተፊ ነበርዎት? ሀ. አዎ ☐ ለ.አይደለም ☐

8. መልስዎ«አዎ» ከሆነ በምን አይነት መልክ ነው ውክልናው የተከናወነው

ሀ.በህበረተሰብ ተቋም ☐ ለ.በተመረጠ ማህበረሰብ ☐ ሐ.ፈቃደኛ በሆኑ ግለሰቦች ☐

መ. በቀበሌ አስተዳደር ☐ ሠ. ሌላ ካለ ይጠቀስ----------

9. አሁን የሚኖሩበት አካባቢ ለውሀ፤ ለትምህርት ቤት፤ለጤና ጠቋም፤ለብድርና ቁጠባ ተቋም

አንዲሁም ለዋና መንገዶች ምቹ ዕድል ፈጥሮሎተል? ሀ.አዎ ☐ ለ. አይደለም ☐

10. አሁን ባሉበት የኑሮ ሂደት ውስጥ ላለቦት የኑሮ ችግር ከፍተኛ ምክንያቶች ናቸው የሚሉት

ምን ምን ናቸው? ሀ.የዕርሻ መሬት ዕጦት ☐ ለ.የገቢ ማመንጫ ዕውቀት ዕጦት ☐

ሐ. ስራ አጥነት ☐ መ. ሌላ ካለ ይጥቀሱ ----------

V. የመሬት አጠቃቀም ለውጥ ተፅዕኖ

1. የበፊት ይዞተዎን ከመልቀቅዎ በፊት ለቤተሰብዎ በዓመት በአማካኝ ምን ያህል ገቢ ያገኙ ነበር?--------

2. በአሁኑ ወቅትስ ምን ያህል ገቢ ለቤተሰብዎ ያገኛሉ? ----------

3. የቀድሞ ይዞተዎን/የመኖሪያዎን ቦ ዎን/ ከመልቀቅዎ በፊት ማህበራዊ ተሳትፎዎና በማህበረሰብ ውስጥ ስላሎት ዋጋ ምን ይላሉ?

ሀ. በጣም ከፍተኛ ☐ ለ. ከፍተኛ ☐ ሐ. መካከለኛ ☐ መ.ዝቅተኛ ☐ ሠ. በጣም ዝቅተኛ ☐

4. አሁን ባሉበት ሁኔ ስ ማህበራዊ ግንኙነትዎና ተሳትፎዎ ምን ይመስላል?

ሀ. በጣም ከፍተኛ ☐ ለ. ከፍተኛ ☐ ሐ. መካከለኛ ☐ መ.ዝቅተኛ ☐ ሠ. በጣም ዝቅተኛ ☐

5. በቀድሞና በአሁኑ የኑሮ ሁኔተ ሲነፃፀር የቤተሰብዎ የሀብት ይዞተ ምን ይመስላል?

የቤተሰብ ሀብትአይነት	በፊት(2002)	አሁን(2008)	መግለጫ
ሀ.በሬዎች(በቁጥር)			
ለ.የደለበ በሬ(በቁጥር)			
ሐ. ላም(በቁጥር)			
መ.ያጋማ ከብት(በቁጥር)			
ሠ.ፍየል(በቁጥር)			
ረ. በግ(በቁጥር)			
ሰ. ዶሮ(በቁጥር)			
ሸ.የንብ ቀፎ			
ቀ.መሬት(በሄክተር)			
በ.ቤት (በክፍሎቹ ብዛት)			
ተ.ደን(በብር)			
ቸ.ሌላ ካለ ይጥቀሱ_____			

6. የከተማ መስፋፋት ለዕርሶና ለቤተሰብዎ ይጠቅማል?

ሀ. በጣም ዕስማማለሁ ☐ ለ. ዕስማማለሁ ☐ ሐ. አልስማማም ☐ መ. በጣም አልስማማም ☐

7. በጥያቄ 6 ላይ ለመረጧቸው የትኛውም ምርጫ ማስረጃ ሊሰጡ ይችላሉ?----------

8. በወጣትነት ዕድሜ ላይ የደረሱ ልጆች አሎት? ሀ. አዎ ☐ ለ.የለኝም ☐

9. መልስዎ «አዎ» ከሆነ በመሬት መለዋወጥ ምክንያት የኑሮ ተፅዕኖ ለመቋቋም ምን ዕርምጃ ወሰዱ?

