An Investigation into Sustainable Household Transition from Extreme Poverty

By

BRIAN KISWII DAVID

14212707

Thesis submitted in fulfilment of the requirements for the degree of Doctor of Business Administration at the Gordon Institute of Business Science, University of Pretoria

SUPERVISOR

Professor Margaret Chitiga-Mabugu

11 February 2020

ABSTRACT

The study examined the process by which households transition from extreme poverty. Globally, about 1.3 billion people live in extreme poverty, half of them in Sub-Saharan Africa. In the fight against poverty, several African countries have steadily increased spending on safety net programmes that cushion the poor from the harsh effects of poverty and deprivation. However, unless such programmes confront the processes that generate poverty, they will continue to undermine sustainable development. Very few studies have examined the adaptive capacities responsible for people's movement out of poverty – what this study refers to as "sustained graduation from extreme poverty." It is therefore imperative to investigate relative household adaptive capacities as antecedents to sustained graduation from extreme poverty, in particular, for those in geographical contexts characterised by poverty and inequality. Two sets of disconnected yet very useful literature to this study exist: first, is work on climate change and variability that offer guidance on the nature, level and mix of capacities households require to mitigate the effects of natural shocks, and second, is literature on poverty guiding on the dynamics of poverty, including its measurement and escape pathways. This study sought to bridge the two sets of literature. The study explored the processes through which people escape from extreme poverty by examining the needed capacities for that. The study identified a population, in Kenya, categorized as extremely poor, targeted by a government safety net programme and which often experiences climate-related shocks. Observing that communities best understand their adaptive capacity factors and poverty escape processes, I employed a mixed-methods approach (quantitative and qualitative inquiry) for this study. Four variables of poverty (social, economic, human capital and institutional resources) were quantified among 375 randomly selected households. Purposively selected community representatives participated in community-based inquiries that sought to: locally define, categorize and map their experiences on the pathways out of poverty. Key informant interviews were conducted with both state and non-state actors either implementing or providing oversight to poverty reduction and resilience building interventions in the study area. The research data demonstrated that: i) for households to escape poverty sustainably, they need to build three forms of capacity namely: absorptive, adaptive and transformative; ii), that aspiration (the "calling" to escape poverty) influences relative household adaptive capacities, and consequently its poverty escape. The study results indicate that human capital, including education and skills acquisition, of household members and the eventual engagement with the labour market played a critical role in poverty escape for the study population. At the theoretical level, these findings reveal the importance of aspirations (calling to exit poverty) as a key component in the fight against poverty. The results of this study provide evidence for the design of public policies that facilitate households' transition out of poverty, reduction of recurrent expenditures on social transfers while informing the basis for targeting policy interventions in rural areas.

DECLARATION

I declare that this thesis is my own work. It is submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination at any other university.

I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Name: Brian Kiswii David

Student Number: **14212707**

Date: 31 January 2020

ACKNOWLEDGEMENT

First, I thank my supervisor Professor Margaret Chitiga-Mabugu, for her continuous support in the Ph.D. programme. Margaret was always there to listen and to give advice. The supervisor – student chemistry was of the right mix. Margaret introduced me to the Poverty and Economic Policy (PEP) Research Network from which I engaged with experts on community-based poverty measurement. Margaret was very instrumental in the weighting of both the indices and sub-indices used in this study after we realized that existing literature gave equal weights to each variable.

A special thanks goes to my co-supervisor, Professor Helena Barnard. Helena was responsible for helping me complete the writing of this dissertation as well as the challenging research that lies behind it. Helena has been a friend and mentor. She taught me how to write academic papers, made me a better scholar, had confidence in me when I doubted myself and brought out the good ideas in me. Without her constant encouragement, guidance, and pushing, I would not have finished this dissertation. She was always there to meet and talk about my ideas, ask me good questions to help me think through the whole Ph.D. journey.

My deep gratitude goes to the Research Quality Committee for their positive criticisms of my work. I took all the comments positively. It is from your friendly fires that I am where I am with this journey today. Thank you Professor Johan, Professor Albert, and Professor Helena. I appreciate the whole Doctoral Team: Vivienne, Lerushka, Mamello for unending logistical support. You all made sure I was on campus in time, left on time, and that I had spent the time on campus effectively. I owe you. Besides the Doctoral Team, I would like to thank the rest of my thesis technical advisors: Professor Kerrin Myres, Hugh Myres, Gwen Ansell, and Professor Danie for insightful comments and reviewing of my work.

My whole Ph.D. journey was fully financed by IDRC. IDRC's commitment to building research capacity in Africa is commendable. I am indebted to ensure that my scholarship contributes towards the broad IDRC agenda on Research that drives Global Change.

Last, but not least, I thank my family: my late parents, for giving me life, educating me, and unconditionally supporting my interests. You left too early but I am sure you have been keeping watch. Jane, Ryan and, Ian – you are my heroes – your patience for an absentee husband and father has at long last borne fruit. Let us celebrate.

TABLE OF CONTENTS

Abstract ii

Declaration iii

Acknowledgement 4

Table of contents 5

List of annexures 9

List of tables 10

List of figures 12

CHAPTER 1: INTRODUCTION AND BACKGROUND 13

1.1 Background to the research 13
1.2 Problem statement 15
1.3 Purpose statement 15
1.4 Contribution of the study 16
1.4.1 Theoretical contribution 16
1.4.2 Practical contribution 18
1.5 Definitions of key terminology 19
1.6 Thesis structure 21

CHAPTER 2: POVERTY AND VULNERABILITY LITERATURE 22

2.1 Introduction 22
2.2 Absolute and relative poverty 24
2.3 Poverty measurements 24
2.4 Poverty, vulnerability and adaptive capacity 28
2.4.1 Measuring vulnerability 28
2.4.2 Adaptive capacity 29
2.4.3 Adaptive capacity determinants 30
2.4.4 Adaptive capacity and sustained transition from extreme poverty 32
2.5 Theoretical literature 33
2.6 Poverty escape, transition or graduation 34
2.9.1 The controversy 34
2.9.2 Poverty escape graduation models 35
2.10 Uncovering the factors for poverty escape 38
2.11.1 Social capital: affiliations and potential 38
2.11.2 Economic capital: sources and obligations 41
2.11.3 Institutional capital: critical basic services plus access 44
2.11.4 Human capital: skillsets, employability and confidence 46
2.11.5 Aspirations (calling) to escape extreme poverty 48
2.12 Conceptual framework 50
2.13.1 Social capital 50
2.13.2 Economic capital 51

2.13.3 Human capital....53
2.13.4 Institutional capital....54
2.13.5 Aspirations (calling) to escape poverty....54
2.13.6 Relative household adaptive capacity....55
2.13.7 Conclusion....55
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY....57
3.1 Introduction....57
3.2 Sampling procedure....57
3.3 Research setting....58
3.4 Research philosophy....59
3.5 Research approach....60
3.6 Research choice....60
3.7 Research strategy....60
3.8 Quantitative research methods....63
3.8.1 Sample Size....63
3.8.2 Data Collection Methods....63
3.8.3 Questionnaire Back-translation....64
3.8.4 Household Survey Data....64
3.9 Qualitative data....65
3.9.1 Community based inquiries....65
3.9.2 Key informant interviews (KII)....65
3.10 Pilot testing....65
3.11 Data analysis and presentation....66
3.11.1 Adaptive capacity determinants....67
3.11.2 Exploratory factor analysis....67
3.11.3 Paired Sample T-Test....68
3.11.4 Aspirations: index quantification....69
3.11.5 Relative household adaptive capacity....69
3.11.6 InTer-Carder poverty transition....72
3.11.7 Quality assurance and ethics....73
3.12 CONClusion....74
chapter 4: DATA AND SAMPLE CHARACTERISTICS....75
4.1 Introduction....75
4.2 Sample Realization....75
4.3 demographic Profile of respondents....75
4.4 Validity and reliability test....79
4.5 Household conditions....80
4.6 Household food security status....84
4.7 Qualitative data on household conditions....85
4.7 Conclusion....86
CHAPTER 5: RESULTS, CONCLUSIONS AND RECOMMENDATIONS....87
5.1 Introduction....87

5.2 Economic capital: sources and obligations 87
5.2.1 Diverse income sources 87
5.2.2 Access to credit 91
5.2.3 Household loan usage practices 96
5.2.4 Borrowing and use decisions 98
5.2.5 Cash savings: usage and linkages to financial institutions 98
5.2.6 Household asset dynamics over the past year 100
5.2.7 Three-year household income trends 102
5.2.8 Food expenditure to total income ratio 103
5.2.9 Access to market information 104
5.2.10 Rural development agencies as sources of information 105
5.2.11 Government officials as sources of information 107
5.2.12 Household debt to income ratio 108
5.2.13 Respondents' bankability (index) 109
5.3 Human capital: skill sets, confidence and aspirations 111
5.3.1 Education of household head 111
5.3.2 Highest education of a household member 112
5.3.3 Household dependency ratio 113
5.3.4 Ability to recover from economic and climatic shocks 114
5.3.5 Recovery strategies employed 115
5.3.6 Impediments to recovery 116
5.3.7 Training in business development 116
5.4 Institutional capital: critical basic services plus access 117
5.4.1 Distance to nearest market, school, main road or health centre 118
5.4.2 Access to safe water 118
5.5 Social Capital: affiliations and potentials 121
5.5.1 Household head is a member of a social group or network 121
5.5.2 Diversity of household social networks 122
5.5.3 Richness of contacts 123
5.5.4 Composition of social networks 124
5.6 Aspirations: the 'calling' to escape poverty 127
5.6.1 Aspirations estimation using principal component analysis 127
5.6.2 Descriptive results for aspirations 129
5.6.3 Qualitative data on aspirations to escape poverty 133
5.7 Predictors of capacity 134
5.8 Household relative capacity 139
5.8.1 Capacity construct analysis 140
5.8.2 Absorptive capacity 141
5.8.3 Qualitative data on absorptive capacity 142
5.8.4 Adaptive capacity 142
5.8.5 Qualitative data on adaptive capacity 143
5.8.6 Transformative Capacity 145
5.8.7 Qualitative data on transformative capacity 145
5.9 Inter-carder poverty transition model 146

5.10 Main lessons pertaining to hypothesis testing 154

Chapter 6: CONCLUSION AND RECOMMENDATIONS 156

6.1 Introduction 156
6.2 Overview of the study 156
6.3 Conclusions and recommendations 157
6.4 Limitations of the research 161
6.5 Recommendations for future research 162
6.5.1 Theory 162
6.5.2 Practice 162
6.5.3 Methodology 163
6.6 concluding remarks 163

REFERENCES 165

LIST OF ANNEXURES

ANNEXURES 1 FINAL QUESTIONNAIRE USED IN THE STUDY 178
ANNEXURES 2 FOCUS GROUP DISCUSSION GUIDE 200

LIST OF TABLES

Table 1 List of Definitions 19
Table 2 Index and sub-indices for relative household adaptive capacity 71
Table 3 Profile of respondents 78
Table 4 Household health status 79
Table 5 Validity and reliability test 80
Table 6 Household conditions 83
Table 7 Household food security 84
Table 8 Household income sources 89
Table 9 Livestock health services access 90
Table 10 Livestock (herd) size dynamics 91
Table 11Access to credit 92
Table 12 Sources of credit 92
Table 13Household debt levels 94
Table 14 Household debt age 95
Table 15 Loan usage 97
Table 16 Borrowing and Use Correlation 98
Table 17 Cash Saving – Access and Usage 99
Table 18 Financial Services Access 100
Table 19: Assets Paired Sample T-Test 101
Table 20Asset Ownership by HSNP Status 102
Table 21 Income trends over the past 3 years 103
Table 22 Radio and Mobile Phone Ownership 105
Table 23 Information Access from Rural Development Agencies 106
Table 24Information Accessed From Government Officials 108
Table 25 Wilcoxon Signed Rank Test on Household Income and Debt 110
Table 26 Education level of household head 112
Table 27 Highest education of a household member 113
Table 28 Household dependency ratio 114
Table 29 Perceived ability to recover 114
Table 30 Self-Reported Asset Recovery 115
Table 31 Business skills training 117
Table 32 Distance to nearest market, school, main road, and health centre 118
Table 33 Access to Safe Water 120
Table 34 Household membership in social networks 122
Table 35 Diversity of Household Social Networks 123
Table 36 Richness of contact 124
Table 37 Composition of households' social networks 126
Table 38 Aspirations "Calling" to Escape Poverty 128
Table 39 Descriptive Results for Aspirations 131
Table 40 Descriptive Results for Aspirations 132
Table 41 Predictors of Capacity 135
Table 42 Coefficients 138

Table 43 Construct analysis (Principal Component Analysis) 141
Table 44 Absorptive capacity 142
Table 45 Adaptive capacity 143
Table 46 Transformative capacity 145
Table 47 Carder 1 Threshold 148
Table 48Carder 2 Threshold 150
Table 49 Carder 3 Threshold 152
Table 50 Carder 4 Threshold 154

LIST OF FIGURES

Figure 1 Determinants of adaptive capacity. 31
Figure 2 Schematic diagram of the conceptual framework 50
Figure 3 Respondents Debt Index.....109
Figure 4 Wilcoxon Signed Rank Test on Income vs Debt in USD.....110
Figure 5 Recovery strategies employed at household level.....115
Figure 6 Aspirations and confidence to escape poverty 129

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 BACKGROUND TO THE RESEARCH

Poverty and inequality are critical challenges limiting the ability of developing (and especially the least developed) countries to achieve sustainable development. To deal with these challenges, some countries have developed policies and interventions for enhancing household adaptive capacity, (Opiyo, Wasonga, & Nyangito, 2014). Existing literature shows that the risks associated with how people secure their well-being can be reduced through government policies and interventions that target the challenges of poverty and inequality through improving households' adapative capacities (O'Brien, Eriksen, Schjolden, & Nygaard, 2004).

The concept of adaptive capacity is still in an early stage of development. According to Petrov et al.,(2017), the theoretical basis of adaptive capacity remain limited, hence, there is little consensus on its characteristics and determinants across sectors and disciplines. Phi (2011) posits that adaptive capacity has multiple determinants. However, what these determinants are, and why and how combinations of them contribute to a system's overall adaptive capacity, remain unanswered questions.

Adaptive capacity as a concept is discussed in resilience literature, organization theory, and sociology (Elrick-Barr, et al.,2014; Engle, 2011). However, most adaptive capacity studies focus primarily on climate change and its effects on the ecosystem and adaptation. These studies either exclude human actions or treat them as external to the system, with only limited attempts to understand the role of adaptive capacity in enhancing sustainable escape from extreme poverty (Günther & Harttgen, 2006). There is, therefore, an imbalance in availability between the literature on adaptive capacity focusing on climate change and that focusing on human actions.

Despite its continued presence in the sustainability and global change literature, and its nature as a unique property that human beings can shape and manipulate, adaptive capacity is yet to be assessed or receive significant

attention (Jones, Ludi,& Levine, 2010). Engle (2011) argue that while studies often consider adaptive capacity (for example, Nelson et al., 2007; Pahl-Wostl, 2009), few aim specifically to evaluate it across vulnerability and resilience frameworks, and even fewer seek to improve the assessment approaches for understanding the dynamics of adaptive capacity. In practical terms, conventional asset- and capital-based approaches to adaptive capacity assessment are useful for determining the resources essential for adaptation. However, current assessment approaches tend to focus on the resource and assets aspects of adaptive capacity, rather than on the dynamics of this system property (Phi, 2011).

Existing literature (United Nations, 2016; Yohe & Tol, 2002) indicates that future shocks, especially climate-related shocks, will influence livelihoods and development trajectories over the coming decades. Therefore, reducing vulnerability to such shocks through adaptation measures is increasingly seen, together with poverty reduction, as a prerequisite for sustainable development (Yohe & Tol, 2002). Interventions by the government have the potential to enhance poor people's adaptive capacity (Thulstrup, 2015), which in turn can mitigate both poverty and vulnerability to future shocks and stresses, further supporting sustainable development (Cornell, 2003; Smit & Wandel, 2006). Bearing this theoretical background in mind, this thesis sought to provide an examination of the characteristics and determinants of relative household adaptive capacity through the study of a single East African area, Turkana County – a pastoral community in Northwestern Kenya – characterised by non or unsustained graduation from extreme poverty. With a population of about 855,399, recorded in the 2009 population census (Kenya National Bureau of Statistics, 2013), Turkana County has been described as the poorest county (with a poverty level of 87.5 percent) in Kenya, although it is also the most equal county, with a Gini coefficient of 0.283 (Kenya National Bureau of Statistics & Society for International Development, 2013). The underlying causes of poverty in this county include a harsh environment, poor infrastructure, and low access to basic services (Household Economy Approach, 2012). For example, 82.1 percent of the population in Turkana County have no education, and the number of residents with secondary education or higher is 15.4 times more in Kenya's

capital city, Nairobi, (50.8 percent) than in Turkana County, where only 3.3 percent of the population has secondary education (Kenya National Bureau of Statistics & Society for International Development, 2013).

The concept of aspirations is used to reflect individuals' assessments of their own chances of changing the poverty level at which they live. An individual's view of their own chance of getting ahead has been argued to correlate with the efforts an individual, household or community makes. Appadurai (2013) has argued that aspirations are central to the path out of poverty.

1.2 PROBLEM STATEMENT

Globally, about 1.3 billion people live in extreme poverty, half of them in Sub-Saharan Africa (World Bank, 2018). In the fight against poverty, several African countries have steadily increased spending on safety net programmes, that cushion the poor from the harsh effects of poverty and deprivation (Slater & McCord, 2010). However, unless such programmes confront the processes that generate poverty, they will continue to undermine sustainable development (Slater & McCord, 2010). According to Dudwick et al.,(2009), very few studies have examined adaptive capacities responsible for how people move and stay out of poverty, that is, sustained graduation from extreme poverty. It is imperative to investigate relative household adaptive capacities as antecedents to sustained graduation from extreme poverty particularly in a geographical context, characterised by poverty and inequality.

This study, therefore, took a process orientation, examining the process by which households in Turkana County transition from extreme poverty by investigating how relative household adaptive capacity influenced such a sustained transition. It sought to build a theoretical base that could explain the characteristics and determinants of relative household adaptive capacity in this context.

1.3 PURPOSE STATEMENT

The context of this study was a rural setting in Kenya. The study sought to investigate the determinants of household adaptive capacity and how

households sustain movement out of extreme poverty in the country. Two specific questions, were asked, namely:

a. What factors contribute towards relative household adaptive capacity to trigger transition from extreme poverty? and,
b. Does the aspiration (calling) to transition from poverty influence a household's relative adaptive capacity to transition from extreme poverty?

1.4 CONTRIBUTION OF THE STUDY

As noted above, the multifaceted nature of adaptive capacity is insufficiently reflected in current framings and assessments in the literature. Extant literature indicates a lack of clarity on whether the determinants of adaptive capacity are underpinning factors, or are variables reflecting relative levels of the property. Consequently, the determinants and indicators of adaptive capacity are sometimes conflated. This unsettled knowledge base leads to difficulties both in understanding the nature of the concept itself and in designing approaches to its assessment. This shortfall requires efforts to identify and investigate the processes and mechanisms that underpin and frame relative household adaptive capacity for a sustained transition from extreme poverty.

1.4.1 THEORETICAL CONTRIBUTION

There exists literature on adaptive capacity and aspiration concerning a wide range of issues such as climate change, evolution of culture, religion, and gender issues. However, there is limited research on how individuals in poor households or societies can adapt to their situations.

The ability of human beings to observe, understand and respond to changes in the environment around them is an important factor in facilitating poor individual's movement out of their condition. Some of the reasons why the poor do not have the necessary skills on how to adapt to their environment and adopt better systems are lack of knowledge and inability to acquire vital resources. Ignorance can be eliminated through the establishment of institutions of research dedicated to solving problems pertaining to the poor and research

information disseminated in a manner that ensures all affected populations are well informed. Further, participatory mapping can be used as a strategy for raising awareness of climate change problems and identifying solutions to this crisis (Renaud, Sudmeier-Rieux, Estrella & Nehren, 2016).

Dalton, Ghosal, and Mani (2015) posit that low adaptability in poor households is partly due to the lack of aspiration in members, especially those at the helm of the household. This means that these individuals remain poor for their entire lives and think that they cannot change their condition. As such, a child born in a poor family does not have the desire to change the status of the family. Obstacles to adaptability may be intrinsic, to the person, as well as extrinsic. Intrinsic obstacles include the absence of will power while extrinsic constraints may consist of a lack of sufficient resources, weak institutions, or family systems.

Adaptive capacity of people in relation to climate change has been widely discussed by various scholars and in these works, there are mentions of poverty and how individuals can improve their adaptive capacities in regard to this problem. This notwithstanding, there is limited research that investigates poverty as a condition that requires addressing by itself and not related to any other issue such as climate change. Moreover, no research has been conducted on the adaptive capacity of poor households in Turkana county given that development planning was not until 2010 a centralized function in Kenya.

The knowledge gaps in and constraints of extant literature discussed above led this study to seek to advance the typology of adaptive capacity determinants and variables; explain the phenomenon as experienced at the household level; and contribute towards framing and characterising relative household adaptive capacity as a construct. In addition, this study examined how a household's aspiration to escape poverty shapes its acquisition and accumulation of the capacities needed to sustainably transition from extreme poverty. Thus, the research extends literature on poverty adaptability for households.

1.4.2 PRACTICAL CONTRIBUTION

The study further generates context-specific knowledge that practitioners can employ in designing pro-poor policies aimed at facilitating households' transitions out of extreme poverty; influencing the effective stimulation of self-reinforcing growth among the poor by government, donors and other development agencies; and optimising existing adaptive capacity measurements to address the measurement challenges that exist at household level.

Byrne (2014) observes that most adaptive capacity studies to-date have favoured national-level assessments utilizing indicators and indices, and have therefore not addressed capacity requirements for sustainable poverty escape at the community and household levels, a gap that this study addresses. With the decentralized governance system in Kenya, where county governments are mandated with poverty reduction in their constituency, studies at community/local context analysis are a critical contribution towards better targeting and avoidance of blanket type policies.

1.5 DEFINITIONS OF KEY TERMINOLOGY

The key terminology used in this study is outlined in Table 1 below. Most key terms were selected from existing literature and are referenced accordingly.

Table 1 List of Definitions

Adaptive Capacity	Adaptive capacity is a vector of resources and assets, representing the potential of a system to adjust, modify or change its characteristics or behaviour to moderate potential damage to take advantage of opportunities or cope with the consequences of shock or stress (Adger & Vincent, 2005; Thulstrup, 2015).
Sustained graduation	The movement of households from a state of high vulnerability to shocks and stresses (and usually high levels of poverty) to one of an improved income and asset base, increased resilience to shocks and stresses, and subsequent improvement in livelihood security (Sebates-Wheeler & Deverux, 2012).
Vulnerability	The probability that a household's consumption will lie below the poverty line in the near future (Chaudhuri, Jalan & Suryahadi, 2000).
Extreme poverty	"A condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education, and information. It depends not only on income but also on access to services" (UN, 1995: 57).
Poverty	The European Commission refers to the poor as, "persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live" (EEC, 1985:24). In simple words, poverty is an outcome of the lack of resources, and deprivation. In this study, poverty is defined as the state of having insufficient command of resources over time, eventually leading to

	deprivation.
Social capital	The sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. In other terms social relationships that allow individuals access to resources possessed by their associates, and the amount and quality of those resources upon which people depend for social, economic and emotional support (Pritchett, Suryahadi, & Sumarto, 2000).

1.6 THESIS STRUCTURE

This thesis is divided into six chapters as described below:

Chapter one introduces the research problem and outlines the research gaps evident in the study of the process of poverty escape by the extremely poor. It provides the rationale for the study, the research questions and the anticipated contribution of the study.

Chapter two offers a critical review of the extant literature on household transition from extreme poverty, focusing on the concepts of poverty and vulnerability, graduation pathways, and aspirations to transition from extreme poverty.

Chapter three is a reflection on the study design providing a discussion on the research approach including data collection methods and analysis framework.

Chapter four discusses sample realisation; demographic profiles of the respondents and a qualitative poverty self-categorization by the study population.

Chapter five presents the results for predictors of poverty including findings across five variables with a cross-sectional analysis of inherent sub-indices as identified by the literature review. In the same chapter, the poverty levels of the study households are determined. The main findings of the study are also discussed in line with five variables identified via the literature review: social, human, economic, institutional, and aspiration capacities.

Chapter six concludes the study with reflections on how the findings contribute to theory and practice in enhancing household capacity for sustainable poverty escape. It also notes the limitations of the study and suggests areas for future research.

CHAPTER 2: POVERTY AND VULNERABILITY LITERATURE

2.1 INTRODUCTION

There has been marked progress in reducing poverty over the past decades. In 2010, it was announced that the world had attained the first Millennium Development Goal target – to cut the 1990 poverty rate in half by 2015 – five years ahead of schedule (UNSD, 2010). Yet despite this progress, the number of people living in extreme poverty globally remains unacceptably high. In the light of global growth forecasts, the Sustainable Development Goal (SDG) 1 of totally eradicating extreme poverty by 2030 threatens to be merely a pipe-dream (World Bank, 2016).

Poverty and vulnerability are closely entwined. Poverty contributes to vulnerability, and vulnerability (to climate change) often leads to outcomes that perpetuate poverty. The World Bank (2001), argues for increased integration of interventions that mitigate household vulnerability into a broader poverty reduction strategy. Despite this push by the World Bank, the quantitative links between risks and poverty are poorly documented (Berman & BurnSilver, 2017).

According to the most recent estimates, in 2013, 10.7 per cent of the world's population lived on less than USD 1.90 a day, compared to 12.4 per cent in 2012. In Kenya, 45.9 per cent of the total population is estimated to be living in absolute poverty, earning less than USD 1.25 a day (KDHS 2009; World Bank 2013). This is more evident in the study area of Turkana County, where 87.5 per cent of the population has been found to live in poverty, with a mean per person daily expenditure of KES 88.00: equivalent to USD 0.88 (KNBS, 2015). There is a need to consider both poverty and vulnerability to climate change as two major challenges facing human society in the 21st century (Eriksen & O'Brien, 2007).

Social science literature is replete with attempts by economists and social scientists to conceptualize the phenomenon of poverty (Waheed, 2012). Over the years, three alternative concepts of poverty, resting principally on the ideas

of subsistence, basic needs and relative deprivation (Chambers, 2006), have evolved as the basis for international and comparative work. Historically, poverty has been associated with income and this remains an important aspect of poverty today (Chambers, 2006; Pantazis, 2006). Ele-Ojo (2013) revisits the failure of purely economic approaches in accurately capturing the degree of poverty experienced, and makes an argument for poverty researchers to increasingly explore alternative, innovative approaches to the conceptualization and measurement of poverty (Ele-Ojo, 2013). Among the recent approaches would include economic well-being, capability, and social inclusion – having evolved to shape the poverty discourse.