ሀ. ሥደት ለ ትምህርት አቁሞ የንግድ ስራ መጀመር ሐ.የጉልበት ሠራተኛ መሆን መ.ሌላ ካለ----

VI. አደጋን መቋቋሚያ ዘዴዎች

1. የቀድሞ መኖሪያዎን/የዕርሻ መሬቶን/ ከለቀቁ በኋላ ወድያውኑ የገቢ ማመንጫ ስራ ውስጥ ገብተው ነበር? ሀ. አዎ ☐ ለ. አይደለም ☐

2. መልስዎ «አዎ» ከሆነ በየትኛው የገቢ ማስገኛ ዘርፍ ላይ ነው የተንቀሳቀሱት?

ሀ.ግብርና ☐ ለ. ከግብርና ውጪ ☐

3. ለጥያቄ 2 መልስዎ«ለ» ከሆነ ከሚከተሉት በየትኛው ገቢ ማስገኛ ስራ ላይ የተንቀሳቀሱት?

ሀ. የግል ንግድ☐ ለ. ሰው-ጋ ብር መቆጠብ☐ ሐ. ወደ ከተማ መሰደድ ☐

መ. ወደ ገጠር መሰደድ☐ ሠ. የቀን ሠራተኛ መሆን☐ ረ. የልመና ዘርፍ ☐

ሰ.ማገዶና ዕነጨት መሸጥ ☐

4. ከቀድሞ ይልቅ በአሁኑ ጊዜ ስራ በቀላሉ ማግኘት ይቻላል ብለው ያምናሉ?

ሀ.አዎ ☐ ለ. አይደለም☐

5. መልስዎ«አይደለም» ለምን?----------

6. አሁን ባሉበት ስፍራ የገቢ ምንጭ ስራ አሎዎት? ሀ. አዎ ☐ ለ. አይደለም ☐

7. መልስዎ ለቁጥር6 «አዎ» ከሆነ፤ምን ዓይነት ስራ ነው የሚሰሩት? ሀ.ግል ስራ☐ ለ. የቀን ስራ ☐

ሐ.የመንግሰት መ/ቤት ውስጥ ☐መ.የግል መ/ቤት ውስጥ ☐ሠ. ሌላ ካለ ጥቀስ----------

8. ተጨማሪ የገቢ ምንጭ አሎት? ሀ. አዎ☐ ለ. የለኝም☐

9. መልስዎ«አዎ» ከሆነ፤ ከሚከተሉት የትኛው ተጨማሪ የገቢ ምንጭ አርገው ይጠቀማሉ?

ሀ. የኪራይ ገቢ☐ ለ. ከባንክና መሰል ተቋም በሚገኝ ክፍያ☐ ሐ.ሌላ ቦተ የምሰራው የግብርና ስራ☐

መ. ጥቃቅንና አነስተኛ ንግድ☐ ሠ. ሌላ ካለ ይጥቀሰ----------

10. ከነበሩበት ዕርሻ መሬት/መኖሪያ ቦተ/አንዲለቁ ሲጠየቁ ቤተሰብዎ በግልና በጋራ ምን ውሳኔ ወሰኑ?

ሀ.የጋራ ንግድ መጀመር☐ ለ.ተባተትኖ መኖር☐ ሐ. አያንዳንዱ የራሱን ኑሮ መኖር ☐

መ. ሌላ ካለ ይጥቀሱ ----------

11.የመረጡት አካሄድ ለኑሮዋቸው ምቹና አስተማማኝ ዋስትና አለው ብለው ያምናሉ?

ሀ. አዎ ☐ ለ.አይደለም ☐

12. የከተማን ኑሮ ለመልመብደና ለመቋቋም አርሶና ቤተሰብዎ የገጠማችሁ ዋንኛ ችግር አለ ብለው ያስባሉ?

ሀ. የገንዘብ አጠቃቀም ችግር ☐ ለ. በሌሎች ነዋሪዎች የሚደርስ አድሎ☐

ሐ. የሚከተተለን ተቋም አጦት ☐ መ. ሌላ ካለ ይትቀሱ ----------

13. አሁን ያሉበት የኑሮ ሁኔተ አንዲሻሻል የረዳዎት ማን ነው? ሀ. መንግስት ☐ ለ. የዕርዳተ ድርጅት☐

ሐ. ባለሀብት ግለሰብ☐ መ.ነዋሪ ግለሰብ ☐ ሠ. ሁሉም☐

14. ኑሮዎ አንዲሻሻል ምን ቢደረግ ጥሩ ነው ብለው ያስባሉ?----------

Appendix 5: An Interview Checklist to Stakeholders

Part I: Background of Respondent (Akaki Kaliti S/City Urban Development)

1. Address _____

   Sub city _____

   *Woreda*_____

2. Level of education_____
3. Your position in the *Woreda*_____
4. Year of services in the *Woreda*_____

Part II: Risk Mitigation Strategies

1. When did you start to urbanize koyefeche-Qilinto?
2. What risk factors do you consider before your office decides to expropriate farmlands & residence plots for public interest?
3. What did your office perform so far to mitigate the likely risks of farmland expropriation?
4. Would you tell me the rate of compensation your office has performed so far? In what rounds?
5. Which components of household's properties are legally qualified to be compensated?
6. What criteria does your office employ to grant compensations?