Economic well-being (economic deprivation) is the most widely used concept of poverty. The concept focuses on quantifiable approaches to poverty definition and measurement, and primarily on the insufficiency of economic resources for human consumption. The notion of economic well-being relates to the physical quality of life (welfare), which is closely tied to the consumption of basic necessities such as food, clothing, shelter and more. Income has been a widely used proxy measure of consumption, on the assumption that it can capture both the ability to consume and actual consumption. However, difficulties arise in measuring precisely how much consumptive capacity a person has, and whether that person is actually maintaining their level of consumption. The capability concept, introduced in the 1980s, suggests that human development is a process of expanding freedom and choice, underscoring the need to view poverty as a shortfall in the fundamental capabilities of a person, and indicative of the degree of freedom needed to realize individual aspirations (Ele-Ojo, 2013).

In contrast to the individualised perspective of the capability concept, the social inclusion approach takes a relational view of the quality of life and focuses on the relationship of a person with the broader social institutions and frameworks of their context, identifying the social and relational resourcefulness needed to achieve human well-being. Proponents of the social inclusion approach assert that people may be poor despite having adequate income or means of survival if

they lack a conducive social context offering adequate protection when they need it (Ele-Ojo, 2013).

The rest of this chapter is organised as follows. The next two sections are concerned with definitional issues, both to determine the definition that will be used for this study and to establish that the phenomenon does not have a single definition. Subsequent sections deal with construct issues, to provide an understanding of the measurements adopted later in interpreting the study findings. In the final section, I then discuss the two best-known graduation models to ground this research within existing frameworks while revealing aspects amenable to extension or improvement.

2.2 ABSOLUTE AND RELATIVE POVERTY

The concept of absolute poverty is linked to destitution, and can be applied to all countries or societies. A person who is considered poor by this criterion is classified in the same way throughout the world (Stephens, 2018).

Relative poverty, by contrast, locates and measures the phenomenon of poverty in terms of the society in which individuals live, and may therefore differ between countries and over time (Davis, 2014). People are considered poor when they lack certain resources, including income, in relation to the overall resource distribution of their society (Ele-Ojo, 2013). This idea of poverty is closely linked to the notion of inequality. However, because classifying people as ‘poor’ or ‘not poor’ by this criterion depends on the degree of development of the society under study, the classification cannot be transferred to a different society (Stephens, 2018).

2.3 POVERTY MEASUREMENTS

In this section, I discuss poverty measurement with the aim of demonstrating the complexities around poverty measurement and identifying the most applicable measurements for the study area. In Chapter Five, I use the household’s current poverty status (poverty count and poverty severity) as the outcome variable in the poverty transition process.

Coudouel, Hentschel & Wodon (2002) and Olowa (2012) describe the process of poverty measurement as including three steps: first, determining the yardstick/indicator for measuring living standard/wellbeing; second, selecting the poverty line/ cut-off point (the threshold below which a given household or individual will be classified as poor); and finally, identifying the population to be used for reporting – the population as a whole, or a population subgroup. In this study, I adopted the process of poverty measurement defined by Coudouel, Hentschel & Wodon (2002) and Olowa (2012), but infused it with the community definition of poverty and the process of transition from poverty.

Although poverty has been traditionally measured in monetary terms, as noted above, it has many other dimensions. Coudouel et al., (2002) explains that poverty estimation through monetary measures can choose between using income or consumption as the indicator of well-being. The option of employing non-monetary measures also exists, because poverty is associated not only with insufficient income or consumption but also with insufficient outcomes with respect to health, nutrition, and literacy, and with deficient social relations, insecurity, low self-esteem and powerlessness (Coudouel et al., 2002). Whichever aspect is emphasised, once an aggregate income, consumption, or non-monetary measure is defined at the household or individual level, the next step is to define one or more poverty lines: the cut-off points separating the poor from the non-poor.

Monetary poverty lines may be represented by, for example, a certain level of consumption; non-monetary lines by, for example, a certain level of literacy. Employing multiple lines can help to distinguish between various types of poverty. Poverty lines are primarily set either absolutely or relatively (Maxwell, 1999), and these relate to the absolute and relative poverty definitions discussed in section 2.2 above.

Coudouel et al., (2002) & Maxwell (1999) explains poverty measurement as a statistical function that translates the comparison of the indicator of household well-being and the chosen poverty line into one aggregate number for a population or a subgroup of a population. Many alternative measures exist, but the three measures described below are the most commonly used. All these

measures can be calculated on a household basis, that is, by assessing the share of households that are below the poverty line in the case of the headcount index. However, it might be better to estimate the measures on a population basis – in terms of individuals – in order to accommodate the number of individuals within each household (Coudouel et al., 2002; Maxwell, 1999).

Incidence of poverty (Poverty rate) P_0. The incidence of poverty measures presents the proportion of the population whose income or consumption is below the poverty line: the proportion of the population that cannot afford to buy a pre-defined basket of basic goods (Coudouel et al., 2002; Maxwell, 1999). When the unit of measurement is an individual, the measure is referred to as the Poverty Headcount Index: the ratio of the number of poor people to the people comprising the total population.

Depth of poverty (poverty gap) Index, P_1: This measure provides information regarding how far households diverge below the poverty line. The depth of poverty measure captures the mean aggregate income or consumption short-fall relative to the poverty line across the whole population. The measure is arrived at by adding up all the shortfalls of the poor (assuming that the non-poor have a shortfall of zero) and dividing the total by the population. In other words, it estimates the total resources needed to bring all the poor to the level of the poverty line, divided by the number of individuals in the population. (Maxwell, 1999). It permits deriving the minimum cost for eliminating poverty transfers from the index. However, the major limitation of the P_1 index is that it does not capture differences in the severity of poverty among the poor and ignores inequality among the poor themselves (Coudouel et al., 2002).

Poverty severity (squared poverty gap) Index, P_2: This measure looks beyond the distance separating the poor from the poverty line (the poverty gap), to include the inequality among the poor. That is, a higher weight is placed on those households that are further away from the poverty line. The need for P_2 arises because of the weakness of P_1 noted above. For example, if a policy transfers cash from a household just below the poverty line to the poorest household, the Squared Poverty Gap Index would reflect this change, whereas the Poverty Gap Index would not. In Chapter Four, I calculate and use both the

poverty gap and poverty severity indices as the outcome variables for the poverty transition process.

FGT indices: Foster, Greer, and Thorbecker (1984) demonstrate the importance of breaking down large populations of people according to their geographical locations, ethnic groups and other parameters in order to correctly measure poverty. As such, each subgroup will be studied on its own. However, this strategy may not adequately provide information on how each subgroup's poverty relates to poverty in the whole group. The poverty measures in existence, they assert, are not effective because they are not additively decomposable. They cannot clearly present the poverty levels of a whole group by adding the levels of poverty in each subgroup. They, therefore, propose a new poverty measure that is additively decomposable.

The monotonicity axiom formulated by Sen demands that the poverty measure for each subgroup should increase if there is a reduction in a poor household's income. Sen also proposes a transfer axiom in which the poverty measure is increased when a poor household transfers income to households that are considered richerthan the former (Foster, Greer &Thorbecker,1984). The measure proposed by these authors ensures that when there is any change in the income of individuals within the subgroups, the same change is reflected in the whole group, and not just the affected subgroup. This change should also be of a similar nature. Objectivity and precision in measuring poverty are therefore guaranteed when this formula is used; $p_\alpha = 1/N \sum_i^p ((z - y_i)/z)^\alpha$ In this formula, *y* represents household incomes, *z* represents the poverty line, *g* stands for income shortfall, and *n* is the totality of households.

The measure proposed by Foster, Greer, and Thorbecker (1984) has been effective in measuring and categorizing poverty across world populations and have been adopted by institutions such as the world bank, some United Nations agencies, as well as various countries. Research has demonstrated the interconnectedness of poverty with inequality. Adjustments have been to this formula in order to measure phenomena such as corruption, food insecurity, conditions such as obesity, and research productivity, among others (Foster, Greer & Thorbecke, 2010).

2.4 POVERTY, VULNERABILITY AND ADAPTIVE CAPACITY

2.4.1 MEASURING VULNERABILITY

For the purpose of this study, I first sought deeper understanding of two concepts that frame adaptive capacity: poverty and vulnerability. Vulnerability may influence household behaviour and coping strategies and is thus an important consideration for policies aimed at poverty reduction (Coudouel et al., 2002).

It is difficult to measure the probability of a future lapse into poverty. Anticipated changes in income or consumption are important to individuals and households before as well as after they have occurred. It is possible, however, to analyse income and consumption dynamics and variability as proxies for vulnerability. Measures that could be used to proxy vulnerability include the duration and frequency of poverty spells; poverty transitions (movements in and out of poverty); and income variability and mobility (Coudouel et al., 2002; Suppa, 2017).

Traditional attempts to measure vulnerability have considered employing household level socio-economic panel data and analyses of poverty transitions (Albert, Elloso, & Ramos, 2007). However, notwithstanding the rich source of information on poverty dynamics panel data represent, these are hard to design and collect. A second approach to measuring vulnerability entails using repeated cross-sectional data, comprising surveys of respondents drawn from the same sampling frame, with cluster panels subsequently created (Albert, Elloso, & Ramos, 2007). Ligon and Schecter (2002) consider vulnerability as the sum of both losses due to poverty and losses due to risk exposure; they estimate vulnerability by employing monthly data from the Household Budget Survey in Bulgaria, collected over a one-year period. Other approaches to vulnerability measurement involve the use of cross-sectional data (Hadley et al., 2011).

In income studies, the concept of vulnerability is often understood to express the probability that a household will become consumption poor in the future. In this study, vulnerability is measured using proxy indicators including income

(including loans) spent on food consumption, income source diversification and the presence/absence of household member(s) with employable skills, among other indicators. The vulnerability indicators adopted by the study are grounded within the existing literature, and further contextualized into the study population. The use of loans (borrowed money) on food consumption is adopted as an indicator of both food and income poverty.

2.4.2 ADAPTIVE CAPACITY

Adaptive capacity is a crucial factor in determining a household's potential to move – and stay – out of extreme poverty. According to Mwamba (2013), adaptive capacity and adaptability are determined by the characteristics of the household or society in which it is located and can be enhanced by various strategies, including resilience-building (Mwamba, 2013). Thulstrup, (2015) also posits that adaptive capacity is context-specific, indicating a need for place-based assessment and prioritization of support.

Vincent (2007) argues that the driving forces behind adaptive capacity vary, depending on how generic and exposure-specific elements mediate the access to resources. This determines how well shocks can be handled. Brooks, Adger and Vincent, (2005), as well as Smit and Wandel, (2006), refer to these forces as the drivers or determinants of adaptive capacity, classifying them into local (for example, the presence of a strong kinship network which will absorb stress) and general socio-economic and political systems (for example, the availability of state-subsidized crop insurance).

Identifying adaptive capacity has been researched at various levels (Engle, 2011; Smit & Wandel, 2006). At the country level, Vincent (2007) identifies factors including the availability of financial resources and the institutional capacity to target those resources effectively on the most vulnerable areas and/or groups of people. At the household level, Vincent (2007) identifies the individual or household knowledge base, which supports anticipating change and identifying new or modified livelihood opportunities as well as the access to further resources required to achieve this. Byrne (2014) observes that most adaptive capacity studies to-date have favoured national-level assessments

utilizing indicators and indices, and have therefore not addressed capacity requirements for sustainable poverty escape at the community and household levels, a gap that this study has sought to address. National indicators have been argued (Vincent 2007, Mwamba 2013) not to give the true reflection of the community and household situations. To explain this further, Ahluwalia, Carter & Chenery (1979) use the example of developing countries that post impressive aggregate growth yet demonstrate only very limited penetration of the benefits to the rural poor.

2.4.3 ADAPTIVE CAPACITY DETERMINANTS

Adger & Vincent (2005) posit that adaptive capacity is reflected by those characteristics of households, societies, and regions that influence their propensity or ability to adapt. In their work, Yohe and Tol (2002) enlist eight determinants of adaptive capacity to include: technological options available for adaptation; resources availability and distribution; the formation and structure of critical institutions; human and social capital stocks; access to risk spreading mechanisms; decision-makers' ability to manage risks and information; public's perception of attribution of stress and the significance of exposure to its local manifestations. Many of these variables cannot be quantified but can be qualitatively described (Yohe & Tol, 2002). In this study, the determinants of adaptive capacity were assumed to represent the indicators of vulnerability or the risk of falling back into poverty.

Vincent (2007), in framing the Household Adaptive Capacity Index (HACI), identified five sub-indices including economic wellbeing and stability; demographic structure; interconnectivity in higher-level processes; natural resource dependence; and housing quality. Jones et al., (2010) developed the Local Adaptive Capacity Framework (LAC), which takes into account the role of those local processes and functions that can support adaptive capacity.

The work above suggests that sustainable escape from extreme poverty is essentially a transitory process. While these authors (Yohe & Tol, 2002; Vincent, 2007; Jones et al., 2010) position different capacities as the critical parts of the system, none advances any single capacity formation as having the

highest potential to assist households in sustainably escaping from extreme poverty. In this study, I ranked the sub-indices identified under each capacity factor based on their order of importance to the study population particularly for policy priority given the limited resources.

In Figure 1, Phi (2011) used meta-analysis to review and consolidate existing adaptive capacity literature into five main categories: economic capacities; knowledge and technological capacities; governance and institutional capacities; human resource capacity; and others. The figure illustrates how most literature addresses the first four categories of determinants (economic, knowledge and technology, governance and institutional, and human resource capacities) as the main aspects of adaptive capacity. Thus the literature frames adaptive capacity as a multi-faceted concept, dependent upon multiple determining factors.

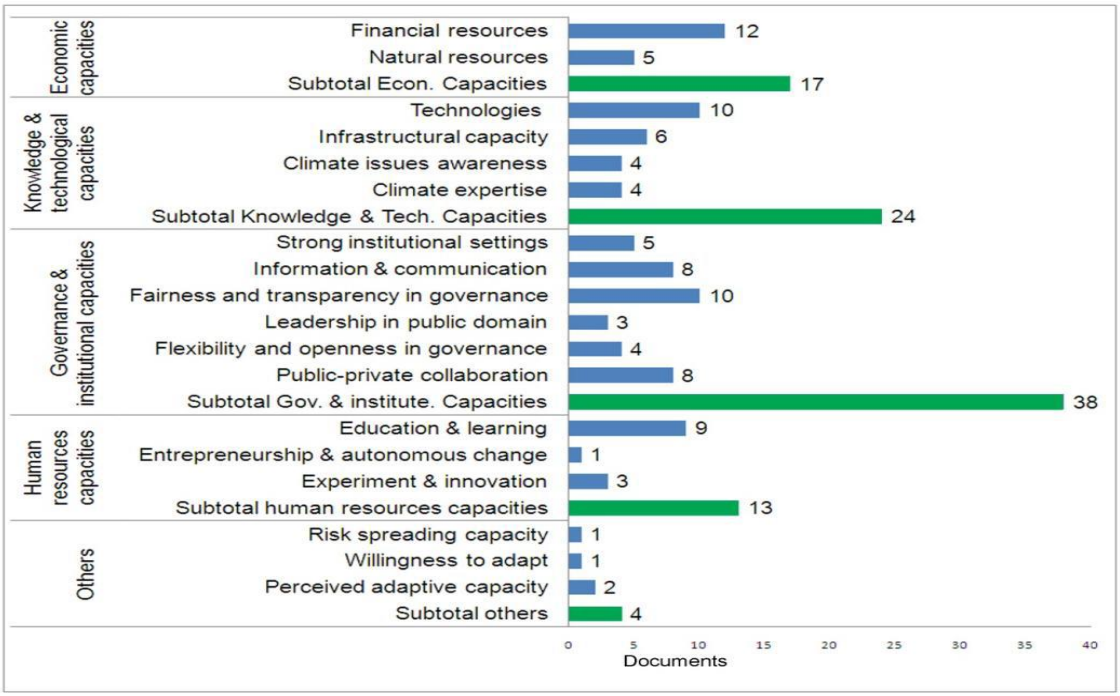

Figure 1 Determinants of adaptive capacity.

Adapted from "Assessment of the effectiveness of flood adaptation strategies for HCMC," by H. L. Phil, (2011). Natural Hazards and Earth System Sciences, 14(6), 1441-1457.

Figure 1 reveals the determinants of adaptive capacity that are well agreed upon by scholars. The blue bars represent the determinant score, while the

green bars represent the cumulative score for the category. The determinants with the highest frequencies include financial resources, access to technologies, fairness and transparency in governance, education and learning, information and communication, and perceived adaptive capacity. Three determinants – risk spreading capacity, entrepreneurship and autonomous change, and the willingness to adapt – exhibit lower frequencies, although they might play significant roles in shaping adaptive capacity**.** In this study, the willingness to adapt is assumed to be an important determinant in unpacking how households' aspiration to escape poverty influences the outcomes of their other capacities (social, human, economic and institutional).

In a bid to advance Vincent's model, Byrne (2014) identifies adaptive capacity indices at the household level as including, alternative economic activities, access to information, access to technologies, social capital, knowledge and skills, and access to infrastructure. Both Byrne's framework and Phi's (2011) are closely related. However, they have never been tested in sub-Saharan Africa and this study seeks to contextualize the indices within an East African study population.

This study acknowledges the advances made by Yohe and Tol (2002), as well as Vincent (2007) and Phi (2011), in identifying adaptive capacity determinants, indices and sub-indices. It sought to ground the formation, nature and causal impact of adaptive capacity in a context beyond climate change adaptation: the context of households sustainably escaping extreme poverty traps.

2.4.4 ADAPTIVE CAPACITY AND SUSTAINED TRANSITION FROM EXTREME POVERTY

Earlier studies (Collier, 1999; Thulstrup, 2015) have posited that a system is considered adaptive when its identity remains consistent over time. High adaptive capacity equates to a high probability of transition from extreme poverty, and hence to a reduction in vulnerability. For instance, investment in social capital (including micro-lending and insurance) and entrepreneurship culture (including small business management or income diversification) seems likely to signify the type of adaptive capacity paramount for a sustained transition from extreme poverty.

Employing a complex systems-thinking approach, this study views sustained transition from extreme poverty as resulting from the interplay between factors including social (social networks engagement), human (household entrepreneurship skills and knowledge), and institutional (the presence of necessary policy infrastructure).

2.5 THEORETICAL LITERATURE

This study builds on the complex systems theory described by Holland (1995) as stemming from organization theory and sociology. Complex system theory focuses on simulating and observing the behaviour of complex systems. Cumming (2011), suggests that this theory holds the potential to contribute to solving some of the world's most pressing problems, including a sustainable transition from poverty, the focus of this study.

Complex systems theory seeks to explain Complex Adaptive Systems (CAS) – and especially Social-Ecological Systems (SES) – and forms a promising basis for conceptualizing adaptive capacity. The category of SES permits the study of important concepts such as resilience, vulnerability, diversity and adaptive capacity in social-ecological systems (Cumming, 2011), based on an analysis of the connected nature of social development and ecosystem dynamics.

The theory depicts household adaptive capacity as the outcome of a social-ecological system, arising from the interplay between the different components of and relationships within the system: economic, social and human capital, infrastructure and institutions (Vasileiadou & Safarzynska, 2010; Cumming, 2011).

Collier (1999) posits that a SES can retain its identity if key components and relationships are maintained continuously in space and time. However, Collier (1999) also argues that the scales for measuring changes in SES are full of uncertainties. Complex adaptive SES are distinguished from other complex SES by their capacity to respond to their environment through self-organization, learning and reasoning (Norberg & Cumming, 2008). Based on these conceptualisations of the SES, this study sought to understand relative rather

than absolute adaptive capacities and explored how households (as part of a broader community system) self-organize (build adaptive capacities) towards sustaining their trajectories out of extreme poverty.

Cumming (2010) argues that the adaptive capacity of an SES is enhanced through increased diversity of capitals (economic, social, human and institutional), greater ability to learn and adapt, and better connectivity to stable systems. He further argues that slow variables are considered particularly important in SES theory, because of their role in creating regime shifts and alternative stable states. In addition to examining the capitals of SES (social, economic, human and institutional), under a different context characterized by poverty and deprivation, this study sought to understand the mediating role of aspiration – “the calling” – in the relationship between a household’s SES capitals and capacity for poverty escape.

2.6 POVERTY ESCAPE, TRANSITION OR GRADUATION

2.9.1 THE CONTROVERSY

Global commitment exists to end poverty in all its forms, everywhere, by the year 2030 (SDG, 2016). To realize zero poverty by 2030 would require that the right policies, institutions and politics are in place to ensure that the poorest people can escape from poverty. Moving out of poverty is not a short term but rather a long term process, since a household may escape poverty in the short term, but its future status as non-poor is not guaranteed (CPAN, 2015).

To achieve sustained escape from poverty, a combination of policies is needed (Stevens, 2012). One such combination would include agricultural, employment, and infrastructure measures, coupled with a strong emphasis on basic education. These kinds of policies have the capacity to enable poor people to escape from extreme poverty and to support those who have made their escape in sustaining their upward trajectories. Households that escape poverty are also subject to shocks, however, they are more resilient and better able to cope with shocks, although differently depending on a household’s relative adaptive capacity (Stevens, 2012).

CPAN (2015) argues that agriculture is a key pillar for upward mobility of the poor, particularly in sub-Saharan Africa. This is to be realized through involvement in the non-farm economy or obtaining non-agricultural employment.

Education is also crucial for escaping poverty, and educating the next generation is a key component of intergenerational poverty escapes. Educated household heads tend to drive the escape from poverty by improving access to non-farm activities and increasing earnings from all income-earning activities (CPAN, 2015).

In Chile, escaping poverty has been associated with changes in labour income beyond agriculture, both through increasing returns from an existing job and through other family members taking on work (Nelson et al. 2008). Migration by a household member can contribute both to household income diversification and often to higher earnings. Escaping poverty thus requires both increasing the assets of poor households (in the form of social, physical, economic and human capital) and increasing the returns from those assets. For the purpose of this study, I sought to understand the formation of the capacities for a household to escape poverty. Specifically, I sought to understand if these capacities are prerequisites to each other, are sequential, or build on each other.

2.9.2 POVERTY ESCAPE GRADUATION MODELS

The concept of ‘graduation’ involves households moving out of poverty into a sustainable livelihood independent of ‘handouts’ or external support. The resilience and sustainability of livelihood are critical in realizing graduation, and thus a long-term perspective is required. Graduation can only be said to have taken place when households have been able to withstand certain levels of shocks and stresses (Adato, 2007).

According to Günther and Harttgen *(*2006) households in developing countries are frequently hit by severe idiosyncratic shocks (including household-level shocks, such as death, injury or unemployment) and covariate shocks (including community shocks, such as natural disasters or epidemics), resulting in high-income volatility. The authors (Günther and Harttgen, 2006) argue that a

household's current poverty status is not the ultimate indicator of the household's vulnerability (general poverty risk). Whereas some households might be trapped in chronic poverty, others might be poor only temporarily, while yet others that are currently non-poor might still face a high risk of falling into poverty in the future.

Sabates-Wheeler and Devereux (2011) differentiate 'threshold' from 'sustained' graduation, with the former constituting passing the arbitrary threshold required to leave a programme and the latter being a sustained transition out of extreme poverty. Günther and Harttgen *(*2006) argue that established poverty measurements – for instance, Foster et al., (1984) – only assess the current poverty status of a household without taking into account dynamic consumption fluctuations caused by future shocks. Results from such static poverty analyses might, therefore, be misleading if high consumption volatility persists in a household.

The graduation models summarized below provide significant grounding for this study. In addition to informing the broader choice of variables for inclusion into the study, the models reflect the need for community-based inquiries into poverty, localizing the definition of poverty and constructing the poverty escape ladder. With none of these models developed in the study area, or in Africa more generally, this study sought to adapt the frameworks to the study area.

The BRAC Graduation Model measures change based on variables drawn from food security, stabilized and diversified income, increase in assets (including savings), and improvement in access to healthcare, increase in self-confidence and a plan for the future.

Hashemi and de Montesquiou (2011), explain the BRAC graduation model as being structured around the careful sequencing of five core building blocks, with "graduation" out of extreme poverty and into sustainable livelihoods as the end goal. The model is built on five core interventions: targeting, consumption support, savings, skills training and regular coaching, as well as an asset transfer. The model rests on defining the target population of the extreme poor,

then setting specific achievable targets for graduation, followed by setting carefully sequenced interventions to actualize the end-goal (Hashemi & Umaira, 2011).

The graduation approach draws on the most relevant aspects of social protection, livelihood development, and financial inclusion to deliver results, by combining support for immediate needs with longer-term human capital and asset investments. The objective is to protect participants in the short term while promoting sustainable livelihoods for the future. In this study, respondents were facilitated through community inquiries to define the poverty escape ladder in their local contexts.

Fonkoze's Staircase out of Poverty has been used to provide a comprehensive approach to poverty alleviation in Haiti. It is broadly based on the BRAC model but adapted to the Haitian context. It was designed as a multi-tiered, four-stepped model (staircase out poverty), with each of its four steps uniquely designed to provide participants with the resources and support needed to ascend to the next, and ultimately out of poverty. Along with the four main steps, Fonkoze's Staircase also includes "Handrails": programmes providing members and clients with business skills training, education, and health services to support them as they progress (Huda et al., 2011).

The graduation program **CLM** (for *Chemin Lavi Miyo* – Creole for pathway to a better life) is intended to help members develop livelihoods, social networks, and necessary life skills over an 18-month period. The first step involves confidence building, enterprise training, assets transfer and health services, followed by education, close monitoring and a solidarity group for those who graduate onto the second step. The third step focuses mainly on solidarity and education, and the fourth on business development through facilitating access to individual loans and assistance to move into the formal sector (Huda et al., 2011).

This study introduced the additional concept of aspirations (the calling) to escape poverty while incorporating further indices found appropriate for the study area.

2.10 UNCOVERING THE FACTORS FOR POVERTY ESCAPE

2.11.1 SOCIAL CAPITAL: AFFILIATIONS AND POTENTIAL

As mentioned earlier, social capital includes assets which are tangible and which are important to human beings in their daily engagements with each other. These assets include social interaction, goodwill, sympathy, and fellowship. Thus, social capital is characterized by shared values and connections in any given society or community which promote trust and cooperation among individuals. There are bonds which link individuals together as family members, or friends, or those who share a culture or set beliefs and practices (Svendsen & Svendsen, 2009). Social capital provides bonds which can offer support and assistance to members of the society in various ways such as economically, socially, as well as emotionally.

According to Côté et al., (2001) social capital occurs at levels including families, communities, firms, and national or sub-national administrative units, as well as other institutions. In his argument that social relations that constitute social capital are frequently broken when families shift residence, Côté et al., (2001) argued that families, communities and neighbourhoods create norms and social ties, and provide a social network beneficial to their members by generating social capital in the form of the ability to work together for a common good.

Social networks are crucial to understanding how social capital is held and mobilised, enabling people to organise collectively around common concerns (Gilchrist & Kyprianou, 2011). These networks support extensive, complex and dynamic systems of exchange, influence and interaction, and help determine how resources (incomes, assets and information) are acquired and shared.

Social networks expand an individual's asset base because such an individual can use their relationships to engage with others in sharing resources, gaining opportunities, improving their livelihood and developing entrepreneurial initiatives. Collectively, high levels of social capital are associated with broader social goods, such as lower crime rates, more effective job searches, better childcare, and better health and well-being (Gilchrist & Kyprianou, 2011).

The concept of social capital is relevant in explaining poverty – especially the persistence of poverty – because lack of bridging social capital can exacerbate the social isolation of already poor neighbourhoods, thereby obstructing escape routes out of poverty (Davis, 2014).

The indicators of social capital include the geographical scope of contacts, the number of groups to which a household member belongs, and the number of social categories a household relies on in cases of shocks – the latter being viewed as the level of diversification of social capital contacts.

Social capital is thus central to adaptive capacity and is a critical element in any strategy for adapting to shocks and stresses protecting the pathways out of poverty (Adger, 2003; Yohe & Tol, 2002). Earlier studies indicate that social capital (and closely associated constructs such as social assets) have been found extremely useful in identifying the determinants of adaptive capacity (Brooks et al., 2005, Pelling & High, 2005; Yohe & Tol, 2002).

In the context of studies on adaptive capacity and climate change, the most important component of social capital is the ability of a society to act collectively (Adger, 2003). It follows, then, that the ability to act collectively is enhanced by membership of groups that can build social capital. Based on this assumption, social capital in this research was measured using two indicators: the number of government organizations in which the household participates; and the number of household members participating in at least one community organization. These indicators have been tested robustly in studies on climate change adaptation, but only minimally in terms of how they influence a household's capacity to sustainably escape from extreme poverty (Adger, 2003).

The number of household members participating in at least one community organization, and the number of government organizations in which a household participates also reflect adaptive capacity because they indicate the range of social safety nets to which a household has access (Vincent, 2007). Further, social capital groups have the informal function of providing a 'grassroots insurance' that can be highly beneficial in the face of a climate-related shock (Vincent, 2007).

For these reasons, social capital in its diverse forms may be considered as crucial quasi-insurance (safety net), especially in the absence of formal public programmes that can cushion individuals in times of extreme hardship. As such, weak social capital implies that the households concerned are exposed to heightened threats, because – compared to other households with stronger social capital – these households may be devastated (may not easily recover) in the event of environmental/climatic changes and/or declines in natural resource availability significantly impacting their livelihoods (Mwamba, 2013).

However, contacts within the same geographical region are all likely to be equally affected by the same environmental stresses or climatic changes. They may, therefore, be of little help to a vulnerable household: both parties are dealing with the same threat. In the case of such localised environmental problems, contacts in a more distant geographical area, less affected by the threats, may be able to offer more reliable assistance such as food or money. Further, rural households networking with people or groups in urban centres located close to public and commercial services tend to have better access to critical services, as well as enjoying other advantages not accessible to households outside such networks. With this in mind, the more contacts a household has in urban and more distant geographical areas, the stronger the adaptability of such a household is likely to be (Mwamba, 2013). This study sought to capture the social categories of a household's contacts – that is, the extent of access to both bonding social capital (kin and friendship ties) and networking social capital (traditional and formal governance structures) including exploring the resource richness of the networks/contacts that sampled households had. For this study, I assumed that a household associated with a higher number of (different) social categories to rely on during shocks has better interconnectivity and hence is likely to have higher adaptability because risks are spread. This may also be described as a higher level of diversification in the household's social capital contacts. Equally important is the number of groups to which any member of a given household belongs (Inkpen & Tsang, 2005).

For this study, social capital is conceptualized as a formation of four properties: membership of household head in a social group or network, diversity of a

households social networks, the richness of a household's contacts, and composition of a household's networks. These properties are further decomposed into unique sub-constructs (bonding, linking and bridging social capital) identified by Frankenberger et al., (2014). Bonding social capital describes, as one example, households benefiting from safety net programme or any other form of community social insurance (including social grants), which support a higher capacity to absorb shocks. Linking social capital describes the level of access to information on sustainable escape from extreme poverty, including the quality of services a household receives from, say, public, private, or humanitarian agencies promoting poverty escape. Bridging social capital indicates a household's connectedness to other households or members of its household living outside the home area – for example, young household members with employable skills still require hosting by a contact in an urban area where relevant employment opportunities exist. Without this bridging, they risk being restricted to their own village and remaining unemployed.

2.11.2 ECONOMIC CAPITAL: SOURCES AND OBLIGATIONS

Economic capital refers to a measure or a determinant of risk. This determination is usually made in terms of capital that an organization or business requires to cover risks it encounters such as legal risks, credit risks, and market risks. Economic capital includes things like vehicles, equipment, machinery, and other assets owned by an entity (Klaassen & Eeghen, 2009).

Any investment decision that aims to generate income requires some injection of finance. This economic capital may consist of cash in hand, savings and/or credit, and can be acquired from either formal or informal sources. It indicates the ability of a household to save and access credit for investment in an income-generating activity and serves to facilitate both short-term and long-term investments. Economic capital is important for the poor, who often have minimal, if any, collateraliseable assets that can be used as insurance against risks and shocks (Mwanza, 2011).

According to IPC-CG, approximately four billion people living in developing countries and emerging economies have no access to financial services such

as credit, savings and insurance. This renders them unable to invest in simple market opportunities and often leaves them without recourse against eventualities that have an economic impact such as the loss of a breadwinner or a sudden health emergency (Karlan & Zinman, 2010). Formal financial intermediaries such as commercial banks do not usually target poor households or micro-enterprises for several reasons: the high cost of small transactions; the lack of basic requirements for financing; and geographical isolation (IPC-CG, 2017).

Lack of access to credit markets has been cited as a causal factor in poverty; it prevents individuals without adequate collateral from starting income-generating activities that might lead them out of poverty (Carter & Barrett, 2006). Expanding access to credit is thus a key ingredient of financial development strategies worldwide (Davis, 2014). Additionally, business investment credit can be viewed as a means of consumption smoothing for the poor; access to credit enables consumption to continue uninterrupted even during periods of a shortfall in income.

Mwanza (2011) reports that Zambian smallholder households with access to credit in the form of loans were more strongly associated with higher incomes than those without. Loans also helped households to purchase agricultural equipment, such as irrigation technologies including pumps. In short, access to credit helps poor households to accumulate both financial and physical assets (Mwanza, 2011). However, Onyeiwu and Liu (2011) hold that income generation among rural households is not only a matter of asset ownership but also about the ability to behave strategically in using those assets. The concept of management thus links economic capital with other forms of capital– for example, human capital – for optimal returns. Credit access for poor, particularly rural, households is, therefore, best accompanied by some form of training to impart basic knowledge about micro-entrepreneurship and management skills to enhance households' ability to service the credit. Without this, the adverse outcomes of mismanaged credit (such as the auctioning-off of already meagre collateral) risks pushing households further into poverty (Birkenmaier & Tyuse, 2005).

One of the most noteworthy characteristics of rural livelihoods is livelihood (occupational) diversification. Diversified income sources play a critical role in stabilising economic capital, and reduce all the components of poverty. Households with a wide variety of income sources are, unsurprisingly, less likely to be poor, or more likely to escape from poverty (Muyanga et al., 2007). Empirical evidence from various locations illustrates how rural households engage in multiple activities and rely on diversified income portfolios. In sub-Saharan Africa, a range of 30–50 per cent reliance on non-farm income sources is common (Onyeiwu & Liu, 2011; Mwamba, 2013; Mwanza, 2011). Among agricultural populations, diversification to non-farm sources of livelihood rather than sole reliance on subsistence farming enables households to augment their incomes, enhance food security, increase agricultural production by smoothing capital constraints, and better cope with environmental stresses (Gautam & Andersen, 2016). Krishna et al., (2004) report that in the villages of Western Kenya, diversifying incomes by establishing links with the urban economy has played a critical role for most households that have escaped poverty.

Increasing household income – either by entering formal employment (by upgrading skills or education and thus promoting better positioning in the job market) or as a return on prudent micro-investment decisions – positively tilts the balance of income to expenditure in favour of the household. The consequent increase in disposable income may be ploughed into profitable investments or saved to further solidify the financial capital base of the household and enhance its poverty escape (Stern, 1997). Osbahr (2007) argues that a household's income trends are an important indicator of its vulnerability to poverty. A steady upward trend in household income is correlated with positive adaptive capacity, and therefore with greater potential for poverty escape (Osbahr, 2007).

Diversifying income depends on both exogenous (external) and endogenous (internal) household capacity factors. Exogenous factors comprise the availability of economic opportunities, the effectiveness of institutions, the inclusivity of policies, and access to support functions. Endogenous factors comprise a household's aspirations and willingness to diversify, the presence of

the capital needed for diversification, access to information about existing opportunities and/or support functions, and entrepreneurial skills. Households with more diversified sources of income are likely to exhibit greater adaptive capacities than those with less diversified sources, *ceteris paribus,* and this enhances their potential and opportunities for growing household income beyond the simple ability to withstand shocks (absorptive capacity) towards the ability to recover from them (adaptive capacity).

For this study, economic capital is a formation of properties including diversity of household income sources, access to credit, loan usage and practices, cash savings, income trends over the last three years, food expenditure to total income ratio, and access to market information.

2.11.3 INSTITUTIONAL CAPITAL: CRITICAL BASIC SERVICES PLUS ACCESS

Institutions provide the framework within which human beings interact (Paul, 2009). It is widely accepted that they play an important role in determining adaptive capacity. Infrastructure is one such institutional resource critical to adaptive capacity (Willems & Baumert, 2003) and is thus a key element in poverty alleviation. Infrastructure may be defined as including basic services such as power, education, public health, transport, communications, water and electricity supply, as well as support in agricultural services such as irrigation and drainage, and more overarching institutions such as the judiciary (Marinho, Campelo, França, & Araujo, 2017). But infrastructure is only an asset in as far as it facilitates improved service provision to the poor and enables them to meet their needs (Norton & Foster, 2001).

Infrastructure improvement often catalyses development and enhances the impact of interventions to improve the poor's access to other (human, social, financial, and natural) assets. Its impact is felt both on the economic and social sectors (Pouliquen, 2000). The World Bank Group, (2015) reports that an increase in infrastructure provision leads to a reduction in inequality through increasing the access of the poor to services. It contributes significantly to sustainable livelihoods among poor people and is reflected in improved productivity and wellbeing.

Access to agricultural technologies such as irrigation helps to boost farm productivity and incomes from agriculture, as well as conferring a degree of insurance against the vagaries of weather, thus reducing income inequality, enhancing adaptive capacity and reducing poverty (Ali & Pernia, 2003). Improved access to electricity for the poor, through initiatives such as rural electrification programmes, contributes significantly to both the rural non-farm sector and the urban informal sector, which are increasingly acknowledged as significant in contributing to poverty reduction (Ali & Pernia, 2003).

Good roads and other aspects of transport infrastructure boost local trade by enhancing access to markets and reducing costs and transit losses due to product perishability. Transport facilitates access to amenities such as hospitals and other services that contribute to the overall quality of life. Good transport infrastructure also serves as an incentive and catalyst for investment (Popova, 2017; Olwande & Mathenge, 2011).

Improvements in infrastructure also enhance access to new technologies that can impact on the adaptive capacity of households or communities. Access to mobile phones through infrastructural expansion into rural areas has helped to consolidate social capital networks critical for mobilizing the resources necessary for shock mitigation, thereby enhancing household adaptive capacity (Molony, 2008; Gordon, 2007; Samuel, et al.,2005). The absence of such technologies, coupled with poor access to communication facilities such as roads, can increase the cost of participating in organizations/social networks (Katungi, Machethe, & Smale, 2007; Pouliquen, 2000). Access to safe water for both human and livestock, through programmes such as drilling boreholes or constructing dams and rainwater reservoirs can impact strongly and positively on health and health-related expenses, school attendance and time management among poor rural households (Ribeiro & Lemos Marinho, 2017). Given the gradual increase in mobile phone network in Africa, this study sought to understand the effects of infrastructural networks or communication asset ownership on access to information, and its contribution to sustainable escape from poverty.

All these aspects of infrastructure discussed above are key to integrating the remote areas which are the living areas for a majority of the poor. Not only do they enable people to move between rural and urban areas more easily, but they also support the dissemination of better information about opportunities – or their lack – in areas to which populations may be thinking of migrating.

For this study, institutional capital is conceptualized to include properties such as distances to basic services/infrastructure including markets and schools, and access to water.

2.11.4 HUMAN CAPITAL: SKILLSETS, EMPLOYABILITY AND CONFIDENCE

Human capital is multi-faceted. It is made up of the amount and quality of labour, power, ability, skills, knowledge and good health that together enable individuals or households to pursue different livelihood strategies to achieve their objectives (DFID, 1999). Skills and competencies may be general (such as the capacity to read, write and speak), or highly specific (Bhandari, 2013). There are five sources of human capital which Mokomane (2012) identified as comprising innate ability, schooling and school quality, non-schooling investments, training, and pre-labour-market influences.

Human capital is embodied in individuals and grows through use and experience, both inside and outside employment as well as through informal and formal learning. However, human capital also tends to depreciate through disuse (Côté et al., 2001). Individuals need the necessary combination of skills, experience, and education to be able to properly exploit or manage whatever resources they can access in their quest for a better life (Feher, 2009). Education and training are key components of human capital in the context of a rapidly evolving trade environment driven by globalization and changing cultures. This change imposes demands for new knowledge and innovation, and for skills that can enable enterprises to benefit from continuous technological advances (Côté et al., 2001).

Access to good quality education helps the poor to position themselves better in the labour market, thus enhancing their chances of breaking the poverty cycle

(Marinho et al., 2017). Onyeiwu & Liu (2011) explain that formal education and/or skills training enables households to better manage their assets, such as keeping track of their revenues, costs, savings and investments. Rural households can also use investment in the education of some household members as insurance against the risks from famine, drought, natural disaster, and other negative exogenous events (Onyeiwu & Liu, 2011).

The more educated a head of household is, the more likely it is that their household will escape poverty as education fosters greater resilience in the face of crises (CPAN, 2015). Muyanga et al., (2007) have shown an inverse relationship between poverty components and the highest level of education attained by the household head. They report that households whose heads lack formal education contribute 54 and 76 per cent respectively to transient and chronic poverty. This is because educated household heads have higher income-earning potential and more alternative income-earning opportunities, and are thus better able to improve the welfare of their respective households (Muyanga et al., 2007).

The vulnerability to poverty of a household is also related to its demographic structure. A high dependency ratio within the household predisposes it to both transient and chronic poverty. The dependency ratio is a function of household size, composition and occupation. The chances of households with a high number of either very young or very old members being poor are high (Barrett et al., 2006; Muyanga et al., 2007). Similarly, single-parent households are also more vulnerable to poverty, simply because only one household member bears the burden of providing for the needs of the entire family unit. By contrast, two-parent households can reap the benefits of economies of scale in income generation and distribution within the family (Davis, 2014).

The ability to recover from the shocks and stresses of poverty has also been linked to the victims' own perceptions of their recovery, as reported by Lin et al, (2017) who found a positive correlation between perceptions of recovery (PoR) and the actual recovery of affected households. In their study of households affected by the Wenchuan earthquake in China, these scholars report that those households found to be the most vulnerable to shock also had lower PoR (*ibid*.,

2017). For this reason, in addition to seeking to explore a household's perceived recovery from climatic and economic shocks, this research introduces the concept of aspirations (calling) to escape poverty, with the aim of understanding the role of self-confidence in a household's sustained escape from extreme poverty.

For this study, human capital is conceptualized to include properties including: education level of household head, highest education level of a household member, household dependency ratio, household's perceived ability to recover from shocks, skills on business development and household's strategies for recovery from shocks.

2.11.5 ASPIRATIONS (CALLING) TO ESCAPE EXTREME POVERTY

Aspirations reflect individuals' assessments of their own chances of changing the level at which they live. An individual's view of their own chance of getting ahead correlates with the efforts they make. Appadurai (2013) has argued that aspirations are central to the path out of poverty. An individual's aspirations form a reference point against which they assess the utility of any realized outcome. Thus a higher level of aspiration can adversely affect the satisfaction a person gains from any particular outcome. Individuals whose aspirations diverge greatly from their current standard of living have little incentive to improve that standard – even after a small improvement, the gap between dream and reality remains very large. Significant effort and investment will cover only a small part of the distance, and the overall journey remains too long, and therefore not worth undertaking in the first place(Parsons et al., 2015; Ray, 2006). Yet conversely, higher aspirations can also spur greater efforts to reach the goal (Dalton et al., 2014).

The aspirations theory introduces a new element to the discourse around the sustainable escape from extreme poverty. In this study, I employed a shift in household focus from contextual factors, supportive environment, and infrastructure (among others) towards self-confidence and commitment to sustainably transition from extreme poverty as a further explanation of why,

among households sharing a homogenous livelihood, some escape poverty while others remained trapped.

2.12 CONCEPTUAL FRAMEWORK

Having undertaken the necessary literature review, I sought expert advice, reviewed existing literature and developed a framework for relative household adaptive capacity to transition from extreme poverty. Indicators were then defined for the synthesized sub-indices of the household adaptive capacity index. In summary, for the purpose of this study, the indices responsible for relative household adaptive capacity to sustainably transition from extreme poverty comprises (also illustrated in figure 2): social, economic, human, and institutional capital mediated by the household's aspiration "calling" to escape poverty levels.

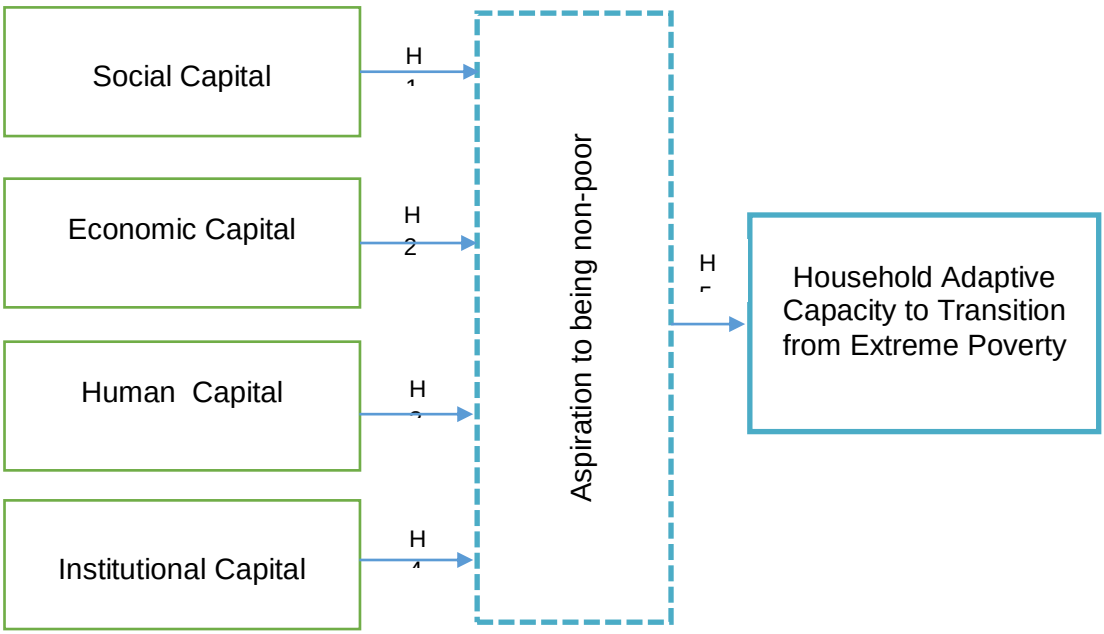

Figure 2 Schematic diagram of the conceptual framework
Source: Author's conceptualization

2.13.1 SOCIAL CAPITAL

Social capital is central to household relative adaptive capacity and is a critical element in any strategy for adapting to changes in climate or economic related hazards (Adger, 2003; Yohe & Tol, 2002). For this study, social capital was measured using four indicators: the number of community groups in which a household participates; the number of household members participating in at

least one community organization; the resource richness of contacts that a household boasts; and the formation (group composition) of social networks a household is an active membership. These indicators allowed the study to evaluate a household's collective action towards poverty escape, and its social capital/network base for shock preparedness.

The number of household members participating in at least one community organization, and the number of social groups/networks in which the household participates, was used to reflect household relative adaptive capacity by measuring the range of social safety nets to which a household has access (Vincent, 2007). Social capital groups have the additional informal function of providing informal insurance that is highly beneficial in the face of a climate or economic related shock (Vincent, 2007).

Considering the literature reviewed on the relationship between social resource factors and adaptive capacity to transition from extreme poverty an alternative hypothesis is formulated as below:

H1: Social resource factors are positively associated to household adaptive capacity to transition from extreme poverty.

2.13.2 ECONOMIC CAPITAL

In this study, eight sub-indices were adapted for the economic capital indicator. These comprised diversity (range) of income sources, loan usage (what the borrowed money is spent on), household access to credit (credit self-rating), existence of household savings for emergencies, income trend over the last three years, food expenditure to total income ration, access to market information and household debt to income ratio (bankability rating).

The study assumed that for a household to sustainably escape from poverty, it would need to minimize reliance on climate-sensitive primary income sources where other profitable economic activities are readily available. This is a reasonable assumption given that agriculture is typically associated with high risk and low economic returns and non-farm income is critically important to rural households (Corral & Reardon, 2001). This is the case for many small

agricultural operations, even in more developed countries(Corral & Reardon, 2001).

Food typically represents from 56 to 78 per cent of consumption among rural poor households, and 56 to 74 per cent in urban areas (Banerjee & Duflo, 2007). In this study, household food consumption at or above 85 per cent of the total income was adapted as a measure of extreme poverty.

Access to technologies and specifically agricultural technologies is critical to a rural farm household's ability to adapt to climate and economic related changes and eventual poverty escape. Agricultural technologies are presumed to improve crop and livestock productivity (Matson, Parton, Power, & Swift, 1997). Yohe and Tol (2002) and the IPCC (2001) state that the range of available technological options for adaptation is a fundamental determinant of a household's relative adaptive capacity. In this study, access to technologies sub-index was calculated using household's access to any of the following three important farm implements: water for dry land irrigation and livestock; access to pasture for animals; and/or livestock or crop health products/services. For the purpose of this study, agricultural assets were directly tied to household income, given the importance of both livestock and crop production in the study area.

Access to information can significantly impact the level of household relative adaptive capacity at the micro-level (Yohe & Tol, 2002), since information provides a basis from which households can anticipate or react to minimize the impact a climate- or economy-related change has on their household. Access to information is measured based on household ownership of the following assets that assist in the diffusion of information: a computer; a radio, a television; and a telephone. It is assumed that households who own assets useful for the diffusion of information have better access to information. This is however coupled with the human capital sub-indices on the level of education of the household head and/or the highest education level held by a household member. These indicate the capacity to decode and internalize externally sourced information.

Considering the literature reviewed on the relationship between economic resource factors and adaptive capacity to transition from extreme poverty an alternative hypothesis is formulated as below:

H2: Economic resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

2.13.3 HUMAN CAPITAL

Household adaptive capacity in the context of climate change is directly influenced by the knowledge and skill that enable members of a household to anticipate changes and modify their livelihood opportunities in response to those anticipated changes (Vincent, 2007). This requires not only knowledge but a certain level of experience, to translate the knowledge into positive outcomes. Years of education have often been used as a proxy indicator of knowledge and skill and exists as a key indicator in the United Nations Human Development Index (Trabold-Nubler, (1991). Based on the assumption that years of education positively affect knowledge and skill, the study will use the years of education of the head of household and the highest years of education of any household member as the two proxy variables to determine the level of knowledge and skills in the household.

Economic theory predicts that individuals with human capital are more likely to supply their labour for economic gain (Mincer, 1974). In this study, the education level of the head of household (or of the highest educated member of that household), the possession of employable skills and experience, the household dependency ratio, its business development skills base and the household's self-perceived ability to recover from shocks are adopted as sub-indices of the human capital index.

Considering the literature reviewed on the relationship between human resource factors and adaptive capacity to transition from extreme poverty an alternative hypothesis is formulated as below:

H3: Human capital resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

2.13.4 INSTITUTIONAL CAPITAL

The role of institutions in determining household relative adaptive capacity is widely accepted (Willems & Baumert, 2003), and infrastructure is one such institutional resource critical to adaptive capacity. In this study, access to infrastructure was measured by through following four variables: distance from household to a major road; distance from household to the nearest health facility; distance from household to the nearest primary school; and reported access to safe drinking water.

The first indicator - distance to a major road – was used as a measure of physical access to markets, and/or the related cost of transport for market access: often an unconsidered burden (Brooks et al., 2005; Czerniewicz, 2015).

Another set of indicators comprised the distance to the nearest health facility and primary school –households were assumed to have better access to basic services critical for poverty escape. The fourth indicator, access to clean drinking water, is an especially important measure of institutional capital, as water-borne illnesses significantly hinder households' economic and human capitals and their ability to adapt.

Considering the literature reviewed on the relationship between institutional resource factors and adaptive capacity to transition from extreme poverty an alternative hypothesis is formulated as below:

H4: Institutional resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

2.13.5 ASPIRATIONS (CALLING) TO ESCAPE POVERTY

Adkins (2012) relates aspirations to the societal exhortation of 'aiming higher' including the political, institutional and policy response to inequality and poverty that seem to imply that individuals have a role to play in their personal project of social mobility. Linked to the potential for self-change, Adkins (2012:24) expounds that "aspirations are deeply imbued with educative assumptions surrounding self-development and growth".

Importantly, the capacity to aspire is thwarted rather than unleashed in the narrow spaces offered by individualized, so-called 'pathways' for social mobility. In such narrow conceptualizations, aspiration becomes a symbolic marker for surviving contemporary inequalities (Adkins, 2012). Inline with Adkins (2012), Appadurai (2013) explains aspiration to be represented by a claim to capacity, aspiration, and voice that troubles the existing status quo and its injustices. Having sketched out the two views of aspirations which complement each other I adopted aspiration as a moderating variable for the household capacity to transition from extreme poverty.

In this study, aspiration ("calling" to escape poverty) was measured using a Likert scale based on a set of 15 weighted statements clustered into three sub-indices comprising: absence of fatalism (4 statements); sense of individual power (6 statements); and exposure to alternatives to the status quo (5 statements).

Considering the literature reviewed on the relationship between aspirations to be a non-poor and adaptive capacity to transition from extreme poverty an alternative hypothesis is formulated as below:

H5: Aspirations to being non-poor are positively associated with household adaptive capacity to transition from extreme poverty.

2.13.6 RELATIVE HOUSEHOLD ADAPTIVE CAPACITY

In this study, I measured relative household adaptive capacity as the sum of the scores from the twenty-two composite sub-indices. The sub-indices represent one theoretical determinant of relative adaptive capacity, comprising social, economic, human and institutional capitals. To understand the poverty status of each household, the study undertook three poverty measurement-related analyses: headcount; poverty gap; and Sens index.