Part I: Background of Respondent (Woreda Chief Executive Office)

1. Address _____

   Sub city _____

   *Woreda*_____

2. Lever of education_____

3. Your position in the *Woreda*_____

4. Year of services in the *Woreda*_____

Part II: Questionnaire about Land Use Dynamics

5. What approaches did you employ to create awareness for those who were supposed to be dislocated and/or dispossessed due to expansion of Addis Ababa City?
6. How did the dislocated and/or expropriated settlers participate in urbanization process?
7. What is your future plan to create resilient community in the woreda?
8. What mechanisms do you employ to minimize the adverse impacts of land use dynamics on the dislocated and dispossessed farmers in the woreda?
9. What programs have been undertaken to sustain the livelihoods of youth group of the dislocated and/or dispossessed households?
10. Which assets/capitals of communities have been more affected due to land use dynamics?
11. According to your understanding, what risks likely to occur due to the reduction of community assets/capitals?
12. What trainings were given for expropriated households to smoothly engage in non-farm livelihoods activities?

Part I: Background of Respondent (Woreda Urban Agriculture Office)

1. Address _____

   Sub city _____

   *Woreda*_____

2. Level of education_____

3. Your position in the *Woreda*_____

4. Year of services in the *Woreda*_____

Part II: Questionnaire about Land Use Dynamics & its Impacts

5. What types of crop are potentially growing in the woreda?

6. What did you think about the trend of crop productivity before urban settlements?

7. If "decreasing", what was the cause for reduction of production?

8. What do you say about the adverse impact of land use dynamics on agricultural livelihoods?

9. Did you observe any vulnerability contexts in the livelihoods of expropriated and/or dispossessed peri-urban settlers due to land use dynamics(Urban expansion)?

10. What are those vulnerability contexts? If your response to # 9 is "Yes".

11. What are the underlying factors causing livelihoods risks in life of peri-urban settlers?

12. Do you think that land use dynamics are advantageous for peri-urban settlers?

13. If your response is "yes", what are those advantages of urbanization for peri-urban settlers?

14. Which community assets/capitals have been diminishing due to land use dynamics in your woreda?

Part I: Background of Respondent (Youth individual)

1. Address _____

   Sub city _____

   *Woreda*_____

2. Lever of education_____

3. Your position in the *Woreda*_____

4. Year of services in the *Woreda*_____

Part II: Questionnaire about Land Use Dynamics & its Impact

5. What do you think about the benefits of urban expansion in your locality?
6. Are there any adverse impacts of land use dynamics unique to those young groups like you in your locality? If yes, what are they?
7. What are the adaptive strategies that you and your friends employed to cope up livelihoods risks due to land use dynamics ?
8. What are the main factors affecting your livelihoods to be vulnerable in face of land use dynamics?
9. What are the roles expected to be played by youth groups to prevent/mitigate livelihoods risks?

Part I: Background of Respondent (Elders)

1. Address _____

   Sub city _____

   *Woreda*_____

2. Lever of education_____
3. Your position in the *Woreda* _____
4. Number of years you live in the *woreda* _____

Part II: Questionnaire about Land Use Dynamics & its Impacts

5. Can you share your observation and experience about the trend of forestland and plantation in your locality?
6. What do you understand about livelihoods condition of those expropriated and dislocated households in the woreda?
7. Do you believe that urban expansion is advantageous for you? If so, what are those advantages?
8. Did you participate in the decision making process of land expropriation and dislocation process for urbanization?
9. Do you remember any species of trees which had been common in the area but now endanger due to land use change?
10. Who is more vulnerable to the adverse impact of land use dynamics in your locality?
11. What do you recommend to improve the livelihoods of peri-urban settlers in the face of land use dynamics?
12. What are the common coping/adaptive/ strategies that most of affected community employs to mitigate the adverse impacts of livelihoods risks?
13. Would you please describe in depth about the social relationship you had before expropriation & dislocation as compared to your current situation?