2.13.7 CONCLUSION

This chapter has demonstrated how relative household adaptive capacity is insufficiently reflected within the framings of poverty escape in the extant literature, creating the entry point for this study. From the issues and concepts

mapped in the chapter, it became apparent that the determinants of relative household adaptive capacity for sustainable escape from poverty remain under-studied. Although models for poverty escape (graduation models) exist and provide a good grounding for this study, none has been modelled to the context of sub-Saharan Africa, let alone to the specific study area of this research. Existing models assume a progressive (linear) approach to poverty escape that cannot take into account the effect of shocks and stresses (both climatic and economic) and the characteristic of the study area.

This study identified four types of capital from literature (economic, human, social, and institutional) that contribute to the necessary relative household adaptive capacity for sustainable poverty escape. In addition, aspiration (the calling) to escape poverty emerges as a critical mediating factor. Aspiration merits further investigation in terms of its potential effect on causal relationships between the four capitals and relative household adaptive capacity for sustainable poverty escape. Previous studies on adaptive capacities, for instance, Victor (2007), relate more to climate change adaptation rather poverty escape. Since the area of this study (Turkana) is categorized as a zone of extreme poverty, the four capitals are adopted as the key variables for the study, with their respective sub-indices adapted from existing literature for contextualization into the study area.

The next chapter provides details of the research design and methodology adopted by this study.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research design and methodology of this research. It begins with a discussion of the methods similar studies have used for this type of research, with the aim of positioning the methodology selected for this work as the most appropriate for this study. As discussed in Chapter Two, previous studies indicate an unsettled knowledge base concerning adaptive capacity and challenge the design of future approaches to its assessment. That said, most of the existing studies on adaptive capacity and poverty escape employ quantitative approaches, risking the exclusion of key insights that are only accessible through *community inquiries* (qualitative study). Observing that communities best understand their own adaptive capacity factors and poverty escape processes, I employ a mixed-methods approach (quantitative and qualitative inquiry) for this study.

The sections that follow provide a detailed step-by-step account of the research procedures and analyses followed, to both offer other, future researchers the opportunity to replicate them, and promote research rigour.

The remainder of this chapter is organised as follows: the first four sections seek to ground the study setting, approach, methodological choices and strategy, in order to deepen understanding of the study methodology. The final two sections then deal with construct issues for both the quantitative and qualitative components of the study.

3.2 SAMPLING PROCEDURE

Based on the estimated sample size above, the research focused on a single sub-county - Turkana Central. As already noted above, Turkana Central sub-county was purposively chosen as it hosts the largest HSNP beneficiary caseload across the county, and also offers a blend of household livelihood strategies: peri-urban livelihoods (petty trade and labour sales); crops; and livestock production. I then employed a maximum variation sampling technique

to arrive at 3 sub-locations (Napetet, Kapus and Lokore), ensuring that every aspect of the study group/characteristics was represented. For this population, the variations comprised closeness to urban centres (geographical inclusion); remoteness/rurality and disconnect from urban centres (geographical exclusion); and livelihood options (livestock, crops, labour and petty trade). Given the low population density, all the 11 settlements in the sub-location were deliberately included.

Zikmund & Babin (2010:269) identify the two broad sampling designs authors use, namely probability and non-probability sampling, each constituting a variety of sampling techniques. For the household survey (quantitative), the study employed probability sampling to identify individual respondents at the community level. For the qualitative component, the study employed a non-probability multistage sampling approach. To select focus group discussions participants, the study used a judgmental sampling technique. In judgmental sampling, an experienced individual selects the sample based on his or her judgement about some appropriate characteristics required of the sample element (Zikmund & Babin, 2010:424). In this study, a minimum of eight and a maximum of 12 representatives were purposively selected from the village committee responsible for the government safety net programme's targeting process. The village committee members were perceived to have an in-depth understanding of poverty dynamics across the study area (their own villages). Elected to the targeting committees by their own communities in 2009, the committee members had received numerous training from the programme on topics including wealth ranking, targeting and case/grievance management. A further seven key informants drawn from the county government and the civil society were identified, based on the nature of the poverty reduction interventions they implemented.

3.3 RESEARCH SETTING

A combination of household surveys, focus group discussions and key informant interviews were conducted in Turkana County, the poorest county in Kenya. Because the study was concerned with a household's transition into and out of poverty, I focused on villages selected for the government safety net

programme (HSNP, see below), where poverty was expected to be more prevalent. Turkana County is constrained by an arid environment, remoteness from the capital and poor access to services, as well as experiencing the same underlying causes of poverty as other Kenyan regions. It ranks bottom out of 47 counties in terms of the poverty rate, electricity access, and children in school ages 15-18, and 46th in terms of immunization of children below 1 year, literacy, access to improved sanitation and several other health service indicators (Commission for Revenue Allocation, 2011:43).

Climatically, Turkana County is classified as arid, with temperatures reaching close to 40°C during the dry season. Average rainfall ranges from 120-500mm per year, with higher levels of rainfall in the west. The backbone of the Turkana economy has traditionally been nomadic pastoralism. Erratic rainfall and frequent droughts have been accompanied by outbreaks of livestock disease and abnormal migration patterns. Livestock holdings have not kept pace with rapid population growth and, as a result, the ability of local populations to survive from pastoralism alone has been compromised.

The fact that Turkana is one of the counties benefitting from the government's safety net programme was important in its selection. The safety net programme beneficiaries present the study with a population categorized as extremely poor, through both community-based inquiries (qualitative) and socio-economic profiles (quantitative) in 2009.

3.4 RESEARCH PHILOSOPHY

This study took a pragmatic stance, informed by the decision to deal with a mixture of subjective (qualitative) input from interviewees and quantitative household information. In chapter five of this study, qualitative and quantitative data are woven together, providing both depth and subjective insights from interviewees as proposed by Krishna (2004). Further, in contrast to much-existing literature on poverty and adaptive capacity, the study's indices and sub-indices were adopted based on their order of importance in the context. Much other extant literature assigns equal weight to all indices and their sub-indices, irrespective of context (see Vincent, 2007; Cumming, 2010 and Bryne, 2011).

This specific research setting revealed non-trivial entry into and out of poverty. Even in very poor places, some people commonly escape poverty, while others fall into poverty, consistent with mounting evidence on the extent of transitory poverty (Baulch & McCulloch, 2000). Additionally, there seem to be distinct geographic patterns to this process, with those sites with poor agri-ecological conditions and market access exhibiting greater and more persistent poverty than sites with more favourable conditions. These findings are consistent with the construct of geographic poverty traps (geographical exclusionary causes) advanced by Krishna (2004).

3.5 RESEARCH APPROACH

The study adopted an exploratory research approach because it offered strength in exploring the “what?”, "how?" and "why?" issues (Barratt, Choi, & Li, 2011), of the relationship between relative household adaptive capacity and sustained transition from extreme poverty – a characteristic useful for identifying and categorizing the determinants of household adaptive capacity and their inherent characteristics.

3.6 RESEARCH CHOICE

Multiple methodological options exist for measuring and characterizing adaptive capacity. These comprise (but are not limited to) case studies, survey techniques, modelling, mapping, and ethnography (Engle, 2011). In this study, a survey technique was adopted because of its strengths: ease of standardization and high representativeness through robust sampling procedures.

3.7 RESEARCH STRATEGY

Data gaps have hindered studies attempting to examine the causes of change in household trajectories over time (Barret et al., 2004). The few poverty escape studies available (Baulch & McCulloch, 2002; Carter & May, 2001; Christen, Demery & Peterson, 2002; Deinenger & Okidi, 2003) have predominantly used panel datasets assessing the conditions of households at two separate points in time. These studies have helped to generate new and important knowledge about immediate links and micro-level associations. However, panel data is

expensive and demands a long waiting period. Thus there is a need for additional methods to complement panel studies and add knowledge about the pathways leading into and out of poverty in specific contexts (Barret et al., 2004). Narayan et al., (2000) posit that community-based methods can be helpful in this regard. Knowledge about changes in the situation of particular households is widely shared among community members who have coexisted over reasonably long periods of time. Community members tend to know what events were associated with the pathways followed by different households (Narayan et al., 2000) – for example, whether it was through a daughter/son getting wage employment, a daughter marrying a rich man (leading to a huge dowry payment), or investment in a small business that some particular household worked its way out of poverty.

According to Krishna, (2004), different households can simultaneously either emerge from or fall into poverty. To understand the sequence of events associated with the pathways followed by different households, Chambers (2006) recommends careful and systematic engagement with community members and individual households. A particular community-based methodology – the ladder out of poverty – was developed for this purpose (Krishna, 2004). In studies in Kenya and India employing this approach, Krishna, Kristjanson, Radeny, & Nindo, (2004); and Krishna, Kapila, Porwal, & Singh, (2005) obtained significant and noteworthy results. Baulch & McCulloch (2002) and Ellis (2003) argue that households that escape or fall into poverty do so as a result of objective conditions, subjective understandings and the effectiveness of individual household poverty escape strategies. Households striving hard to combat poverty understand and define the condition locally (Krishna, 2004), whereas professionals operate with more static and standardized wants and needs.

Based on these findings, the study sought first to grasp the study population's own understanding of poverty by employing the ladder out of poverty – in response to the following questions: How does this community commonly define poverty? What factors cause one to be termed 'poor' in this community? Are these factors universally agreed on by a majority of the community? Over the

past decade, what proportion of households has escaped from poverty, fallen into poverty or remained poor? In this community, what factors influence households' movements out of and movements into poverty? How can households living in this community be supported to escape poverty in a sustainable way?

Given the challenges in poverty studies as described above, Chambers (1995); Barret et al., (2006); and Krishna (2004) recommend blending of quantitative and qualitative approaches in studies of poverty movement – particularly where panel data is unavailable. This study assumed a large quantitative and small qualitative approach. In this study, I adopt Maxwell & Loomis (2003) distinction of quantitative data from qualitative data with quantitative data constituting enumeration or measurements within categories while qualitative data includes textual either as written, spoken words or photographs. In this study, I use the findings from the qualitative data to contextualize and enrich findings from the quantitative data (Bryman, 2004; Mason, 2006), increase validity during the interpretation of the data and generate new knowledge (Stange, 2006). I employed a large quantitative – small qualitative approach for triangulation with the quantitative data providing general patterns and width and qualitative data reflecting upon experience and depth (Newby, 2014). Despite its usefulness in an in-depth understanding of a phenomenon, processes and experiences of actors, qualitative approaches have a limitation of generalizability. On the other hand, the quantitative approach allows for more rigour and generality but suffers from lack of in-depth understanding of the phenomenon under study.

3.8 QUANTITATIVE RESEARCH METHODS

3.8.1 SAMPLE SIZE

The formula below (Schlesselman, 1974) to estimate the sample size for the study.

$$n = \frac{r+1}{r}\frac{(\bar{p})(1-\bar{p})(z_{\propto/2}+z_{\beta})}{(p_1-p_2)^2}$$

Where

n=Sample size

r= Ratio of control to cases

$\bar{p}$= Average proportion exposed to HSNP social cash transfers

z_{β}= Standard normal variate for power

$z_{\propto/2}$= Standard normal variate for level of significance

$p_1 - p_2$= Effect size or difference in proportions

The study took r=1 for an equal number of cases and controls, for a desired power of 80%, $z_{\beta} = 0.84$ and at 5 per cent level of significance $z_{\propto} = 1.96$. The average proportion exposed in the control group was20 per cent hence the proportion of the case group exposed is 0.265 when detecting an odds ratio of 2. When the figures were replaced in the above equation, it gave a sample size of 181. That sample was then multiplied by two, 181 for the cases and 181 for controls. The total sample came to 362. 10 per cent of the sample is then added, to cater for attrition and non-response rates; this gave a final sample of 398.2 which was then rounded off to 400.

3.8.2 DATA COLLECTION METHODS

This study employed both community-defined poverty measurements and a closed questionnaire to explore the factors contributing to sustainable poverty escape. Previous studies have used only one of two poverty transition measurements (Mwamba, 2015; Thulstrup, 2015). However, Krishna (2004) strongly advocates community-defined poverty measurement of poverty status, as communities understand best their own local contexts and status. Data was collected between November 2017 and January 2018 across 11 villages in Turkana.

3.8.3 QUESTIONNAIRE BACK-TRANSLATION

The household survey questionnaire was put through a back-translation process from English to Swahili and then back to English, under the expert guidance of translators. This identified any aspects/concepts requiring contextualization or local definition. A university graduate from the community was recruited as a local guide/translator and adequately trained on both the household questionnaire and the FGD (focus group discussions: community-based enquiries) guidelines. At the community level, the Swahili version was administered by the researcher with the local guide/translator providing immediate support on conceptual translation issues.

3.8.4 HOUSEHOLD SURVEY DATA

The quantitative data collection methods employed in this study were survey methods (Zikmund & Babin, 2007:135). Survey methods involve research processes that gather large volumes of raw data through question-and-answer formats. Surveys are relatively inexpensive, enable the use of advanced statistical analysis and results can be generalised to the larger target population. However, survey methods are limited by the lack of in-depth data detail, and potentially a low response rate (Feinberg et al., 2013:236).

For this study, primary data was collected from 375 households, randomly selected from the HSNP beneficiary register. A closed questionnaire (Annex 1) was used to capture data. The household survey questionnaire contained eight modules: household roster; household expenditure; food access; household economy; asset inventory; social agency; shocks; and aspirations and confidence to adapt. The modules and relates module questions were constructed in a manner that denied respondent retrieval cues as a way of mitigating common method bias – social desirability – given the study sample poverty status and expectation of enlisting in government safety net programme. This module questions and scale of measurement was adapted from previous poverty, resilience, and adaptation studies (Appadurai, 2013; Bryne, 2011; Frankenberger et al., 2014; Krishna, 2004; Mwamba, 2015; and Vincent, 2007). For this study, I approached respondents at different times and

days of the week with an aim to ensure that I sampled more representatives of the concerned target population (Feinberg et al., 2013:238).

3.9 QUALITATIVE DATA

3.9.1 COMMUNITY BASED INQUIRIES

The study facilitated eight separate FGDs with respondents drawn from the HSNP targeting committees and community members. A focus group discussion guide (Annex 2) was developed with the following key questions: i) *What defines a poor household in this community?; ii) What proportion of the community was poor or not poor in 2009, is poor now, and remains non-poor (2017)?; iii) What has kept the poor households poor?; iv) For households that have managed to escape poverty, what factors caused their mobility out of poverty?; and finally,v) what policy strategies would sustainably propel households out of poverty in this community?*

3.9.2 KEY INFORMANT INTERVIEWS (KII)

Further qualitative data was collected from key informants drawn from both policy-maker (county government) and practitioner (NGOs, UN, FBO) levels. A KII schedule (Annex 3) was developed and used to elicit information relating to poverty dynamics (profiles) across the county; poverty reduction strategies with potential effect on the study community; livelihood transitions over the last 10 years; the role of aspirations in escaping poverty in relation to the local community; households' own actions towards poverty escape; and factors responsible for poverty traps.

3.10 PILOT TESTING

In follow up to the development of a questionnaire, the next stage is to have it pretested (Shiu et al., 2009:348). The process of pretesting a questionnaire involves applying the questionnaire on a small sample of respondents (Malhotra et al., 2012:476) with an objective of identifying and mitigating areas of concern in addition to improving the questionnaire. All parts of the questionnaire thus; structure, scales, question content and layout, must be pretested. The respondents selected for the pretest bear the same characteristics as those that

form the actual sample (Malhotra et al., 2012:477). Two methods of pretesting exist thus; protocol analysis and debriefing. Protocol analysis is when respondents are asked to write comments on the questionnaire while answering it. Debriefing relates to when respondents are informed that it was a pretest after they have completed the questionnaire. They are then asked to explain the meaning of each question and whether they have encountered any problems while answering the questionnaire (Malhotra et al., 2012:478).

For this study, the household questionnaire was administered to 30 randomly selected respondents in an HSNP village in Turkana Central as a pretest. The random sample of 30 was drawn from the HSNP beneficiary register picking every seventh household and or picking the next available in the event that the seventh wasn't available. The Cronbach's Alpha test for internal consistency returned a coefficient of 0.7: an indicator of good reliability. From this pilot, the study identified and extended the localized sub-indices beyond what had been found in the literature.

3.11 DATA ANALYSIS AND PRESENTATION

This study generated largely quantitative data, with a smaller amount of qualitative data. To answer the two subsidiary research questions (What factors contribute towards the relative household adaptive capacity for transition from extreme poverty? Does the aspirations (calling) to transition from poverty influence a household's relative adaptive capacity to transition from extreme poverty? I employed four approaches to data analysis: first, an index-based approach to identify the significant determinants (factors) of relative household adaptive capacity in relation to research question one. Second, an index-based approach to estimate the household's level of aspiration for poverty escape; third, identification of sample households' current poverty status; and fourth an estimation through least squares regression to test the association between relative household adaptive capacity and sustained transition from extreme poverty.

The qualitative data component was subjected to thematic analysis. Thematic analysis is considered a more flexible and reflective process that ultimately

helps to capture the richness and in-depth nature of data collected through community engagement (Krishna, 2004). This was used to profile the study population's poverty dynamics; categorize the community into poverty groups; identify causal factors responsible for the escape from or fall-back into poverty at household level; identify the strategies households employ to recover from a known shock (adaptive capacity factors); lastly, explore the most feasible strategies (policy efforts) that could cause sustainable poverty escape across the study population.

3.11.1 ADAPTIVE CAPACITY DETERMINANTS

Exploratory factor analysis was used to explore the dimensionality of the variables most influencing relative household adaptive capacity, by finding the smallest number of factors. Latent variables represent unobserved constructs and are also referred to as factors or dimensions. Through exploratory factor analysis, the study:

i) Reduced the number of indicators, by classifying the indicators into homogeneous sets and identifying groupings that would allow selection of one variable to represent many indicators.
ii) Examined the relationship between relative household adaptive capacity and the indicators identified for the study – social, economic, human and institutional – including their variant sub-indices.
iii) Developed theory constructs for relative household adaptive capacity that could potentially be used in future studies on the sustained transition from extreme poverty.

3.11.2 EXPLORATORY FACTOR ANALYSIS

The central theory around factor analysis involves the relation of surface attributes in a systematic way. This means that when a researcher obtains a measurement for an individual or surface attribute, that measurement is at least in part because of the influences of underlying internal attributes (Tucker & MacCallum, 1997). In this study, for instance, a household's proportional spend of its total monthly income on health and education is informed by surface attributes that this study sought to unpack.

Fabrigar, et al. (1999) identified five major methodological issues for consideration when using factor analysis including; i) decision on what variables to include in the study and the size and nature of the sample on which the study will be based; ii), determining if factor analysis is the most appropriate form of analysis given the goals of the research project; ii), assuming that factor analysis is appropriate, a specific procedure to fit the model to the data must be selected; iv) decision on how many factors should be included in the model; v) selecting a method for rotating the initial factor-analytic solution to a final solution that can be more readily interpreted. Given this study's interest in identifying household capacities for transition from extreme poverty, I employed exploratory factor analysis to identify the indices and sub-indices of household adaptive capacities for transition from extreme poverty, understand their interrelationship and reduction to a manageable number of factors.

3.11.3 PAIRED SAMPLE T-TEST

For this study, I employed paired T-test to analyze the data to know whether there were significant different assets scores over the last one year prior to the study. Ary at al. (2018:195) defines t-test, as "a statistical procedure that allows a researcher to determine whether the mean difference between two sets of observations is zero". Given the interest of this study in understanding the household's asset holding trends, paired sample t-test was employed as part of the analysis.

Ary at al. (2018:195) identifies two types of significance to consider in the interpretation of the results of a paired sample *t*-test, thus statistical significance and practical significance. Statistical significance is determined by looking at the *p*-value. The *p*-value gives the probability of observing the test results under the null hypothesis. The lower the *p*-value, the lower the probability of obtaining a result like the one that was observed if the null hypothesis was true. The cutoff value for determining statistical significance is largely decided on by the researcher, although a value of .05 or less is preferred. Practical significance depends on the subject matter. It is not uncommon, especially with large sample sizes, to observe a result that is statistically significant but not practically

significant. In most cases, both types of significance are required in order to draw meaningful conclusions.

3.11.4 ASPIRATIONS: INDEX QUANTIFICATION

The concept of aspirations is multidimensional (Bernard and Tafesse, 2012). In this study, I adopted Appadurai's (2013) and Bunnel et al. (2018) argument that the voice that troubles the existing status quo and its injustices can be quantified into indicators. The study employs 15 questions grouped into three sets: the absence of fatalism; belief in individual power to enact change; and exposure to alternatives to the status quo. These indicators are combined into an overall index. This household aspiration score (index) is then used to mediate between the household's capitals (independent variables) and its relative adaptive capacity level (dependent variables).

3.11.5 RELATIVE HOUSEHOLD ADAPTIVE CAPACITY

The study calculated household relative adaptive capacity using indicators and sub-indices. This involved selecting relative household adaptive capacity indicators representing access to those economic, social, institutional and human capital resources that directly or indirectly influence sustained graduation from extreme poverty for rural communities.

Individual indicators were selected based on a theoretical understanding of the relationships between the conceptual components of adaptive capacity and each individual indicator. The sub-indices utilized a combination of binary and continuous variables. All continuous variables were scored according to the maximum observed value of that variable in the dataset, and converted to proportional variables:

$$Indicator\ Score\ HH\ X = \left(\frac{Observed\ Value\ for\ HH\ X}{Variable\ Maximum\ at\ HH\ Level}\right)$$

Where a score of '1' represents the best score for that variable (for example. the existence of alternative sources of incomes) and '0', the worst score (for example, high dependency ratio). This was consistent with the approach to finding relative household adaptive capacity and ensured the indicators were

sensitive enough to show differentiation. For variables with extreme outliers, a rank order approach was employed to reduce the impact of outliers.

The household capacity score was formed from the sum of the scores from the 22 composite sub-indices (see Table 1 below). The sub-indices each represent one theoretical determinant of adaptive capacity. The approach of creating an aggregate index from several composite sub-indices was chosen to maintain transparency, which is critical for end-users because there are no absolute values in adaptive capacity (Vincent, 2007).

As seen in Table 2, the study used four variables of relative household adaptive capacity as informed by previous studies (Byrne, 2011, Krishna, 2004; Mwamba, 2011; and Vincent, 2007). Each variable comprises more than one sub-index. To identify the corresponding sub-index weight, factor analysis was run and the causality (significance) to the variable taken as the localized weight. The sub-indices were scored between 0 and 1. Assigning equal weight to the variables was consistent with the approach used by O'Brien et al. (2004), Elrick-Barr, et al. (2018) and Vincent (2007), among others.

Table 2 Index and sub-indices for relative household adaptive capacity

	Variable	*Sub-Indices*	*Unweighted Score*	*Weighted Score*
1	***Economic Capitals (25%)***	*Diverse Income Sources (31%)*	*0.47*	*31%*
		Loans Usage (6%)	*0.09*	*6%*
		Access to Credit (12%)	*0.19*	*12%*
		Savings (10%)	*0.16*	*10%*
		Income trend over the last 3 Years (15%)	*0.23*	*15%*
		Food Expenditure to Total Income Ration (0%)	*0.00*	*0%*
		Access to Market Information (26%)	*0.40*	*26%*
		Debt to Income Ratio (0%).	*0.00*	*0%*
2	***Human Capitals (25%)***	*Education level of Head of HH (46%).*	*0.90*	*46%*
		Highest education by HH member (22%).	*0.44*	*22%*
		Dependency Ratio (10%).	*0.20*	*10%*
		Household's perceived ability to recover from shocks (15%).	*0.30*	*15%*
		Training on Business Devt (7%)	*0.14*	*7%*
3	***Institutional Resources (25%)***	*Distance to Nearest Market (6%)*	*0.07*	*6%*
		Distance to Nearest Sch (21%)	*0.24*	*21%*
		Distance to Nearest Main Rd (14%)	*0.15*	*14%*
		Distance to Nearest Health Ce (23%)	*0.26*	*23%*
		Access to Safe Water (36%)	*0.41*	*36%*
4	***Social Resources (25%)***	*HH is Member of a Social Group/Net (21%)*	*0.19*	*21%*
		Richness of Contact (15%)	*0.15*	*15%*
		Composition of Social Network (36%)	*0.34*	*36%*
		Number of groups HH is in (27%)	*0.26*	*27%*

To identify what factors contribute towards relative household adaptive capacity for transition from extreme poverty (research question 1), the study employed exploratory factor analysis and multiple regression analysis to identify the relationship between relative household adaptive capacity and sustained graduation; and – informed by the qualitative poverty ranking data – to predict future scenarios on sustained transition from extreme poverty (time to exit poverty). Factor analysis was used to explore the structural relationship between measured variables and latent constructs, after which least square regression analysis was conducted to estimate causal relationships between

relative household adaptive capacity and sustained transition from extreme poverty.

3.11.6 INTER-CARDER POVERTY TRANSITION

This study developed a model inferred to as inter-carder poverty transition model. The model is aligned to the BRAC and Fokonze's poverty graduation models and introduces the concept of aspirations (calling) to escape from poverty. The model seeks to explain the sustainable transition from extreme poverty to self-sustenance in the wake of idiosyncratic or covariate shocks.

In this study, households were classified into carders using the index score of their expenditure patterns. Parameters that formulated the expenditure pattern indices included food expenditure to income ratio, the gender of household head, household size and the household dependency ratio. Households with very low scores i.e. between 0.00-0.249 were placed under carder 1 while those that scored between 0.259-0.49 were placed under carder 2. Households with an index score of 0.51-0.749 were placed under carder 3 while households which scored an index above 0.75 were placed under carder 4.

In this study, for a household to successfully transition from poverty, it had to accumulate and sustain three sets of capacities thus: i) build the absorptive capacity required in that carder; ii) be able to switch to alternative sources of livelihood based on changing conditions within the carder (adaptive capacity) and; iii) have the capacity to utilize the available infrastructure and harness the advantages of community networks and the policies in place (transformative capacity). Once the household has met the thresholds in relation to capacities measured that is economic capitals, human capitals, institutional resources and social resources, it is termed resilient hence able to deal with shocks.

In this study, the movement of a household from carder 1 to carder 2, was considered a positive movement towards the transition from extreme poverty. However, even with this transition, the household was still considered poor. With the shift from carder 2 to carder 3 the household was considered to have made positive traction. A household that successfully transitioned from carder 3 to 4 was considered as a well-off household. For the purpose of this study, for a

household to sustainably move from one carder to another, it had to meet the threshold in the previous carder. However, this did not imply that the household would not be affected in the event of a shock. Rather, the possibility of it bouncing back to the previous state (before the shock) was almost guaranteed if all parameters were adjusted accordingly.

3.11.7 QUALITY ASSURANCE AND ETHICS

Researcher - participant interactions can be ethically challenging for the former, given the personal involvement in different stages of the study. This requires the formulation of specific ethical guidelines (Sanjari et al., 2014). The main ethical issues in mixed-method studies have been identified as comprising confidentiality, asking difficult questions in simple formats, employing neutral language and non-ambiguity of concepts(Orb, 2001).

Informed consent has been recognized as an integral part of ethics in research across multiple different fields. For qualitative researchers, it is of the utmost importance to specify in advance what data will be collected and how they will be used (Hoeyer et al., 2005). The principle of informed consent stresses the researcher's responsibility to fully inform participants of different aspects of the research in a language they can understand. Clarifications need to include the nature of the study; the participants' potential role; the identity of the researcher; the objectives of the research; and how the results will be published and used (Orb, 2001). Prior to field data collection, ethical permission was sought from the University's (GIBS) ethics committee. Research consent was given, and the research was also approved by the HSNP Secretariat in Nairobi and the County Government of Turkana.

Additionally, this study undertook the following ethical protection measures. The household questionnaire had a consent-seeking page immediately following the introductory note (see Annex 1). Only persons aged 18 years or over were interviewed, ensuring that no child was interviewed. Finally, during both focus group discussions and key informant interviews, participants were fully briefed on the purpose of the research and end-use and their consent was sought for direct quotations. In addition to engaging a local guide/translator for effective conceptual translations as noted above (which ensured that difficult questions

are probed through neutral and simpler language) the study did not record names or personal identification numbers for the respondents to ensure their confidentiality. To ensure that the study population did not relate the research with HSNP retargeting (where current beneficiaries risk exiting from the programme) and targeting (where non-beneficiaries position themselves for inclusion in the programme), the researcher explained explicitly that the study had nothing to do with HSNP's targeting and retargeting process, but that findings from the study were aimed at informing how best the government and development partners could best support poverty existing in the study area.

3.12 CONCLUSION

In this chapter, I have presented the research design further describing the mixed-methods approach (quantitative and qualitative inquiry) adopted. Further, I provided a detailed step-by-step account of the research procedures and analyses followed, with two last sections addressing the construct issues the quantitative and qualitative components of the study.

CHAPTER 4: DATA AND SAMPLE CHARACTERISTICS

4.1 INTRODUCTION

In this chapter, I discuss and interpret the results of the study. The chapter comprises a discussion of the sample realisation rate; demographic profiles of the respondents; and a qualitative poverty self-categorization by the study population. Subsequently, the descriptive results for predictors of poverty are provided and the results of the data reduction techniques used are presented.

I have organized the rest of this chapter to include sample realization, the demographic profile of the respondents, and validity and reliability test in the first three sections. The three sections that follow then deal with construct issues for both the quantitative and qualitative components of the study in addition to a concluding section.

4.2 SAMPLE REALIZATION

This study sought to understand the process through which households transition from extreme poverty. It was imperative therefore to engage with a population that would offer a higher number of households categorized as poor. In total 375 respondents were reached, comprising 179 HSNP direct beneficiaries (regular recipients of the social cash) and 197 non-beneficiaries (not receiving the social grant). Inclusion on the regular cash transfer beneficiary list is a three-stage process, employing both community-based targeting and verification and the use of a Proxy Means Test (PMT) to determine household vulnerability. At the start, all eligible households undergo the universal social registration and have their (asset-based) poverty status determined through the PMT and verified through community processes.

4.3 DEMOGRAPHIC PROFILE OF RESPONDENTS

This section reports on the demographic profiles of study respondents, using frequencies and percentages. The unit of analysis is the household, disaggregated by gender of household head and HSNP beneficiary status. In profiling respondents, the study considers the age of respondent; the health

status of household members; members' relationship to the household head (dependency on the head of household); and household size.

Krishna (2004: 280) in his studies in India and Pakistan states: "households had begun to see for themselves the link between family size and economic fortunes", indicating that household size has a bearing on poverty escape or descent. In Kenya, the Poverty Reduction Strategy Paper (PRSP) of 2014 identified household size as a critical factor in household poverty escape. In the India and Pakistan study, (Krishna, 2004) reveals that the probability of a household being poor in Pakistan specifically increased according to household size, dependency ratio and geographical area of residence (geographical poverty traps), but decreased by education and land and livestock holding. Both the age and sex of the household head had an impact on household poverty status in that study (Krishna, 2004).

Table 3 below provides insights into the profiles of respondents. From the table, the majority of respondents were aged30-54 (economically active age) at 60.11 per cent for the Female-Headed Household (FHH) and 53.14 per cent for Male-Headed Household (MHH). This was followed by those between 55-81(elderly) at 21.9 per cent for FHH and 28.99 per cent for MHH. Youth aged below 30 years were at 17.98 per cent for the FHH and 17.84 per cent for the MHH.

Most of the respondents were household heads (51.83 per cent) for FHH and 53.26 per cent for MHH. Respondents who were the spouses of household heads followed at 44.50 per cent for FHH and 51.09 per cent for MHH. Respondents with other relationships to the household head were at 3.67 per cent for both FHH and MHH.

The majority weight of household size was at a ratio of 0.25(<6 members) at 56.74 per cent for the FHH and 48.22 per cent for the MHH, followed by a ratio of 0.5 (7-12 members) at 29.77 per cent for FHH and 44.16 for MHH. The household size ratio of 0.75 (13-17 members) followed at 13.48 per cent for FHH and 7.61 per cent for MHH.

The results indicate that the majority of the study population comprised people in the economically active age group (17 - 55 years). Later in the study, I sought to identify if this observation (in particular, concerning household income diversification and levels and dependency ratio) had any relationship to the households' relative adaptive capacity for poverty escape.

Table 3 Profile of respondents

		HSNP Beneficiaries				*HSNP Non Beneficiaries*				*OVERALL*			
		FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Age of Respondent	*55-81(elderly)*	*21*	*53.8%*	*18*	*46.2%*	*21*	*42.0%*	*29*	*58.0%*	*39*	*21.9%*	*60*	*28.99%*
	30-54(active)	*23*	*21.5%*	*84*	*78.5%*	*23*	*20.9%*	*87*	*79.1%*	*107*	*60.11%*	*110*	*53.14%*
	below 30 (youth)	*6*	*18.8%*	*26*	*81.3%*	*6*	*16.2%*	*31*	*83.8%*	*32*	*17.98%*	*37*	*17.84%*
										178	***100%***	***207***	***100%***
Relationship to head of HH?	*HHH*	*35*	*35.4%*	*64*	*64.6%*	*28*	*28.6%*	*70*	*71.4%*	*99*	*51.83%*	*98*	*53.26%*
	Spouse	*13*	*17.3%*	*62*	*82.7%*	*18*	*19.1%*	*76*	*80.9%*	*85*	*44.50%*	*94*	*51.09%*
	Child	*0*	*0.0%*	*0*	*0.0%*	*1*	*50.0%*	*1*	*50.0%*	*0*	*0.00%*	*2*	*0.01%*
	Grandchild	*0*	*0.0%*	*1*	*100.0%*	*0*	*0.0%*	*0*	*0.0%*	*1*	*0.005%*	*0*	*0.00%*
	Parent to HHH	*2*	*100.0%*	*0*	*0.0%*	*2*	*100.0%*	*0*	*0.0%*	*2*	*0.01%*	*2*	*0.001%*
	Parent to Spouse of HHH	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.00%*	*0*	*0.00%*
	Bro or Sis HHH	*0*	*0.0%*	*1*	*100.0%*	*1*	*100.0%*	*0*	*0.0%*	*1*	*0.05%*	*1*	*0.005%*
	Worker	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.00%*	*0*	*0.00%*
										191	***100%***	***184***	***100%***
Weight of HH Size	*0.25*	*38*	*37.6%*	*63*	*62.4%*	*27*	*28.4%*	*68*	*71.6%*	*101*	*56.74%*	*95*	*48.22%*
	0.5	*7*	*13.2%*	*46*	*86.8%*	*20*	*23.0%*	*67*	*77.0%*	*53*	*29.77%*	*87*	*44.16%*
	0.75	*5*	*20.8%*	*19*	*79.2%*	*3*	*20.0%*	*12*	*80.0%*	*24*	*13.48%*	*15*	*7.61%*
	1	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.00%*	*0*	*0.00%*
										178	***100%***	***197***	***100%***

I examined household health status as a proxy indicator for both household dependence ratio and household recurrent expenditure on the chronically ill member(s). The results in Table Four below indicate that most of the respondents described themselves as 100 per cent fit as represented by 75 per cent both for FHH and MHH respectively. Households reporting a sickly member were at 15 per cent for both FHH and MHH. chronically ill informants were at 6 per cent for FHH and 5 per cent for MHH; disabled at 5 per cent both for FHH and MHH.

Table 4 Household health status

	HSNP Beneficiaries				***HSNP Non-Beneficiaries***				***Overall***			
	FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
100% fit	*31*	*75%*	*97*	*74%*	*34*	*74%*	*108*	*74%*	*65*	*75%*	*205*	*75%*
Disabled	*2*	*5%*	*6*	*5%*	*2*	*5%*	*7*	*5%*	*4*	*5%*	*13*	*5%*
Sickly	*6*	*15%*	*19*	*15%*	*7*	*15%*	*21*	*15%*	*13*	*15%*	*40*	*15%*
Chronically ill	*2*	*6%*	*7*	*6%*	*3*	*6%*	*8*	*6%*	*5*	*6%*	*15*	*5%*
Other	*0*	*1%*	*1*	*1%*	*0*	*1%*	*1*	*1%*	*0*	*0%*	*2*	*1%*
Total									***87***	***100%***	***275***	***100%***

4.4 VALIDITY AND RELIABILITY TEST

In consideration of validity and reliability within the context of the study, I adapted Coolican (2014) definition of validity as being an investigation that can be generalized beyond the study context. I identified three primary areas of external validity of interest to the study to include; i) population validity, ii) ecological validity; and iii) historical validity (Brancht and Glass, 1968; Brunswick, 1947; Coolican, 2014).

In this study, I argued that threats to validity may arise from instances including the passing of time affecting how respondents view experiences of interest to the study. With the qualitative component of the study involving respondents reflecting on poverty status 20 years ago, there is a risk that participants may not remember

experiences as they occurred as more recent experiences shape the respondents' view of earlier experiences.

Table Five provides insight into the reliability of the four major factors of concern in the study. Cronbach's alpha coefficient was calculated to determine the internal consistency and reliability of the scale measuring the factors. Cronbach's alpha coefficient of the above four main factors exceeded 0.70, which is the standard measure of internal consistency and reliability. Thus I concluded that all the factors had adequate reliability.

Table 5 Validity and reliability test

	Item-Total Statistics		
	Scale Mean if Item Deleted	*Scale Variance if Item Deleted*	*Cronbach's Alpha if Item Deleted*
Institutional Resource Factors	*3.1427*	*4.663*	*.895*
Human Capital	*3.6352*	*3.036*	*.828*
Social Capital	*3.3707*	*1.916*	*.824*
Economic Resource Factors	*3.8555*	*4.276*	*.837*

4.5 HOUSEHOLD CONDITIONS

I looked at housing quality, primary cooking fuel and main source of domestic water (Multidimensional Poverty Indicators (MPI) to understand the conditions the study population lived in as proposed by Alkire & Santos, 2011 and Thorbecke, 2007. In addition to protecting occupants from environmental hazards, housing has a relationship to access to other services including water supply, electricity and waste disposal. The source of domestic water (improved or unimproved) indicates the probability of contamination.

From the results, most of the respondents lived in mud-walled/grass-thatched houses (65.34 per cent) for FHH and 35.29 per cent for MHH, followed by those who live in grass-walled /grass-thatched houses (19.32 per cent) for FHH and 42.86 per cent for MHH. Those who lived in brick-walled/zinc roofed permanent

represented 5.68 per cent for FHH and 5.04 per cent for MHH, and lastly, those living in zinc-walled/zinc-roofed homes were at 0.00 per cent for FHH and 1.26 per cent for MHH. I, however, observed that housing types in the study area are influenced by both harsh weather (extremely high temperatures) and cultural conditions (pastoralism), both of which impact significantly on the types of materials used in different localities. The grass-wall and grass-thatched houses are culturally accepted due to the cooling effect and ease of construction and de-construction in the event of movement in search of pasture and water (nomadism). The findings revealed that there were more FHH beneficiary households with grass-walled and/or grass-thatched houses. This was attributed to two factors: poverty – with housing type used as an indicator; and labour constraints, with the study assuming that having access to their own labour is critical for housing in the study area, and that labour constrained, female-headed households, faced a challenge in this respect.

I looked at cooking fuel as an indicator under the MPI (Alkire & Santos, 2011). The majority of respondents used firewood as their primary cooking fuel(80.90 per cent) for the FHH and 67.50 per cent for MHH, followed by those who used charcoal, at 19.10 per cent for FHH and 29.50 per cent for the MHH. Respondents who used kerosene and other sources of fuel were represented by 0.00 per cent for the FHH and 1.50 per cent for MHH. The study featured mapped here indicate a high dependency on wood: a ‘primitive’ fuel which, under the MPI, is a proxy indicator for poverty. However, because wood is freely accessible in this area, the MPI indicator may be inappropriate in this context.

Most of the respondents accessed water for domestic purposes from springs/streams: 68.57 per cent for FHH and 45.18 per cent for MHH, followed by those who accessed it from public kiosks at 31.43 per cent for FHH and 49.24 per cent for MHH. Respondents also accessed water from other sources at 1.71 per cent for FHH and 4.57 per cent for MHH. Respondents who accessed water for domestic purposes from earth pans/sand dams were the smallest group at 0.00 per

cent for FHH and 1.02 per cent for MHH. Most respondents reported a round trip to water points taking 30 minutes during the wet season and 54 minutes during the dry season. This falls within the MPI threshold of a 30-minute round trip for water access in rural communities (Thorbecke, 2007).

Table 6 Household conditions

		HSNP Beneficiaries				HSNP Non Beneficiaries				Overall			
		FHH		MHH		FHH		MHH		FHH		MHH	
		N	%	N	%	N	%	N	%	N	%	N	%
Housing Quality	Mud walled/Gras thatched	27	23.5%	88	76.5%	25	30.1%	58	69.9%	115	65.34%	84	35.29%
	Grass walled/ thatch	12	35.3%	22	64.7%	13	21.0%	49	79.0%	34	19.32%	102	42.86%
	Zinc walled/Zinc	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.00%	3	1.26%
	Mud walled/Zinc	8	47.1%	9	52.9%	7	18.9%	30	81.1%	17	9.66%	37	15.55%
	Permanent	2	20.0%	8	80.0%	5	41.7%	7	58.3%	10	5.68%	12	5.04%
										176	**100%**	**238**	**100%**
Chief Cooking Fuel	Firewood	40	27.8%	104	72.2%	33	24.4%	102	75.6%	144	80.90%	135	67.50%
	Charcoal	10	29.4%	24	70.6%	16	27.1%	43	72.9%	34	19.10%	59	29.50%
	Kerosene	0	0.0%	0	0.0%	1	33.3%	2	66.7%	0	0.00%	3	1.50%
	Others	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.00%	3	1.50%
										178	**100%**	**200**	**100%**
What is the Main Source of Domestic Water for the Household?	Spring/Stream	28	23.3%	92	76.7%	18	20.2%	71	79.8%	120	68.57%	89	45.18%
	Public Piped Kiosk	22	40.0%	33	60.0%	28	28.9%	69	71.1%	55	31.43%	97	49.24%
	Earth Pan/Sand dams	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.00%	2	1.02%
	Others	0	0.0%	3	100.0%	4	44.4%	5	55.6%	3	1.71%	9	4.57%
										175	**100%**	**197**	**100%**

4.6 HOUSEHOLD FOOD SECURITY STATUS

I looked at the households' food security status as a proxy indicator for food poverty. For the purpose of this study, I used the mean food consumption expenditure, mean food share of consumption expenditure, the proportion of households going whole days without eating in the worst recent food shortage period, and mean dietary diversity score to determine household food security status, based on the HSNP status of the household.

From Table Seven below, the study confirmed that HSNP beneficiaries had a fair food security status compared to their counterparts along four dimensions. First, the mean expenditure on food in HSNP households was marginally above that of the non-benefiting households. Second, the share of food in total consumption spending in HSNP households is slightly lower than in non-benefiting households. Third, the proportion of households going entire days without eating during the most recent food shortage is lower for HSNP households than for non-benefiting households. Lastly, HSNP households have a higher dietary diversity than non-HSNP households.

Table 7 Household food security

Food Security Outcome	***HSNP Beneficiaries***	***HSNP Non-Beneficiaries***	***Observations***
Mean food consumption expenditure (KES)	*1200*	*1139*	*375*
Mean food share of consumption expenditure (%)	*67.5*	*70.7*	*375*
Proportion of households going entire days without eating in worst recent food shortage period (%)	*55.4*	*65*	*375*
Mean dietary diversity score	*7.0*	*6.0*	*375*

Notes: 'Dietary diversity score' is the number of food groups (out of 12) that the household consumed in the past week: cereals; eggs; fish; fruits; meat; milk and milk products; oils and fats; pulses, legumes and nuts; roots and tubers; salt and spices; sugar; vegetables.

These study findings are supported by the qualitative data. During FGD, many households reported that they were able to sustain their food consumption thanks to HSNP, despite lean food seasons. This observation was affirmed through traders who confirmed that HSNP households could obtain food on credit more easily than their non-benefiting counterparts.

4.7 QUALITATIVE DATA ON HOUSEHOLD CONDITIONS

In the community-based inquiries, respondents reported that they had observed the following changes (summarised below) in household conditions in the study area over the last 10 years.

Most significant change 1: Gradual shift from grass-thatched/grass-walled houses to zinc roofed, mud - or brick-walled houses: This change was explained to relate to the diminishing access to local building materials because of climate change, as well as because educated or exposed community members sought what they perceived to be better living conditions. While making a contribution to a discussion on the most significant change observed in their area, a male respondent observed: *"The good houses you see around belong to households with employed members. Access to local building materials has become a challenge over time yet houses built with local materials require annual repairs, people are getting tired and moving on. I, for instance, sold ten goats and bought the zinc roof for my house. Now I don't worry about annual repairs anymore".*

Most significant change 2: Improved access to water for domestic and livestock use. This was reported as being a result of mixed efforts from both the County Government and NGOs. In addition to sinking deep boreholes in most settlements, water has been piped into the settlements massively reducing the time taken for a round trip to a water point. One NGO had come up with a water point (borehole) community insurance scheme, where communities pay an annual premium and get their borehole repaired by a contracted service provider on demand when a major breakdown occurs. A female respondent alluded to how the community water point insurance scheme had changed their lives. Before this policy, the community would wait for months to get their borehole repaired by the government water technician. Respondents confirmed that before such an insurance scheme, it would take as long as 6 months to have a water point repaired forcing households to move to other settlements in search of water. The success of this micro-insurance policy affirms the role of

inclusion of the poor in risk insurance/financing in addition to community aspirations on extreme poverty escape.

Most significant change 3: Respondents had two ways of justifying what might be seen as the excessive use of wood (primitive) fuels. First, climate change and the frequent droughts in the study area had left a lot of deadwood around, making it easier for households to freely collect and use this fuel source. But second, due to poverty levels and lack of economic opportunities, most households had resorted to selling firewood and charcoal. A female respondent observed: *"My husband and I are involved in charcoal sales. In a good month, we can sell at least 4 bags at KES 1000 each. I do not like doing this job but there are no other opportunities here. We used to have goats but had to sell them to keep our children in school. Nowadays it is becoming difficult to find trees nearby. I pray that my daughter finds a job after her education to improve our living condition"*.

Further evidence for this observation may be found later in this report in relation to income sources (Section 5.2.1).

4.7 CONCLUSION

To summarize the findings of this chapter, I conclude that the people living in the study area exhibit different forms of poverty as observed through the Multidimensional Poverty Index (MPI) indicators. This made the study population appropriate for further adaptive capacity examination.

In the next chapter, I explore the predictors of household relative capacity by examining, in-depth, the five variables identified in the literature review section: social, human, economic, institutional, and aspirational. I employed various poverty measurement approaches to determine the study household poverty levels before subjecting that through exploratory factor analysis.

CHAPTER 5: RESEARCH RESULTS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter, I present the research results guided by the four hypotheses. I conclude the chapter with a section that draws out lessons learnt from the hypothesis tests. The chapter presents the research results along the key constructs thus economic, social, institutional, human and aspiration deepening the analysis by exploring the sub-indices or proxy indicators for each key variable.

5.2 ECONOMIC CAPITAL: SOURCES AND OBLIGATIONS

This section aligns to hypothesis ***H2: Economic resource factors are positively associated with household adaptive capacity to transition from extreme poverty.*** For the purpose of this study, economic capital including its sources and obligation is examined via ten sub-indices, comprising: diverse income sources; access to credit; loan usage (use of borrowed money); cash savings; usage and linkage to financial institutions; household income trend over three years; household asset base dynamics; household debt to income ratio; access to market information; and food expenditure to total income ratio.

5.2.1 DIVERSE INCOME SOURCES

In this study, I used diverse income sources as a proxy indicator for resilient household economic wellbeing (*shock absorption capacity*). In the study area, household income sources often included crop production, casual labour, livestock production, skilled trade/artisanal work, medium to large-scale businesses, and petty trade including the sale of mats, brooms, firewood and charcoal. To build resilient livelihoods (incomes) and therefore reduce the risk of becoming poor or falling deep into poverty, households in the study area require diverse income sources – and particularly climate-smart ones. The study data indicated that the majority of respondents (96 per cent) had at least one source of income. The findings, however, indicated minimal diversification of income

sources: only 32 per cent reported a second source of income, and 10 per cent a third source.

From the findings (Table 8 below), petty trade was the dominant main source of income, at 58.7 per cent (N=220) of the surveyed households. This comprised the sale of mats, brooms, natural gums, firewood and charcoal. The second most prevalent source of income was casual labour (both on-farm and off-farm), reported by 10.4 per cent (N=66) of the surveyed households. Despite the study area being classified as an agro-pastoral livelihood zone, only 2.9 per cent (N=11) of the sampled households reported livestock production as a third activity; neither did livestock production feature as a first or second source of livelihood. The income source diversification features mapped here indicate that people living in the study area have minimal livelihood diversification in income sources. Although the findings reveal a shift from livestock production to petty trade, the unsustainable harvesting of indigenous forests for firewood and charcoal to trade makes the community more vulnerable to future climate change and variability related shocks (section 5.2.4).

Table 8 Household income sources

		HSNP Beneficiary				HSNP Non Beneficiary				Overall			
		FHH		MHH		FHH		MHH		FHH		MHH	
		N	%	N	%	N	%	N	%	N	%	N	%
Main Source of Income	None	6	12	9	7	3	6	4	3	9	9	13	5
	Crop Prod	0	0	1	1	2	4	2	1	2	2	3	1
	Casual Labour	6	12	20	16	11	22	29	20	17	17	49	18
	Livestock Prod	2	4	2	2	1	2	11	8	3	3	13	5
	Skilled Trade	1	2	6	5	5	10	14	10	6	6	20	7
	Med/Large Business	1	2	7	5	4	8	4	3	5	5	11	4
	Petty Trade	33	67	83	65	23	47	81	56	56	57	164	60
		49	**100**	**128**	**100**	**49**	**100**	**145**	**100**	**98**	**100**	**273**	**100**
Second Source of Income	None	33	75	87	69	26	65	88	65	59	70	175	67
	Crop Prod	0	0	1	1	1	3	4	3	1	1	5	2
	Casual Labour	6	14	13	10	4	10	16	12	10	12	29	11
	Livestock Prod	1	2	4	3	4	10	3	2	5	6	7	3
	Skilled Trade	0	0	5	4	1	3	8	6	1	1	13	5
	Med/Large Business	1	2	1	1	1	3	4	3	2	2	5	2
	Petty Trade	3	7	16	13	3	8	12	9	6	7	28	11
		44	**100**	**127**	**100**	**40**	**100**	**135**	**100**	**84**	**100**	**262**	**100**
Third Source of Income	None	41	98	101	87	29	81	101	86	70	90	202	87
	Crop Prod	0	0	1	1	3	8	5	4	3	4	6	3
	Casual Labour	0	0	2	2	2	6	1	1	2	3	3	1
	Livestock Prod	1	2	4	3	1	3	5	4	2	3	9	4
	Skilled Trade	0	0	0	0	1	3	0	0	1	1	0	0
	Med/Large Business	0	0	1	1	0	0	1	1	0	0	2	1
	Petty Trade	0	0	7	6	0	0	4	3	0	0	11	5
		42	**100**	**116**	**100**	**36**	**100**	**117**	**100**	**78**	**100**	**233**	**100**

Qualitative data from the FGDs revealed declining economic opportunities in the study area, occasioned primarily by the effects of climate change. As one example, shortage of pasture and water, and outbreaks of livestock disease were identified as the key barriers to livestock production leading to massive pastoralist drop-out, hence the overreliance on charcoal and firewood sales. As the access to pasture became more limited, most households shifted from rearing large ruminants (cattle) to small ruminants (sheep and goats). Poor access to animal health services, and a poorly integrated livestock market system, were identified as additional challenges to livestock production. As indicated in Table 9 below, most livestock services, including drug stores and livestock extension services, were not available in the immediate neighbourhood, with the most accessible being at the sub-county level (over 30 kilometres away). A female respondent observed that: *"The county government has not dealt with the livestock market cartels (brokers) in our area. Access to livestock health services is very limited. It is either we are losing our livestock to diseases or there is no value for money in livestock keeping in its entirety".* These sentiments indicated how livestock, a typical income source, had ceased to be a resilient one, raising further the need for income diversification for households to escape poverty.

Table 9 Livestock health services access

	County		***Sub County***		***Location***		***Village***		***Not available***	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Para veterinary	*3*	*.8*	*93*	*24.8*	*14*	*3.7*	*14*	*3.7*	*132*	*35.2*
Drug store	*4*	*1.1*	*118*	*31.5*	*10*	*2.7*	*14*	*3.7*	*95*	*25.3*
Community Animal Health Worker (CAHW)	*0*	*0*	*86*	*22.9*	*0*	*0*	*9*	*2.4*	*137*	*36.5*
Livestock extension services	*5*	*1.3*	*91*	*24.3*	*3*	*.8*	*14*	*3.7*	*132*	*35.2*

I examined livestock herd dynamics over the year preceding the study, to understand the reasons behind changes in herd size. In Table 10 below, the descriptive results indicate that livestock deaths (8.5 per cent for goats), sale to invest in income-generating activities (39.5 per cent for goats), and livestock purchase (5.3 per cent for goats), were the core reasons behind herd size changes.

Table 10 Livestock (herd) size dynamics

	Asset stolen		Livestock died		Income generating activity		Asset reproduced		Asset bought		Given or free		Routine animal sale	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Cattle	0	0	0	0	1	.3	5	1.3	5	1.3	2	.5	0	0
Goats	6	1.6	4	1.1	148	39.5	1	.3	20	5.3	20	5.3	9	2.4
Sheep	0	0	32	8.5	8	2.1	14	3.7	4	1.1	0	0.0	0	0.0
Donkey	0	0	2	.5	2	.5	0	.0	2	.5	0	.0	0	.0
Poultry	0	0	9	2.4	1	.3	2	.5	6	1.6	6	1.6	0	0.0
Camels	2	.5	0	0.0	2	.5	7	1.9	1	.3	8	2.1	2	.5

The study endeavoured to identify the livestock coping strategies applied by households during stress periods (below-normal rains, leading to poor pasture regeneration and restricted water availability). Most respondents (67 per cent) indicated that they migrated to areas with water and pasture, although 22 per cent took a wait-and-see approach. A further seven per cent of respondents indicated that during stress periods they offloaded livestock to the market, keeping the cash to restock later when better rains arrive.

The study findings point towards the community employing a mixture of shock absorption, adaptation or mitigation strategies. Choosing a shock mitigation approach was described as having its own consequences on escape from or descent into poverty. A male respondent explained how in 2015, the area had received poor rains forcing them to move their livestock to neighbouring counties in search of pasture and water. These movements led to hundreds of thousands of livestock converging in the same area leading to disease outbreaks, fast depletion of pasture and water, igniting resource-based conflicts that led to the loss of human lives and livestock. The few remaining animals would later die when they returned to their areas and the rains failed yet again.

5.2.2 ACCESS TO CREDIT

African farmers are repeatedly exposed to income-related shocks (Dercon, 1999). Access to credit is a key aspect of managing the risk of income volatility. Poor households are usually unable to provide collateral to obtain credit from formal lenders, and thus they often rely on expensive local moneylenders or group credit (Krishna, 2004).

For the purpose of this study, I used the access to credit as a proxy indicator for both shock absorption (*absorptive capacity*), and the access to financial capital for business start-up or expansion (both *adaptive and transformative capacities*). Data from the study, (Table 11below) indicates that the majority of households had access to credit, as represented by 70.0 per cent for FHH and 64.9 per cent for MHH.

Table 11Access to credit

		HSNP Beneficiaries				***HSNP Non-beneficiaries***				***OVERALL***			
		FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Do you currently have access to credit?	*Yes*	*26*	*21.0*	*98*	*79.0*	*31*	*24.2*	*97*	*75.8*	*124*	*70*	*128*	*65*
	No	*24*	*44.4*	*30*	*55.6*	*19*	*27.5*	*50*	*72.5*	*54*	*30*	*69*	*35*
										178	***100***	***197***	***100***

The main sources of credit were relatives (6.7 per cent), government-devolved, interest-free loans (the Youth Fund, Uwezo Fund and Women's Fund at 24.3 per cent), local savings and lending groups (1.3 per cent) and informal lenders (1.3 per cent). Women were particularly engaged in either self-organized or NGO-supported local savings and lending groups. The county officer in charge of the devolved loans facilities confirmed that there was massive default, not just within the study area but across the whole county. The same officer observed that the high loan defaults related to either low financial literacy among borrowers leading to loan mismanagement and thus repayment challenges, or – in certain instances – the devolved funds becoming politicized with political leaders using their custodian role of a particular fund to gain political mileage and in the process eroding borrowers' commitment to repay. In relation to the limited economic opportunities, a male youth respondent observed that youth knew of the government's devolved funds, but added that the main challenge was on how to use the money (loan) in areas where opportunities for investment were very limited or non-existent.

Table 12 Sources of credit

	YES	*NO*

	N	Percent	N	Percent
Money borrowed from relatives	*25*	*6.7*	*350*	*93.3*
Money borrowed from internal lending	*5*	*1.3*	*370*	*98.7*
Money borrowed from money lender	*5*	*1.3*	*370*	*98.7*
Money borrowed from government	*91*	*24.3*	*284*	*75.7*
Money borrowed from NGO grants	*0*	*0.0*	*375*	*100.0*
Money borrowed from religious institution	*1*	*.3*	*374*	*99.7*
Money borrowed from religious MHHIi	*0*	*0.0*	*375*	*100.0*
Money borrowed from religious banks	*2*	*.5*	*373*	*99.5*

The results in Table 12 above indicate that most households had debts of either between KES 1001-2000, (29 per cent for FHH and 18 per cent for MHH), or KES 0-1000 (20 per cent and 25 per cent for FHH and MHH respectively). Most of the debts had been in place for around six months (Table 13), (40 per cent for FHH and 35 per cent for MHH). Follow-up during the FGDs revealed that indebted households were very unlikely to be able to access any new form of credit because their vulnerability levels had grown, and defaults were common. The indebted households interviewed spoke of worse economic times and poor demand for their local product range (charcoal, firewood, brooms or mats) as the main reasons they had fallen into debt. However, they all remained optimistic for a better future. One indebted female respondent stated: *"I took a loan of KES 6000 (USD 60 equivalent) from our savings group seven months ago. My daughter was reporting back to school and I needed cash for school fees. The demand for mats and brooms has been very low. I only managed to pay back KES 1500. For five months now I have been a defaulter. I will pay once the business has recovered. The local savings and lending group enables us to deal with uncertainties for instance sickness or death and poor rain performance"*.

In Section 5.1.3 (loan usage) below, I examined how the borrowed money was used and how this usage can propel poverty escape or descent: an expansion of the observations made by other respondents on the potential for loan mismanagement and the risk of pushing households further into debt.

Table 13Household debt levels

		HSNP Beneficiaries				HSNP Non-beneficiaries				OVERALL			
		FHH		MHH		FHH		MHH		FHH		MHH	
		N	%	N	%	N	%	N	%	N	%	N	%
How much debt does the household have?	0-1000	14	40.0	21	60.0	13	25.5	38	74.5	35	20	51	25
	1001-2000	3	5.8	49	94.2	7	19.4	29	80.6	52	29	36	18
	2001-3000	2	50.0	2	50.0	3	33.3	6	66.7	4	2	9	5
	3001-4000	9	56.3	7	43.8	0	0.0	0	0.0	16	9	0	0
	4001-5000	3	25.0	9	75.0	0	0.0	0	0.0	12	7	0	0
	5001-6000	3	75.0	1	25.0	6	42.9	8	57.1	4	2	14	7
	6001-7000	0	0.0	0	0.0	6	23.1	20	76.9	0	0	26	13
	7001-8000	2	16.7	10	83.3	3	30.0	7	70.0	12	7	10	5
	8001-9000	8	32.0	17	68.0	1	33.3	2	66.7	25	14	3	2
	9001-10000	3	50.0	3	50.0	3	50.0	3	50.0	6	3	6	3
	10001-11000	0	0.0	3	100.0	1	33.3	2	66.7	3	2	3	2
	11001-12000	2	66.7	1	33.3	2	16.7	10	83.3	3	2	12	6
	12001-13000	0	0.0	3	100.0	2	16.7	10	83.3	3	2	12	6
	13001-14000	1	50.0	1	50.0	3	50.0	3	50.0	1	1	6	3
	14001-15000	0	0.0	1	100.0	0	0.0	9	100.0	1	1	9	5
										178	**100**	**197**	100

Table 14 Household debt age

		HSNP Beneficiaries					HSNP Non-beneficiaries				OVERALL		
			FHH		MHH		FHH		MHH		FHH		MHH
		N	%	N	%	N	%	N	%	N	%	N	%
How long (months) has the HH had this debt?	1	5	20.0	20	80.0	4	20.0	16	80.0	25	14	20	10
	2	10	35.7	18	64.3	6	24.0	19	76.0	28	15	25	12
	3	6	27.3	16	72.7	7	36.8	12	63.2	22	12	19	10
	4	3	33.3	6	66.7	5	35.7	9	64.3	10	9	14	7
	5	2	50.0	2	50.0	0	0.0	8	100.0	4	2	8	4
	6	23	31.9	49	68.1	21	30.4	48	69.6	72	40	69	35
	7	0	0.0	0	0.0	0	0.0	9	100.0	0	0	9	5
	8	0	0.0	2	100.0	4	26.7	11	73.3	2	1	15	8
	9	0	0.0	2	100.0	0	0.0	3	100.0	2	1	3	1
	10	0	0.0	3	100.0	1	16.7	5	83.3	3	1	6	3
	12	0	0.0	6	100.0	1	12.5	7	87.5	6	3	8	4
	14	1	50.0	1	50.0	0	0.0	0	0.0	1	1	0	0
	24	0	0.0	3	100.0	1	100.0	0	0.0	3	1	1	1
										178	**100**	**197**	100

5.2.3 HOUSEHOLD LOAN USAGE PRACTICES

For the purpose of this study, I used loan (borrowed money) usage to investigate household spending of borrowed cash for productive or non-productive purposes, as earlier observed by respondents. In a community categorised as highly impoverished, productive usage means spending money on education, health access, the purchase of productive assets, or the start-up or expansion of a business. Non-productive usage includes buying food and/or non-food items (NFI), and social expenses. From the study results, (Table 15 below), food purchase emerged as the major use of borrowed money for both FHH and MHH respondents (97 per cent and 94 per cent respectively). School fees and medical care were both represented by 2 per cent. Buying NFI and supporting a business were reported at one per cent for MNF. No respondents reported using borrowed money for burial expenses, bride prices, hiring labour, purchasing agricultural inputs or any other activity: all represented by 0 per cent. The features of loan usage mapped here indicate that households living in the study area generally do not use borrowed money for productive investments but rather for non-productive purposes.

Using borrowed money mainly for food purchases is an indicator of a food-poor community. During the FGDs, HSNP beneficiaries reported taking food on credit from traders and paying for it when their social cash entitlements were received. This compounds the observation that most cash goes into food purchase. One female respondent observed: *"When my food stocks run out before the next cash transfer, I get food on credit from my preferred trader. Sometimes, by the time we receive the HSNP cash, I just take the whole tranche to the trader and get more credit based on the next transfer"*. On a positive note, beneficiaries seem to have effectively transformed their social cash into a safety net embedded into the social capital of their community. This suggests beneficiaries are likely to fare better than non-beneficiaries in the event of shocks in the study area, including the recurrent droughts – broadly explaining the policy need to cushion the poor during a shock for them to remain on the pathways out of poverty.

Table 15 Loan usage

		HSNP Beneficiaries				HSNP Non-beneficiaries				OVERALL			
		FHH		MHH		FHH		MHH		FHH		MHH	
		N	%	N	%	N	%	N	%	N	%	N	%
How much debt does the household have?	0-1000	14	40.0	21	60.0	13	25.5	38	74.5	35	20	51	25
	1001-2000	3	5.8	49	94.2	7	19.4	29	80.6	52	29	36	18
	2001-3000	2	50.0	2	50.0	3	33.3	6	66.7	4	2	9	5
	3001-4000	9	56.3	7	43.8	0	0.0	0	0.0	16	9	0	0
	4001-5000	3	25.0	9	75.0	0	0.0	0	0.0	12	7	0	0
	5001-6000	3	75.0	1	25.0	6	42.9	8	57.1	4	2	14	7
	6001-7000	0	0.0	0	0.0	6	23.1	20	76.9	0	0	26	13
	7001-8000	2	16.7	10	83.3	3	30.0	7	70.0	12	7	10	5
	8001-9000	8	32.0	17	68.0	1	33.3	2	66.7	25	14	3	2
	9001-10000	3	50.0	3	50.0	3	50.0	3	50.0	6	3	6	3
	10001-11000	0	0.0	3	100.0	1	33.3	2	66.7	3	2	3	2
	11001-12000	2	66.7	1	33.3	2	16.7	10	83.3	3	2	12	6
	12001-13000	0	0.0	3	100.0	2	16.7	10	83.3	3	2	12	6
	13001-14000	1	50.0	1	50.0	3	50.0	3	50.0	1	1	6	3
	14001-15000	0	0.0	1	100.0	0	0.0	9	100.0	1	1	9	5
										178	**100**	**197**	100

5.2.4 BORROWING AND USE DECISIONS

This section explores whether there is an association between who decision-maker is on borrowing and the use to which the borrowed money is put. To establish this, a Pearson correlation analysis was conducted. The analysis returned a positive correlation coefficient at 0.544 (p value=.036<p=0.05), indicating a positive relationship between who made the decision to borrow and who made the decision to spend, as demonstrated in Table 16below. Thus for loans to effectively facilitate the establishment of poverty escape pathways (through investment in productive activities or assets) existing financial institutions including government agents need to educate those borrowing on financial literacy.

Table 16 Borrowing and Use Correlation

Correlations			
		Who made the borrowing decision?	*Who made the use decision?*
Who made the decision to borrow from?	*Pearson Correlation*	*1*	*.544**
	Sig. (2-tailed)		*.036*
	N	*16*	*15*
Who makes the decision about use of money borrowed?	*Pearson Correlation*	*.544**	*1*
	Sig. (2-tailed)	*.036*	
	N	*15*	*15*
**. Correlation is significant at the 0.05 level (2-tailed).*			

5.2.5 CASH SAVINGS: USAGE AND LINKAGES TO FINANCIAL INSTITUTIONS

I looked at the usage of cash savings as a proxy for absorptive capacity (enabling households to absorb and mitigate the effect of shocks and therefore not risk falling further into poverty), and as an opportunity for households to transform their livelihoods (transformative capacity) through access to capital for business startup and or expansion.

In Table 17 below, most respondents holding savings reported they intended to use the savings on non–livestock investment, (64 per cent and 42 per cent of FHH and MHH respondents respectively). Use during emergencies was reported at 20 per cent and 24 per cent of FHH and MHH respondents respectively. Buying livestock emerges as the third use of the savings, at 15 per cent and 32 per cent for FHH and MHH respondents respectively.

These findings on savings usage – particularly on non-livestock investment and shock absorption in an area prone to climatic and economic shocks – is an indication of forward-thinking by study respondents, and of deliberate autonomous actions to transform livelihood. The challenge, however, is the low capacity for business development and management capacities in households, as noted by Respondent 5, and the limited access to viable business opportunities observed by Respondent 6. In section 5.1.3, the study highlighted the challenges to livestock production pushing people to seek more resilient livelihood options.

Table 17 Cash Saving – Access and Usage

		HSNP Beneficiaries				***HSNP Non Beneficiaries***				***Overall***			
		FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
What is the primary purpose of the saving?	*For emergency*	*11*	*30.6*	*25*	*69.4*	*9*	*18.0*	*41*	*82.0*	*20*	*20*	*66*	*24*
	To buy livestock	*8*	*12.7*	*55*	*87.3*	*7*	*17.1*	*34*	*82.9*	*15*	*15*	*89*	*32*
	For non-livestock investment	*31*	*39.7*	*47*	*60.3*	*33*	*32.4*	*69*	*67.6*	*64*	*64*	*116*	*42*
	Others	*0*	*0.0*	*1*	*100.0*	*1*	*25.0*	*3*	*75.0*	*1*	*1*	*4*	*1*
										100	***100***	***275***	*100*

I sought to understand how linked the respondents were to financial institutions by mapping where those who had savings held them. Linkages to financial services providers would imply likely access to low-interest formal savings and loans products, and potentially an opportunity to build a financial literacy base at the household level. Most respondents who had savings held them with a bank (71 per cent for both FHH and MHH) or with savings groups (24 per cent for both FHH and MHH). Two per cent and three per cent for FHH and MHH respondents respectively held their saving at home. Savings held at micro-finance institutions (MHHIs) were represented by two per cent for both FHH and MHH.

During FGDs, I established that all households in the study area had been registered under the HSNP and issued with a bank account. Interviews with bank officers responsible for payment of the social cash revealed that, despite many respondents holding bank accounts, most accounts were dormant, with none accessing the loan facilities offered by the same bank. These bank

accounts were activated seasonally for humanitarian response by the government and or its development partners to shocks including drought and market failure. The general features of financial inclusion mapped here indicate linkages with financial institutions initiated externally, rather than through the spontaneous actions of households. During FGDs, respondents had mixed reactions to bank account ownership. Most respondents referred to the account as “the safety net programme’s account”, although 15 per cent of respondents reported using the account to hold savings for future emergencies, or as a means of accumulating funds to start a business. According to Krishna (2004), bank accounts can give those pastoralists who hold them a means to destock before a drought, securely keep the proceeds in a bank account and restock after the shock. However, this was not the case in the study area.

Table 18 Financial Services Access

		HSNP Beneficiaries				***HSNP Non-beneficiaries***				***Overall***			
		FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Where are the savings held?	***Bank***	*29*	*71*	*92*	*71*	*32*	*71*	*102*	*71*	*61*	*71*	*194*	*71*
	MHHI	*1*	*2*	*3*	*2*	*1*	*2*	*3*	*2*	*2*	*2*	*6*	*2*
	Saving group	*10*	*24*	*31*	*24*	*11*	*24*	*34*	*24*	*21*	*24*	*65*	*24*
	Home	*1*	*2*	*4*	*3*	*1*	*2*	*4*	*3*	*2*	*2*	*8*	*3*
		41	***100***	***130***	***100***	***45***	***100***	***144***	***99***	***86***	***100***	***274***	***100***

5.2.6 HOUSEHOLD ASSET DYNAMICS OVER THE PAST YEAR

Pastoralist communities typically hold their savings in the form of livestock rather than cash (Freudenberger, 1998, Krishna et al., 2004, Kristjason et al., 2004). In this section, the study moves beyond cash saving (Section 5.1.4) to include a review of the dynamics related to other productive household assets over the past year, as a proxy for establishing the household’s non-cash-based savings stability. For the purpose of this study, I use livestock, productive assets and household goods to evaluate holding trends over a period of one year prior to the study. The general features the study population mapped here indicate that household assets have been in overall decline over the past year, for instance livestock holding was found to have dropped by six points, productive assets by nine points, and household goods by six points.

Table 19: Assets Paired Sample T-Test

Paired Samples Statistics					
		Mean	*N*	*Std. Deviation*	*Std. Error Mean*
Livestock	*Number owned today*	*10.11*	*375*	*43.062*	*2.224*
	Number owned one year ago	*16.62*	*375*	*62.624*	*3.234*
Productive Assets	*Number owned today*	*.21*	*375*	*2.218*	*.115*
	Number owned one year ago	*.12*	*375*	*1.179*	*.061*
Household Goods	*Number owned today*	*.34*	*375*	*.904*	*.047*
	Number owned one year ago	*.28*	*375*	*.839*	*.043*
Pair 4	*Number owned today*	*.17*	*375*	*.391*	*.020*
	Number owned one year ago	*.13*	*375*	*.379*	*.020*

A number of studies have pointed to the importance of livestock losses in explaining households' decline into poverty (Freudenberger, 1998; Krishna et al., 2004). General observations about livestock holding in the study area over the past year indicate that households there are sliding further into poverty, despite the fact that the study was undertaken following two years of normal rains (2016/17) which provided improved access to pasture and water, potentially facilitating the positive growth of livestock units.

Close observation of both groups revealed a largely homogenous community (sharing, in this case, high poverty rates). However, Table 20 indicates that non-HSNP-benefiting households had larger livestock ownership than their HNSP counterparts. HSNP is designed as a safety net, cushioning beneficiaries from shocks and protecting them from productive asset decapitalization. So through HSNP, benefiting households had been able either to acquire livestock or protect their livestock holding base, allowing them to edge closer to their counterparts in terms of the asset base. Table 20 also indicates no significant differences in productive asset holdings, although the HSNP beneficiaries were found to own more labour intensive tools, including axes, sickle, hoes, spades and machetes: tools critical for the livelihood practised by the poorest households.

Table 20Asset Ownership by HSNP Status

	Outcome	*HSNP households*	*Non HSNP households*	*Observations*
		%	*%*	*N*
Livestock Ownership	*Any livestock*	*66.9*	*73.0*	*375*
	Goats / sheep	*63.7*	*73.4*	*375*
	Camels	*28.4*	*31.9*	*375*
	Cattle	*16.7*	*22.3*	*375*
Productive Assets Ownership	*Animal cart*	*6.5*	*7.8*	*375*
	Water drum	*14.7*	*0.5*	*375*
	Plough	*0.1*	*0*	*375*
	Wheelbarrow	*4.3*	*4.6*	*375*
	Sickle	*2.2*	*0.5*	*375*
	Pick-axe	*6.6*	*10.2*	*375*
	Axe	*61.3*	*60*	*375*
	Hoe	*16.6*	*10.6*	*375*
	Spade	*16.8*	*13.4*	*375*
	Machete	*47.8*	*46*	*375*

5.2.7 THREE-YEAR HOUSEHOLD INCOME TRENDS

This study employed income trends over the past three years as a proxy indicator of poverty descent (*decreasing income levels*), or escape (*gradually increasing income levels*) and/or chronic household income poverty (*slowed income levels*). The income trends mapped here indicate that household incomes had gradually decreased over the past three years, as reported by 38 per cent for both FHH and MHH respondents. Respondents reporting that their household's income had remained the same over the past three years were at 36 per cent and 39 per cent for FHH and MHH respondents respectively. Those stating that their incomes had increased over the same period are represented by 25 per cent for FHH and 23 per cent for MHH respondents respectively. The findings suggest that the households most likely to be trapped in income poverty were characterized by decreasing/slowed income levels during a period of consumer price index increases.

Data from the qualitative community inquiries and the poverty categorization processes mirror the household survey findings. The majority of respondents pointed out during FGDs that generally their household incomes had either gradually decreased or stayed the same. Respondents cited frequent climatic

shocks (poor rains), limited economic opportunities, and a lack of employment opportunities for the skilled and educated members of their households.

Table 21 Income trends over the past 3 years

		HSNP Beneficiaries				HSNP Non Beneficiaries				Overall			
		FHH		MHH		FHH		MHH		FHH		MHH	
		N	%	N	%	N	%	N	%	N	%	N	%
Has HH income increased, decreased or constant over the last 3 years?	Increased	13	26	35	28	12	24	26	18	25	25	61	23
	Decreased	16	32	36	29	22	45	67	46	38	38	103	38
	Remained Same	21	42	54	43	15	31	52	36	36	36	106	39
	Total	50	100	125	100	49	100	145	100	99	100	270	100

The finding that household incomes were declining was confirmed by a Change Analysis study (Save the Children & Food Economy Group, 2016), using the Household Economy Approach (HEA[i]). The study reported that total household incomes for the poor in the study area (Turkana Central), had remained static for the past five years: an indicator of chronic poverty.

5.2.8 FOOD EXPENDITURE TO TOTAL INCOME RATIO

For the purpose of this study, I used the food expenditure to total income ratio to estimate households' food poverty status. Food typically represents between 56 and 78 per cent of consumption among rural households, and 56 to 74 per cent among those in urban areas (Banerjee, A. V., & Duflo, E., 2007). Households spending 85 per cent of their total income on food are characterized as food-poor. They rely more on market purchases, which are prone to frequent economic shocks and stresses. Food poverty was a construct of interest to this study, and the study area presented an excellent population group within which to explore this. The study findings indicate that households in the study area spent between 85 per cent and 90 per cent of their total income on food alone. The features mapped here indicate that households living in the study area had minimal disposal income for non-food related expenses, including investment in developing the other capitals critical for poverty escape such as human capital (education, health and skills acquisition) and social capital (including membership in fee-based social networks).

5.2.9 ACCESS TO MARKET INFORMATION

For the purpose of this study, I look at a mobile phone and/or radio ownership as a proxy indicator for access to market information. Mobile phones have been studied as contributing to poverty reduction and improved rural livelihoods in different ways, including increasing people's ability to deal with emergencies, reducing travel costs, strengthening social networks, increasing productivity through access to market prices, and increasing earning opportunities via the sale of mobile phone services, (Molony, 2008; Gordon, 2007; Samuel, et al.2005). Market information is especially critical, as it influences a household's decisions on what, where, to whom, in what form, and at what price to sell. Accessing market information assists poor smallholders to get value for their money.

Table 22 below indicates that mobile phones were the commonest means of accessing market information, as represented by 23.2 per cent of respondents, followed by radio at 16.5 per cent. This means 76.8 per cent of the respondents did not use a mobile phone to access market information, while 83.5 per cent did not use a radio. Only 39.5 per cent of respondents were able to utilise access to market information through modern communication technology.

For this reason, the study sought to explore what other avenues of access to information might be available to the study respondents, and this is discussed in Sections 5.1.10 and 5.1.11 below.

Table 22 Radio and Mobile Phone Ownership

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Owns a Mobile Phone?	*No*	*288*	*76.8*	*76.8*	*76.8*
	Yes	*87*	*23.2*	*23.2*	*100.0*
	Total	*375*	*100.0*	*100.0*	
Owns a radio?	*No*	*313*	*83.5*	*83.5*	*83.5*
	Yes	*62*	*16.5*	*16.5*	*100.0*
	Total	*375*	*100.0*	*100.0*	

5.2.10 RURAL DEVELOPMENT AGENCIES AS SOURCES OF INFORMATION

The findings in Table 23 below indicate that rural development agencies provide critical information (albeit in diverse amounts) to respondents. This information covers business, investment, market and borrowing opportunities, child nutrition and health information, animal health/husbandry and grazing conditions and livestock, disease threats or epidemics, current livestock market prices in the area, and rainfall/weather forecasts for the coming season, as well as conflict or other restrictions on access to grazing. The findings mapped here indicate the relevance of rural development agencies as a source of information that cuts across the four sets of capitals of interest to this study; economic, social, and human. The existence of and access to information from rural development agencies further reflects the institutional capital base as critical in establishing an enabling environment for the other capitals (social, human and economic) to influence households' escape from poverty.

Table 23 Information Access from Rural Development Agencies

	Beneficiaries				***Non-Beneficiaries***				***Overall***			
	(FHH)		*(MHH)*		*FHH)*		*(MHH)*		*(FHH)*		*(MHH)*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Rainfall prospects / weather prospects for coming season	*0*	*3*	*1*	*3*	*0*	*3*	*1*	*3*	*0*	*0*	*2*	*4*
Water available and prices in local boreholes, shallow wells etc.	*1*	*5*	*2*	*4*	*1*	*5*	*2*	*4*	*2*	*11*	*4*	*7*
Methods for animal health/husbandry	*1*	*6*	*2*	*6*	*1*	*7*	*3*	*6*	*2*	*11*	*5*	*9*
Livestock disease threats or epidemics	*1*	*6*	*2*	*5*	*1*	*6*	*2*	*5*	*2*	*11*	*4*	*7*
Current market prices for live animals in the area	*1*	*5*	*2*	*4*	*1*	*5*	*2*	*4*	*2*	*11*	*4*	*7*
Market prices for animal products	*0*	*4*	*1*	*4*	*0*	*4*	*2*	*4*	*0*	*0*	*3*	*5*
Grazing conditions in nearby areas	*1*	*6*	*2*	*6*	*1*	*7*	*3*	*6*	*2*	*11*	*5*	*9*
Conflict or other restrictions on access to grazing	*0*	*3*	*1*	*3*	*0*	*3*	*1*	*3*	*0*	*0*	*2*	*4*
Business and investment opportunities	*1*	*10*	*4*	*10*	*1*	*10*	*4*	*10*	*2*	*11*	*8*	*14*
Opportunities for borrowing money	*1*	*7*	*3*	*7*	*1*	*8*	*3*	*7*	*2*	*11*	*6*	*11*
Market prices of the food that you buy	*1*	*10*	*4*	*10*	*1*	*10*	*4*	*10*	*2*	*11*	*8*	*14*
Child nutrition and health information	*1*	*7*	*3*	*7*	*1*	*8*	*3*	*7*	*2*	*11*	*6*	*11*
									18	***100***	***57***	***100***

5.2.11 GOVERNMENT OFFICIALS AS SOURCES OF INFORMATION

People in the study area generally rely heavily on government officials (50 per cent for the FHH and 67 per cent for MHH respectively) for information access. Government officials were a critical source of information concerning business, investment and loan opportunities, grazing conditions and livestock disease threats, child nutrition and health, weather prospects for the coming season and market prices for food and livestock. Mdoe (2003) observes that the public sector institutional context can also be neutral, or blocking rather than enabling, for households constructing their pathways out of poverty.

While referring to the low literacy levels across the study area as a challenge in the use of the information provided for poverty escape, a key informant with an international NGO observed: "*As NGOs, we suffice the people living in this area (study area) with a lot of information that they could use to improve their wellbeing. However, notice the low literacy levels across the area. As a county, we are rated as both the poorest county and the county with the highest illiteracy level. It would take a generation change to transform this area and that is why we have been advocating for the county government to prioritize scholarship programmes for the bright and needy students in the hope that they can in future put an end to intergenerational poverty witnessed in this county"* (Respondent 8).

Qualitative data from the FGDs indicate that – despite mobile phones being a vibrant means of information access – barriers including a lack of handset ownership, network coverage, and lack of electricity create major obstacles to accessing early warnings in time. Being unable to access timely early warning information on both climatic and economic shocks was heavily blamed for the loss of productive assets. Respondents felt that the community would find localized solutions if early warnings were received on time. One male respondent stated: *"If we access timely forecast that next rains are going to be poor (meaning poor pasture and water access locally) we dispatch elders to negotiate access to pasture and water from our neighbouring communities while at the same time doing intelligence on disease outbreaks and potential conflict*

zones. When such critical information reaches us 2 months late we end up losing a lot of livestock".

Table 24 Information Accessed From Government Officials

	HSNP Beneficiaries				HSNP Non-Beneficiaries				Overall			
	FHH		MHH		FHH		MHH		FHH		MHH	
	N	%	N	%	N	%	N	%	N	%	N	%
Rainfall prospects / weather prospects for coming season	1	5	2	4	1	5	2	4	2	11	4	7
Water available and prices in local boreholes, shallow wells etc.	0	1	0	1	0	1	0	1	0	9	0	0
Methods for animal health/husbandry	0	4	1	4	0	4	2	4	0	0	3	5
Livestock disease threats or epidemics	1	8	3	8	1	8	3	8	2	11	6	11
Current market prices for live animals in the area	0	2	1	2	0	2	1	2	0	0	2	4
Market prices for animal products	0	0	0	0	-	0	-	0	0	0	0	0
Grazing conditions in nearby areas	0	2	1	2	0	2	1	2	0	0	2	4
Conflict or other restrictions on access to grazing	0	0	0	0	-	0	-	0	0	0	0	0
Business and investment opportunities	0	3	1	3	0	3	1	3	0	0	2	4
Opportunities for borrowing money	1	9	4	9	1	9	4	9	2	11	8	14
Market prices of the food that you buy	1	10	4	10	0	3	1	3	1	6	5	9
Child nutrition and health information	1	7	3	7	1	8	3	7	2	11	6	11
									9	***50***	38	***67***

5.2.12 HOUSEHOLD DEBT TO INCOME RATIO

The debt behaviour of the poor and especially of welfare grant recipients has been found to be characterised by informal borrowing from relatives, neighbours or friends, as well as credit facilities at the local store or from informal sellers of goods (Collins, 2007). Households turn to those closest to them for help, with these sources expecting them to return the favour sometime in the future (Mashigo, 2006).

Debt can be an indicator of either progress or impending economic doom. People sometimes keep one another in the poverty trap, focusing on borrowing rather than saving (Mashigo, 2006). In this section, I explore the influence of household debt levels on efforts to escape poverty. The debt index was determined using the most-indebted respondent. The findings from the study

indicate that most respondents (76 per cent) had zero or negligible debt. The respondents who were relatively indebted were the more prosperous: business people and local merchants. These observations concur with the observation under Table 11b that households' indebtedness ranged between KES 1001-2000. From the findings mapped here, the low debt levels could be interpreted as households living in the study area being either risk-averse (shying away from debt as a mechanism for productive investment that could positively influence their poverty escape) or possessing low aspiration levels (they are comfortable with their *status quo*). However, it is equally possible these households are simply unbankable, as represented in Figure 3.

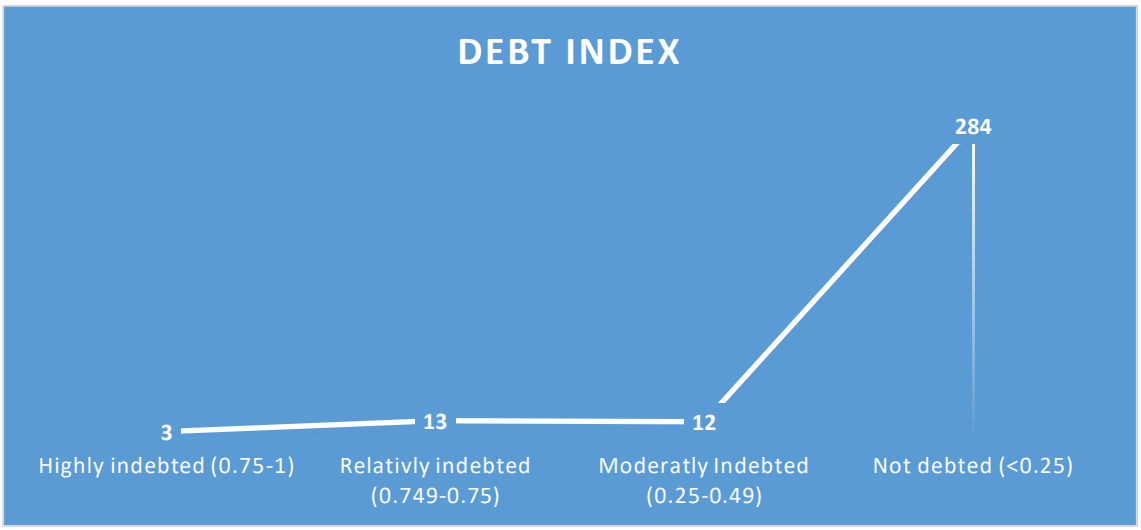

Figure 3 Respondents Debt Index

5.2.13 RESPONDENTS' BANKABILITY (INDEX)

This study considered a respondent as bankable if he/she had the ability to secure a loan from any financial service provider: a proxy indicator for higher adaptive capacity. The study established that only 2.3 per cent (N=3) of respondents who did not fall under the highly indebted category were bankable. However, 74.4 per cent (N=96) respondents were close to being bankable (moderately bankable), with 23.2 per cent (N=30) completely un-bankable. All the highly indebted respondents fell into the un-bankable cadre. This observation can be related to Respondent 7's observation that although the majority of respondents held a bank account through HSNP, these accounts remained dormant unless a cash-based intervention was initiated during an emergency. It also concurs with the observed low-income diversification among

households and minimal disposable non-food related income-expenditure recorded under Section 5.0.6.

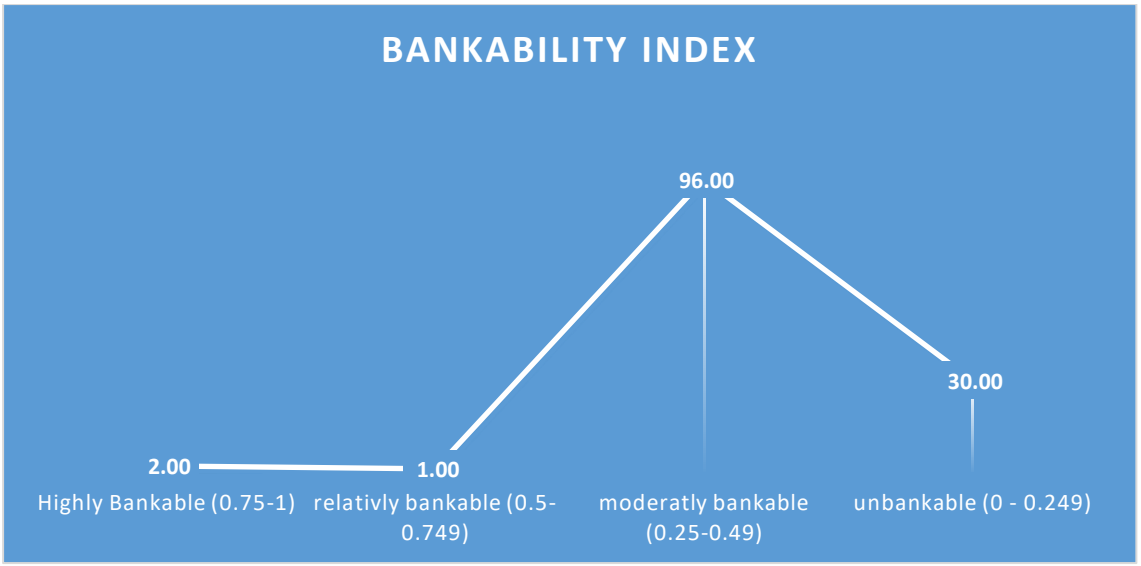

Figure 4 Wilcoxon Signed Rank Test on Income vs Debt in USD

The study used the Wilcoxon Signed Rank Test on income and debt to test the relationship between household income and level of indebtedness. The findings revealed a statistically significant difference between respondents' income and debt. The study findings revealed 173 negative ranks (respondents with more debt than income) and 180 positive ranks (respondents having more income than debt). Only 16 respondents had equal amounts of income and debt. This was consonant with the general features of the study area, indicating minimal local access to economic opportunities.

Table 25 Wilcoxon Signed Rank Test on Household Income and Debt

		Ranks		
		N	*Mean Rank*	***Sum of Ranks***
Respondents Debt - Respondents Income	*Negative Ranks*	*173[a]*	*93.99*	***16260.50***
	Positive Ranks	*180[b]*	*256.78*	***46220.50***
	Ties	*16[c]*		
	Total	*369*		

a. Respondents Debt < Respondents Income

b. Respondents Debt > Respondents Income

c. Respondents Debt = Respondents Income

5.3 HUMAN CAPITAL: SKILL SETS, CONFIDENCE AND ASPIRATIONS

This section aligns to hypothesis ***H3: Human capital resource factors are positively associated with household adaptive capacity to transition from extreme poverty.***

For the purpose of this study, human capital was examined through five sub-indices, comprising education of household head; highest education level of a household member; household dependency ratio; ability to recover from economic and climatic shocks; and training in business development.

5.3.1 EDUCATION OF HOUSEHOLD HEAD

For the purpose of this study, I used the highest education level attained by the household head as a proxy for higher earning potential and more alternative earning opportunities, all of which make household heads better able to improve the welfare of their households (Muyanga et al., 2007).

The majority of heads of households as mapped here had no formal education, represented by 56 per cent for FHH and 57 per cent for MHH. Heads of household who had attained secondary education stood at 19 per cent for both the FHH and MHH. Respondents who had primary education rank next, at 10 per cent for FHH and 11 per cent for MHH. Pre-primary education attainment was reported at 10 per cent for both FHH and MHH respondents. Heads of households who had attained tertiary education were the least numerous, at five per cent and four per cent for FHH and MHH respondents respectively.

Table 26 Education level of household head

	Beneficiaries				Non-Beneficiaries				Overall			
	FHH		MHH		FHH		MHH		FHH		MHH	
	N	%	N	%	N	%	N	%	N	%	N	%
No Formal Ed	23	58	74	57	26	57	82	57	49	56	156	57
Pre-Primary Ed	4	10	13	10	5	10	15	10	9	10	28	10
Primary Ed	4	11	14	11	5	11	15	10	9	10	29	11
Secondary Ed	8	19	25	19	9	19	27	19	17	19	52	19
Tertiary Ed	2	4	5	4	2	4	5	4	4	5	10	4
									88	**100**	**275**	**100**

The high levels of illiteracy mapped in this section indicated limited earning potential by these heads of household, further compounding the observation made on income diversification in Section 5.0.1. Illiteracy is also a barrier to accessing critical information (early warning of shocks, market information, health, education and business skills development) and diffusing it to the rest of the household. All of these can contribute to a household's further descent into poverty.

5.3.2 HIGHEST EDUCATION OF A HOUSEHOLD MEMBER

I used the highest education attained by a household member as a proxy for higher-income earning potential and more alternative income-earning opportunities. More educated household members are better able to improve the quality of their respective households' welfare (Muyanga et al., 2007).

The data indicated that the most prevalent educational attainment for a household member was secondary education, represented by 19 per cent of both FHH and MHH. Most household members had no formal education: 56 per cent for FHH and 57 per cent for MHH respondents: an observation supported by Respondent 8 as he observes the importance of human capital investment (education) as a tool for intergenerational poverty escape.

Table 27 Highest education of a household member

	Beneficiaries				*Non-Beneficiaries*				*Overall*			
	FHH		***MHH***		***FHH***		***MHH***		***FHH***		***MHH***	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
No Formal	*23*	*58*	*74*	*57*	*26*	*57*	*82*	*57*	*49*	*56*	*156*	*57*
Pre-Primary	*4*	*10*	*13*	*10*	*5*	*10*	*15*	*10*	*9*	*10*	*28*	*10*
Primary	*4*	*11*	*14*	*11*	*5*	*11*	*15*	*10*	*9*	*10*	*29*	*11*
Secondary	*8*	*19*	*25*	*19*	*9*	*19*	*27*	*19*	*17*	*19*	*52*	*19*
Tertiary	*2*	*4*	*5*	*4*	*2*	*4*	*5*	*4*	*4*	*5*	*10*	*4*
									88	***100***	***275***	***100***

5.3.3 HOUSEHOLD DEPENDENCY RATIO

The dependency ratio relates to the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old) in a household. A high dependency ratio has a positive correlation with structural poverty and implies that only a small proportion of people are engaged in income-generating activities. It has also been associated with higher fertility rates, lower education, poorer health of household members and an intergenerational transfer of poverty (Bloom, Canning, & Sevilla, 2003).

In Table 28 below, the majority of households exhibit a dependency ratio of 0.25 (<6 dependants), represented by seven per cent of the FHH respondents and eight per cent of MHH. A ratio of 0 .5 (7-11 dependants) follows, at two per cent for both FHH and MHH. Finally, comes a ratio of 0.75 (>12<18 dependants), at zero per cent for FHH and one per cent for MHH.

Kenya's overall national dependency ratio is 0.873, with the rural areas (including the study area) having a dependency ratio of 1.008, and urban areas having a ratio of 0.63 (Njonjo, 2013). The dependency ratio of these study respondents falls below the national, but exceeds, the rural, dependency ratio: a further indicator of minimal pooled household income, suggesting a further risk of households being held in chronic poverty. The lack of economic opportunities in the study area was a major contributor to the high poverty rates, as discussed in Section 5.3.

Table 28 Household dependency ratio

	HNSP Beneficiaries				***HSNP Non-Beneficiaries***				***Overall***			
	FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
0	*0*	*0*	*1*	*1*	*0*	*0*	*1*	*1*	*0*	*0*	*2*	*1*
0.25	*3*	*8*	*10*	*8*	*3*	*7*	*11*	*8*	*6*	*7*	*21*	*8*
0.5	*1*	*3*	*3*	*2*	*1*	*2*	*3*	*2*	*2*	*2*	*6*	*2*
0.75	*0*	*0*	*1*	*1*	*0*	*0*	*1*	*1*	*0*	*0*	*2*	*1*

5.3.4 ABILITY TO RECOVER FROM ECONOMIC AND CLIMATIC SHOCKS

A household's perceived ability to recover from economic and climatic shocks was employed here as a proxy indicator for self-confidence in overcoming vulnerability (risk of becoming poor) and also a household's level of preparedness to deal with future vulnerabilities (risks of becoming poorer).

In Table 29, most informants reported having been unable to recover from either climatic or economic shocks: 71 per cent for FHH and 74 per cent for MHH. Those who reported being able to recover from shocks were represented by 28 per cent for FHH and 25 per cent for MHH. Informants who reported not having been affected by the shocks for both FHH and MHH were represented by 1 per cent: an indication that the people living in the study area had minimal vulnerability reduction (reduction of the risk of being poor) capacities, as further indicated in Table 30 below.

Table 29 Perceived ability to recover

		HSNP Beneficiaries				***HSNP Non Beneficiaries***				***Overall***			
		FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Perceived Recovery from Previous Known Shock	*No*	*31*	*67*	*98*	*82*	*29*	*60*	*89*	*67*	*247*	*71*	*187*	*74*
	Yes	*15*	*33*	*21*	*18*	*18*	*38*	*43*	*32*	*97*	*28*	*64*	*25*
	Not Affected	*0*	*0*	*1*	*0*	*1*	*2*	*1*	*1*	*3*	*1*	*2*	*1*
		46	***100***	***120***	***100***	***48***	***100***	***133***	***1***	***347***	***100***	***253***	***100***

Table 30 Self-Reported Asset Recovery

	Unable to Recover		*Able to recover*	
	N	*Per cent*	*N*	*Per cent*
Livestock	*244*	*65.1*	*36*	*9.6*
Productive assets	*77*	*20.5*	*13*	*3.5*
Household goods	*69*	*18.4*	*28*	*7.5*
Consumer durables	*72*	*19.2*	*12*	*3.2*

5.3.5 RECOVERY STRATEGIES EMPLOYED

The study findings demonstrate households in the study area employing multiple recovery strategies, with the majority reporting having received assistance from relatives. The majority of respondents (68.9 per cent N=222) noted that relatives came to their rescue during stressful times. Because the most severe problems related to food, the second measure reported was simply eating less. Respondents who owned assets were able to partially offset problems by selling these. But selling at a time when demand was low brought them equally low returns, and that, in itself, could lead to the emergence of further economic shocks. The dependency ratio observed under section 5.0.12 and the reported growing vulnerability both mean that reliance on relatives as a poverty escape strategy would have minimal effects for households living in the study area.

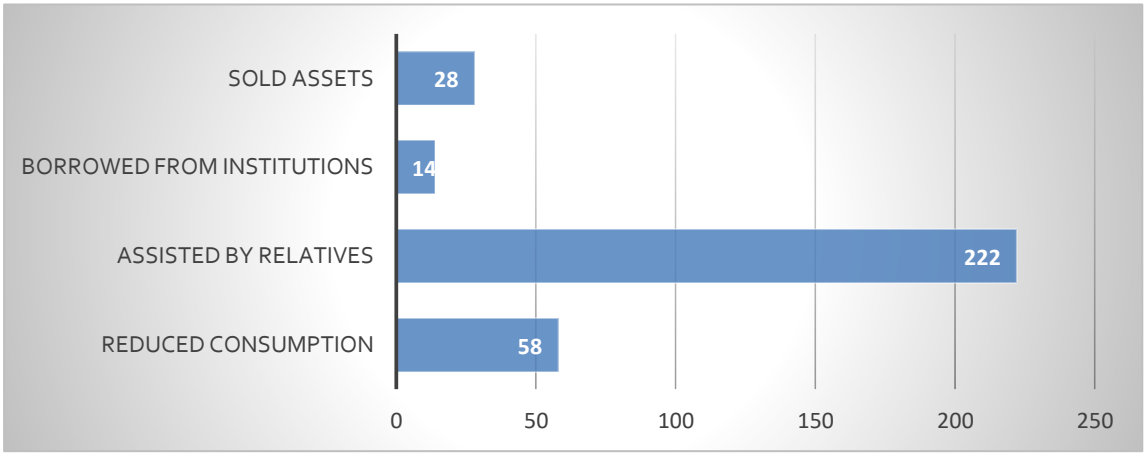

Figure 5 Recovery strategies employed at the household level

5.3.6 IMPEDIMENTS TO RECOVERY

In this section, I explore the barriers to recovery from either climatic or economic shocks, using this as a proxy to estimate a household's adaptive and absorptive capacity: the ability to bounce back rather than descend into poverty. The results indicate that a household's inability to access productive assets (39 per cent) and its lack of access to safety nets (35 per cent) were the main impediments to full recovery. Households that had lost their main income source (13 per cent) identified that as their barrier to recovery.

5.3.7 TRAINING IN BUSINESS DEVELOPMENT

For the purpose of this study, I used training in business development as a proxy indicator for household potential for income diversification through identifying, developing and managing feasible business opportunities and thus expanding the household's income base and stabilizing it against economic shocks. Table 31 indicates that the majority of informants had not received any business development and management training: 85 per cent of FHH and 87 per cent of MHH. Only 15 per cent of FHH and 13 per cent of MHH had received such training. However, more respondents had been trained in business development (15 per cent for FHH and 13 per cent for MHH) than in livestock skills: only nine per cent of both FHH and MHH had received training in livestock production. The low levels of business skills base observed here compounds the observation made by Respondents 3 and 4 on the minimal uptake of low-interest loans, as well as the insistence that there was limited economic opportunities in the study area (Respondent 4). In terms of supporting poverty escape pathways, the features mapped here indicated that for households living in the study area to effectively diversify their incomes (pathway out of poverty) through income-generating activities, business skills training was a prerequisite.

Table 31 Business skills training

		HSNP Beneficiaries				HSNP Non Beneficiaries				Overall			
		FHH		MNF		FHH		MNF		FHH		MNF	
		N	%	N	%	N	%	N	%	N	%	N	%
Trained in business development & management	No	44	90	112	89	41	85	113	87	41	85	113	87
	Yes	5	10	14	11	7	15	17	13	7	15	17	13
		49	**100**	**126**	**100**	**48**	**100**	**130**	**100**	**48**	**100**	**130**	**100**
Trained in livestock production?	No	38	100	118	98	29	91	101	91	29	91	101	91
	Yes	0	0	2	2	3	9	10	9	3	9	10	9
		38	**100**	**120**	**100**	**32**	**100**	**111**	**100**	**32**	**100**	**111**	**100**

From the study results mapped above, the alternative hypothesis that the more the human capital resource factors, the better the chances of household adaptive capacity for transition from extreme poverty is accepted.

5.4 INSTITUTIONAL CAPITAL: CRITICAL BASIC SERVICES PLUS ACCESS

This section aligns to hypothesis ***H4: Institutional resource factors are positively associated with household adaptive capacity to transition from extreme poverty.***

I looked at access to basic services, including roads, schools, health facilities and water, as a proxy indicator for institutional capital. While markets and the government play distinct roles in the supply of such infrastructure, all the elements of infrastructure may usefully be considered part of the environment in which people live, with some characteristics of a local public good, rather than as something that can be purchased piecemeal by individuals.

In Kenya, the availability of physical infrastructures – such as electricity, tap water, and even basic sanitation – to the poor varies widely between different geographical areas of residence (geographical poverty traps). The study area (Turkana) is rated as amongst the most infrastructure-deprived areas in the country.

5.4.1 DISTANCE TO NEAREST MARKET, SCHOOL, MAIN ROAD OR HEALTH CENTRE

I looked at the distances to the nearest market, school, main road and health centre. Distance to market was used as a proxy for access to market, something closely correlated to accessing a better market price for locally produced goods (in the study area, these are livestock, charcoal/firewood, construction materials, mats and brooms). Distance to market is additionally used as a proxy for access to a cost-friendly and diverse range of production inputs, and to lower prices for household consumables. The distance to school is used as a proxy for access to education services. Education is recognised as a key determinant of human development through enhanced opportunities and earnings. Unequal access to education has long-term consequences including the intergenerational persistence of poverty.

Table 32 Distance to nearest market, school, main road, and health centre

	Minimum	*Maximum*	*Mean*	*Std. Deviation*
Distance to nearest access road?	*.00*	*25.00*	*2.4447*	***3.15592***
Distance to nearest market?	*.00*	*132.00*	*4.8441*	***9.18281***
Distance to the nearest health facility?	*.00*	*67.00*	*4.2968*	***10.26317***
Distance to nearest school?	*.00*	*30.00*	*1.5524*	***2.77062***

The features mapped here indicate that people living in the study area have good access to basic services, based on the mean distances to institutions. What these findings do not reveal is the quality of the services offered at those institutions. As noted elsewhere in this report, respondents confirmed that the county government had invested heavily in infrastructure, but that the services from such institutions were very limited.

5.4.2 ACCESS TO SAFE WATER

Access to safe drinking water is critical for the health outcomes of individuals and households. Inequalities in access to improved sources of water (piped water, rain-harvested water, borehole water and water from protected wells) indicate severe deprivation, through reliance on unimproved water sources such

as water from rivers or streams, dams, ponds, lakes, unprotected wells, unprotected springs, water vendors and other sources.

Table 33 shows that the majority of respondents accessed water from unimproved sources (springs/streams and rivers), represented by 56 per cent both for FHH and MHH. Public piped kiosks followed at 42 per cent for FHH and 40 per cent for MHH. Other water sources ranked third at two per cent for FHH and three per cent for MHH. Earth pans/pan dams ranked fourth at zero per cent for FHH and one per cent for MHH.

The county government was found to have prioritized access to water. In one of the interviews, a respondent observed: *"As a county government we have over the last four years heavily invested in infrastructure comprising; roads, schools, market infrastructure, health centres, water and road networks. The effects of these investments on poverty escape at the household level will not be immediate. We [county government] have been vilified a lot that we have done nothing with all the billions allocated to us by the central government. We [county government] have only been in office for 4 years. What we have achieved in the last 4 years is evident more so on institutional [infrastructural] development. Our county was among [those] marginalized by the central government for many years until the new constitution [2010] was enacted"*.

A review of the county government's 2016/17 Fiscal Plan reveals a 37 per cent budget allocation for infrastructure development: a clear indicator of how deprived the study area remains in terms of institutional capital, and consequently of an enabling environment for household poverty escape. However, from this amount and Respondent 9's statement, it may be concluded that the county government maintains a commitment to enhancing access to basic services through infrastructural development.

Table 33 Access to Safe Water

	HSNP Beneficiaries				***HSNP Non-Beneficiaries***				***Overall***			
	FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH)*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
spring/stream/river	*23*	*56*	*73*	*56*	*25*	*55*	*81*	*56*	*48*	*56*	*154*	*56*
Public Piped Kiosk	*17*	*41*	*53*	*41*	*19*	*40*	*59*	*41*	*36*	*42*	*112*	*40*
Earth Pans/Pan Dams	*0*	*1*	*1*	*1*	*0*	*1*	*1*	*1*	*0*	*0*	*2*	*1*
Others	*1*	*3*	*4*	*3*	*1*	*3*	*5*	*3*	*2*	*2*	*9*	*3*
									86	***100***	***277***	***100***

5.5 SOCIAL CAPITAL: AFFILIATIONS AND POTENTIALS

This section aligns to hypothesis ***H1: Social resource factors are positively associated with household adaptive capacity to transition from extreme poverty.***

Narayan and Pritchett (1999) posit that social network capital effectively serves as a substitute for real capital in mediating economic mobility. For the purposes of this study, I adopt the findings of Barrett et al (2004) whose studies in Burkina Faso found that on average a household with 1.8 memberships or affiliations had a 7.36 per cent lower probability of being poor than a household with no such memberships.

5.5.1 HOUSEHOLD HEAD IS A MEMBER OF A SOCIAL GROUP OR NETWORK

The study sought to understand the type and nature of the social groups and/or networks to which households belonged. The main single group affiliation related to informal savings and lending groups, at 33 and 32 per cent for the FHH and MHH respectively. Village savings and loans associations came in second at 25 per cent for both FHH and MHH. Trading groups were ranked third, at 17 per cent for FHH and 19 per cent for MHH. Farmers' cooperative societies followed, at 8 per cent for both FHH and MHH. These were followed by joint purchasing groups for inputs and bulk transporting arrangements, both at 8 per cent for FHH and 5 per cent for MHH. Those who banded together to process produce represented 3 per cent of MHH. The study did not record any households with membership in livestock production-related groups, despite the study area being a pastoralist community. These findings indicate that generally (despite HNSP beneficiary status) households living in the study area are members of at least one formal or informal social network. They indicate that female-led households were more likely to be in social networks than their male-headed equivalents. This observation was compounded through qualitative data that implied that female-headed households worked harder to "catch up or fill in the void" unlike the male-headed households.

Table 34 Household membership in social networks

	HSNP Beneficiaries				HSNP Non Beneficiaries				Overall			
	FHH		MHH		FHH		MHH		FHH		MHH	
	N	%	N	%	N	%	N	%	N	%	N	%
Farmers' cooperative society	1	8	3	8	1	8	3	8	2	8	6	8
Informal saving and lending group	4	31	12	31	4	32	13	31	8	33	25	32
Village savings loans association	3	25	9	24	3	25	10	24	6	25	19	25
Livestock production group	0	1	0	1	0	1	0	1	0	0	0	0
Joint purchase of inputs	1	6	2	5	1	6	2	5	2	8	4	5
Bulk transporting	1	6	2	5	1	6	2	5	2	8	4	5
Sorting produce	0	3	1	3	0	3	1	3	0	0	2	3
Grading produce	0	1	0	1	0	1	0	1	0	0	0	0
Processing produce	0	3	1	3	0	3	1	3	0	0	2	3
Trading	2	18	7	18	2	19	8	18	4	17	15	19
									24	100	77	100

5.5.2 DIVERSITY OF HOUSEHOLD SOCIAL NETWORKS

For the purpose of this study, I used the diversity of household's social networks as a proxy for resilient social capital (*absorptive capacity*). The study assumed that households with more than one membership in functional social networks had a better capacity to absorb shocks compared to those with none or only one. The study further assumed that social networks, too, could be either functional or non-functional. If one social network failed, a household with multiple memberships had the option to switch to another, mitigating the negative impact of the shock on the household's poverty escape pathways. As Table 35 shows, membership of <2 groups is the most common, represented by 73 per cent for both FHH and MHH. Membership of 2-4 groups follows at 23 per cent; membership of 5-7 groups at three per cent; and membership of>7 groups at one per cent for MHH respondents. From the study findings, it appears that households in the study area do not have diverse household social networks, reducing their social capital base and compounding their risk of vulnerability (poverty descent).

Table 35 Diversity of Household Social Networks

	HSNP Beneficiaries				HSNP Non-Beneficiaries				Overall			
	FHH		MHH		FHH		MHH		FHH		MHH	
	N	%	N	%	N	%	N	%	N	%	N	%
Members < 2 groups	22	73	71	73	25	74	147	73	47	73	218	73
Members in 2-4 Groups	7	23	22	23	8	24	46	23	15	23	68	23
Members in 5-7 Groups	1	3	3	3	1	3	6	3	2	3	9	3
Membership > 7 groups	0	0	1	1	0	0	3	1	0	0	4	1
	30	**100**	**97**	**100**	**34**	**100**	**202**	**100**	**64**	**100**	**299**	**100**

5.5.3 RICHNESS OF CONTACTS

For the purpose of this study, I used richness of contacts and/or the groups to which a household has links as a proxy indicator of the potential for a household to tap (piggyback) on the group's resource base in improving its own wellbeing (poverty escape). The study assumed that high connectedness or linkages to individuals in power or authority could, for instance, influence access to paid employment and/or access to other human capital- or economic-related opportunities that would remain inaccessible without membership to the "correct" networks. A female respondent, discussing richness of contacts and how it relates to poverty escape in her area, observed: *"The county government keeps on advertising jobs but when we apply we never even get invited for interviews. Later we come to learn that some young man or lady has been recruited courtesy of their relatives' or friends' connections in the county. It would mean that youth without connections at the county will remain unemployed and as such poor"*.

As shown in Table 36, almost half of the respondents had contacts only with an impoverished contacts base: 48 per cent for the FHH and 49 per cent for the MHH respectively**.** This would mean that households in the study area have minimal opportunities to mine their contacts as a strategy for escaping from poverty.

Table 36 Richness of contact

	HSNP Beneficiaries				HSNP Non Beneficiaries				Overall			
	FHH		MHH		FHH		MHH		FHH		MHH	
	N	%	N	%	N	%	N	%	N	%	N	%
Our contacts have poor access to resources	13	36	40	36	14	36	44	36	27	36	84	36
Contacts have similar level of access to resources	17	49	54	49	19	48	60	48	36	48	114	49
Contacts have medium level access to resources	5	14	15	14	5	13	17	14	10	13	32	14
Contacts have very high access level to resources	1	2	2	2	1	2	2	2	2	3	4	2
									75	**100**	**234**	**100**

5.5.4 COMPOSITION OF SOCIAL NETWORKS

I used the composition of social networks as a proxy indicator for the potential of social networks to bring benefits to participating individuals and directly enhance wellbeing. For instance, networks have been found to be helpful in getting better-paid jobs, or promotions, enhancing access to credit, agricultural inputs or other factors that can enhance the productivity of a household enterprise (Putham, 1993).

From the study findings (Table 37), family and friends immediately outside the household (the lowest social network level) formed the largest component of all households' social networks, as represented by 64 per cent of households for FHH and 65 per cent for MHH. Only 4 per cent of respondents reported having a more influential social network including figures such as traditional leaders or local administrators.

From the social networks mapped here, people living in the study area may be considered as needing to deepen their social capital outside current formations of family and immediate friends. This observation is based on the role respondents described social capital as playing in ensuring households do not fall deeper into poverty (Respondents 3, 4, 7 and 10). Given the importance of community-based decisions about how natural resources are used sustainably, the role of social networks (for instance informal saving groups) in enhancing household shock absorption capacities, as well as the connectedness accrued

from such networks in terms of access to opportunities currently seen as out of reach by most households, interventions that enhance social cohesion and strengthen social capital will be key for poverty escape.

The general features of the study respondents' social capital mapped here indicate that people in the study area possessed widely varying social capital resources, with the households' own actions and aspirations playing a critical role. These findings concur with observations made in previous studies (Isham, 1999; Naayan & Pritchett, 1997; Fatchamps, 1997; and Grootaert, 1996) on the role of social capital in the diffusion and adoption of technical knowledge and increasing access to credit. Based on the insights offered by the qualitative data, I find social capital to be important for households in the study area seeking to escape poverty.

Table 37 Composition of households' social networks

	HSNP Beneficiaries				*HSNP Non-Beneficiaries*				*Overall*			
	FHH		*MHH*		*FHH*		*MHH*		*FHH*		*MHH*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
No social Network	*1*	*3%*	*2*	*2%*	*1*	*2%*	*4*	*2%*	*2*	*2%*	*6*	*2%*
Family and Friends outside the household	*25*	*64%*	*78*	*65%*	*27*	*64%*	*162*	*65%*	*52*	*64%*	*240*	*65%*
1 Plus traditional leadership within the village	*12*	*31%*	*37*	*31%*	*13*	*31%*	*76*	*31%*	*25*	*31%*	*113*	*31%*
1,2,3 plus lower formal Government	*1*	*3%*	*3*	*3%*	*1*	*2%*	*6*	*2%*	*2*	*2%*	*9*	*2%*
	39	*100%*	*120*	*100%*	*42*	*100%*	*248*	*100%*	*81*	*100%*	*368*	*100%*

5.6 ASPIRATIONS: THE 'CALLING' TO ESCAPE POVERTY

This section aligns to hypothesis ***H5: Aspirations to being non-poor are positively associated with household adaptive capacity to transition from extreme poverty.***

This study sought to investigate the psychological and individual efforts made to transition from extreme poverty. Aspirations are examined using three indicators: the absence of fatalism; belief in the individual power to enact change; and exposure to alternatives to the status quo. These are combined into an overall index using principal component analysis, with understanding and texture added via the qualitative data obtained from study respondents.

5.6.1 ASPIRATIONS ESTIMATION USING PRINCIPAL COMPONENT ANALYSIS

Table 38 below provides the means to develop an index of "aspirations to escape poverty" for both HSNP beneficiary and non-beneficiary groups. The three index components detailed above were selected based on the assumption that they are all positively associated with the "calling" to escape poverty. Factor extraction was conducted to deduce a Common Factor model for each component. The respondents were classified by their HSNP beneficiary status, with each parameter in the sub-variable being computed for the various categories of respondents. The extent to which respondents were affected by underlying common factors was computed and patterns of correlation identified. HSNP non-beneficiaries were affected by the common underlying factors related to the absence of fatalism (69.12) and exposure to alternatives to the status quo (83.4). By contrast, HSNP beneficiaries were more affected by the common underlying factors related to a sense of individual power. The findings seem to imply that HSNP-type social benefits could enhance a sense of confidence (individual agency).

Table 38 Aspirations "Calling" to Escape Poverty

		HSNP Beneficiaries	*HSNP Non-Beneficiaries*
Absence of fatalism.	*Each person is primarily responsible for his success or failure*	*64.2*	*79.4*
	To be successful above all, one needs to work very hard	*62.8*	*79.4*
	My experience in my life has been that what is going to happen will happen.	*61.8*	*60.5*
	It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	*59.7*	*60.4*
	Cumulative Extracted percent	***62.148***	***69.12***
Sense of individual power.	*Are you willing to move somewhere else to improve your life?*	*32.7*	*40.6*
	I feel like what happens in my life is mostly determined by powerful peoples.	*80.7*	*74.8*
	My life is chiefly controlled by other powerful people.	*74.2*	*55.4*
	I can mostly determine what will happen in my life.	*88.6*	*67.8*
	When I get what, I want, it is usually because I worked hard for it.	*72.1*	*75.8*
	My life is determined by my own actions.	*78.4*	*50.6*
	Cumulative Extracted per cent	***71.11***	***60.82***
Exposure to alternatives to the status quo	*Do you communicate regularly with at least one person outside the village?*	*70.9*	*70.0*
	During the past week, have you engaged in any economic activities with members of other clans? For example, farming, trading, employment, borrowing or lending money.	*65.0*	*70.0*
	How many times in the past month have you got together with people to have food or drinks, either in their home or in a public place?	*87.2*	*91.9*
	How many times in the past month have you attended a church/mosque or other religious services?	*88.9*	*94.3*
	In the last year, how many times have you stayed more than 2 days outside this village?	*88.9*	*90.5*
	Cumulative Extracted per cent	***80.2***	***83.4***

Table 38 shows an absence of significant differences between study respondents based on their HSNP beneficiary status. This observation relates to the observed homogeneity of status among respondents: most households in the study area, irrespective of their beneficiary status, live below the poverty line. However, pastoralists have been found more likely to display a stronger belief in the individual's power to enact change (Frankenberger et al., 2014).

Figure 6 below shows the aspirations and confidence to adapt indices of respondents, based on their HSNP beneficiary status. The indices for these sub-components of the overall aspirations and confidence to escape poverty index are constructed to allow cross-comparison. Each index ranges from 0 to 100. Aspirations and confidence to escape poverty were found to be extremely high. The exceptionally high scores recorded for the index “exposure to alternatives to the status quo” in this study is treated as an indicator of a desire to experience livelihood opportunities exercised elsewhere, given the prevailing absence of economic opportunities in the study area.

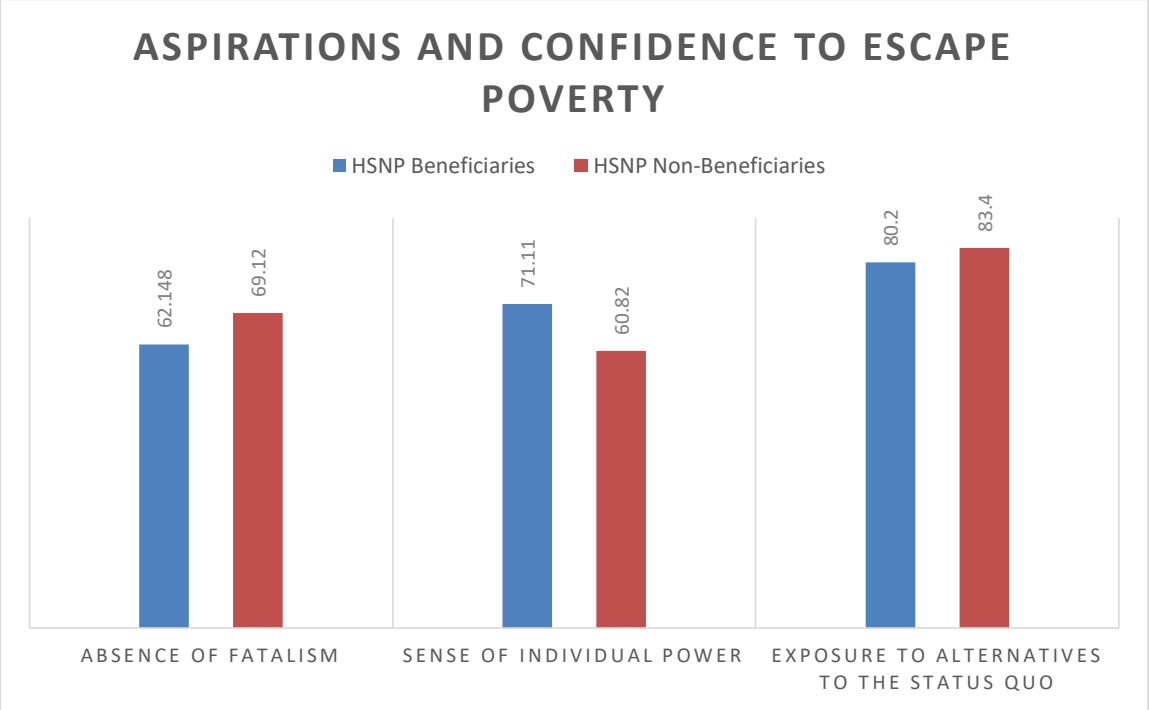

Figure 6 Aspirations and confidence to escape poverty

5.6.2 DESCRIPTIVE RESULTS FOR ASPIRATIONS

From the study findings (Tables 39 and 40), respondents overall demonstrated the strongest level of agreement with the statements “It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune” (32 per cent), “My experience in my life has been that what is going to happen will happen.” (30.9 per cent), “I can mostly determine what will happen in my life.” (41.1 per cent), and “When I get what I want, It is usually because I worked hard for it” (41.1 per cent). Statements with the lowest level of agreement include “My life is chiefly controlled by other powerful people.” (21.3

per cent), and, “I feel like what happens in my life is mostly determined by powerful people” (21.6 per cent). From the findings, it is concluded that people living in the study area have higher levels of self-confidence. The strong belief in fate/luck seems likely to lead them not to plan well in advance to deal with shocks hence distracting their poverty escape trajectories.

Table 39 Descriptive Results for Aspirations

	Strongly Disagree	Disagree Slightly		Disagree		Slightly Agree		Agree		Strongly agree		
ABSENCE OF FATALISM	N	percent	N	percent	N	percent	N	percent	N	percent	N	percent
My experience in my life has been that what is going to happen will happen.	23	6.1	116	30.9	99	26.4	66	17.6	54	14.4	14	3.7
It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	25	6.7	65	17.3	41	10.9	68	18.1	120	32.0	52	13.9
INDIVIDUAL POWER												
I feel like what happens in my life is mostly determined by powerful peoples.	81	21.6	149	39.7	87	23.2	25	6.7	25	6.7	4	1.1
My life is chiefly controlled by other powerful people.	80	21.3	140	37.3	70	18.7	7	1.9	42	11.2	34	9.1
I can mostly determine what will happen in my life.	3	.8	26	6.9	20	5.3	43	11.5	126	33.6	154	41.1
When I get what I want, it is usually because I worked hard for it.	3	.8	42	11.2	11	2.9	16	4.3	145	38.7	154	41.1
My life is determined by my own actions.	4	1.1	88	23.5	88	23.5	8	2.1	58	15.5	118	31.5
Most people are basically honest.	62	16.5	153	40.8	54	14.4	41	10.9	43	11.5	16	4.3
Most people can be trusted.	39	10.4	131	34.9	52	13.9	63	16.8	74	19.7	13	3.5
I trust my neighbours to look after my house if I am away.	3	0.8	55	14.7	21	5.6	114	30.4	153	40.8	26	6.9

Table 40 Descriptive Results for Aspirations

EXPOSURE TO ALTERNATIVES TO THE STATUS QUO	*Yes*		*No*		*Don't know*	
	N	*percent*	*N*	*percent*	*N*	*percent*
Are you willing to move somewhere else to improve your life?	*257*	*68.5*	*112*	*29.9*	*4*	*1.1*
Do you agree that one should always follow the advice of the elders?	*313*	*83.5*	*52*	*13.9*	*1*	*.3*
Do you communicate regularly with at least one person outside the village?	*301*	*80.3*	*39*	*10.4*	*18*	*4.8*
During the past week, have you engaged in any economic activities with members of other clans? For example, farming, trading, employment, borrowing or lending money.	*188*	*50.1*	*154*	*41.1*	*7*	*1.9*

The main findings with respect to aspirations are summarised below:

Main finding 1: With regard to aspiration statements measuring the level of agreement among respondents on the absence of fatalism**,** respondents agreed most with those statements relating to shock- (fortune-) responsive planning.

Main finding 2: With regard to aspiration statements measuring the level of agreement among respondents on individual power, respondents agreed most with those statements indicating that whatever happened in their lives was a result of their own actions.

Main finding 3: With regard to aspiration statements measuring the level of agreement among respondents on exposure to alternatives, respondents agreed most with statements related to the role of leadership (elders) and regular communication and engagement (via economic activities) with the world outside their immediate sphere.

5.6.3 QUALITATIVE DATA ON ASPIRATIONS TO ESCAPE POVERTY

During FGD on the concept of aspirations and poverty escape, a community leader observed: "*Twenty years ago we owned many animals but all have been wiped out by disease, droughts and theft – the young generation is disinterested in our traditional way of life. The humanitarian support that comes in is so little and comes in most cases too late to change our lives. If it doesn't rain this year we will cross into Ugandan or Ethiopian and access pasture and water for our animals".* Taken literally, this statement is an accurate reflection of the low index on the absence of fatalism observed across the study population".

A female respondent spoke as follows on "sense of own power": *"When I deny myself new clothes or good food and pay school fees for my daughter I know what I am doing. I am not going to allow my children to live the kind of life I have lived. If the worst comes to the worst I will migrate to down Kenya (referring to the neighbouring maize and wheat-producing zone) and start life afresh. I am not giving up on my dream for a better life".* This statement relates very closely with the high scores observed on the index "sense of own power".

In another FGD, a religious leader observed: "M*ost of the successful families in our community today were not anywhere near to riches (herd size) when we were growing up. They owe their success to exposure through travels outside our area. They identified business opportunities and went for them. They knew where and how to access credit or sold part of their livestock herd without fear of the risks involved. Their children are more educated, exposed to the outside world and either employed or supporting the family business. With such exposures, what can bring such families down?".*

This statement concurs with the observations made on the index "exposure to alternatives to status quo" and the earlier discussion of the limited opportunities found in the study area (Section 5.15).

5.7 PREDICTORS OF CAPACITY

For the purpose of this study, sustainable escape from extreme poverty was determined by a combination of four main variables namely economic capital, human capital, institutional resources and social resources. All households lived under the same conditions (the same environment and the same resources) but some thrived better than others. Sub-indices were obtained using exploratory factor analysis. Both diverse income sources and income trends over the past 3 years were the main contributors of economic capitals, being scored at 31 and15 per cent respectively. However, access to credit had a low score of 12 per cent. The education level of the head of the household was a substantial determinant of human capital, accounting for 46 per cent, followed by the education level of a household member. The household's perceived ability to recover from shocks accounted for 15 per cent, with training in business development accounting for 7 per cent. The other variable employed to determine the sustainable transition from poverty was institutional resources, determined by an array of parameters measuring access to resources ranging from schools, markets and hospitals to main roads. The most prominent contributor was access to safe water at 36 per cent, mainly because the study area was arid, with an over-reliance on pastoralism.

To authenticate the household's social resources, the study also sought to establish household contact with informal safety nets, the composition of its social networks, and the number of groups in which a household was an active member. The parameter that scored highest was the composition of social networks, which accounted for 36 per cent of the entire variable, with the number of groups of which the household head was a member accounting for 27 per cent.

Table 41 Predictors of Capacity

	Indices	Sub-Indices	Unweighted Score	Weighted Score
1	***Economic capitals (27 percent)***	*Diverse income sources*	*0.47*	*31 percent*
		Loans usage	*0.09*	*6 percent*
		Access to Credit	*0.19*	*12 percent*
		Savings	*0.16*	*10 percent*
		Income trend over the last 3 Years	*0.23*	*15 percent*
		Food Expenditure to Total Income Ration	*0.00*	*12.5 percent*
		Access to Market Information	*0.40*	*26 percent*
		Debt to Income Ratio	*0.00*	*0 percent*
2	***Human capitals (35 per cent)***	*Education level of Head of HH*	*0.90*	*46 percent*
		Highest education by HH member	*0.44*	*22 percent*
		Dependency ratio	*0.20*	*10 percent*
		Household's perceived ability (confidence) to recover from shocks	*0.30*	*15 percent*
		Training in Business Development	*0.14*	*7 percent*
3	***Institutional resources (20 per cent)***	*Distance to Nearest Market*	*0.07*	*6 percent*
		Distance to Nearest School	*0.24*	*21 percent*
		Distance to Nearest Main Rd	*0.15*	*14 percent*
		Distance to Nearest Health Centre	*0.26*	*23 percent*
		Access to Safe Water	*0.41*	*36 percent*
4	***Social resources (17 per cent)***	*HH is Member of a Social Group/Network*	*0.19*	*21 percent*
		Richness of Contact	*0.15*	*15 percent*
		Composition of Social Network	*0.34*	*36 percent*
		Number of groups HH is an active member.	*0.26*	*27 percent*

In this study, R represented the multiple correlation coefficients between all the predicting variables and sustainable graduation. R was determined by four variables: economic capitals, human capitals, institutional resources and social resources. The study introduced three moderating parameters: variables M1-M3 (M1=Absence of fatalism, M2=Individual power and M3=Exposure to alternatives) to establish the effect these variables had on the relationship. The moderating variables were introduced at intervals starting with M1, to ascertain

which variable would produce the highest positive change on the dependent variable. Since its value ranges between 0 and 1, an R of .616 showed that the predictors in the model were moderately correlated to the dependent variable. Therefore, the specification of the factors to be included in the model was appropriate. The gradual introduction of the moderating sub-variable saw a rise in the correlation from 0.616 to 0.625, indicating that the moderating variable influenced the independent variable.

R squared measures how much variability in the dependent variable the predictors account for. The R^2 in this model was found to be 0.379, which means that the four predictors could explain about 39 per cent of the variation in poverty severity. Since R^2 values above 30 per cent are considered high, this model, therefore, demonstrated reasonable explanatory power for the variation in the dependent variable. In other words, by using the four independent variables the study could predict, to a moderate degree, the effect of poverty severity. The remaining unexplained variation could be attributed partly to other factors not specified in the model and partly to the error term in the regression equation. Adjusted R^2 provided information on how well a model can be generalized in the population. If this model had been derived from the population rather than a sample, it would have accounted for approximately 37 per cent of the variance in the dependent variable: close to 0.2 per cent less than what the model explains. The standard error of the estimate (also known as the standard deviation of Y about the regression line) was 0.70. Since its value was small, this means that the observed Y-values in this study did not differ greatly from the values on the regression line.

The ANOVA table below (42) - was used on the assumption that there is no linear relationship in the population between the dependent variable and the independent variables. It was used to evaluate another assumption: that all the population partial regression coefficients are 0, and that the population value for multiple R^2 is 0. This study found that all linear relationships were significant since all the P-Values were below 0.05.

Table 42 Determinants of Adaptive Capacities

Coefficients						
Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	*Std. Error*	*Beta*		
1	*(Constant)*	*-.736*	*.105*		*-6.991*	*.000*
	Institutional Resources	*.039*	*.035*	*.047*	*1.131*	*.259*
	Human Capitals	*.170*	*.030*	*.257*	*5.739*	*.000*
	Social Resources	*.381*	*.085*	*.185*	*4.477*	*.000*
	Economic Capitals	*.140*	*.015*	*.418*	*9.204*	*.000*
2	*(Constant)*	*-.721*	*.107*		*-6.736*	*.000*
	Institutional Resources	*.040*	*.035*	*.047*	*1.142*	*.254*
	Human Capitals	*.202*	*.050*	*.306*	*4.016*	*.000*
	Social Resources	*.409*	*.092*	*.199*	*4.437*	*.000*
	Economic Capitals	*.155*	*.025*	*.465*	*6.218*	*.000*
	Absence of fatalism	*-.210*	*.266*	*-.088*	*-.789*	*.001*
3	*(Constant)*	*-.488*	*.148*		*-3.295*	*.001*
	Institutional Resources	*.030*	*.035*	*.036*	*.858*	*.391*
	Human Capitals	*.199*	*.050*	*.300*	*3.962*	*.000*
	Social Resources	*.382*	*.093*	*.185*	*4.128*	*.000*
	Economic Capitals	*.149*	*.025*	*.448*	*5.985*	*.000*
	Absence of fatalism	*-.212*	*.264*	*-.089*	*-.801*	*.004*
	Sense of individual power	*-.063*	*.028*	*-.096*	*-2.263*	*.024*
4	*(Constant)*	*-.209*	*.270*		*-.776*	*.439*
	Institutional Resources	*.036*	*.035*	*.043*	*1.034*	*.302*
	Human Capitals	*.197*	*.050*	*.298*	*3.931*	*.000*
	Social Resources	*.378*	*.092*	*.183*	*4.089*	*.000*
	Economic Capitals	*.150*	*.025*	*.450*	*6.025*	*.000*
	Absence of fatalism	*-.184*	*.265*	*-.078*	*-.696*	*.007*
	Sense of individual power	*-.031*	*.038*	*-.048*	*-.824*	*.011*
	Exposure to alternative	*-.105*	*.085*	*-.069*	*-1.235*	*.008*
a. Dependent Variable: poverty severity (Gi/z)2						

Where there was no moderation, it was observed that if transition from extreme poverty – ascertained by the household's poverty severity index score – was increased by one, institutional factors, human capital factors, social capital and economic resource factors had a significant change (0.470, 0.257, 0.185 and 0.418 respectively). All the other variables had a significant increase except institutional resources. Absence of fatalism as a moderating variable was introduced, and a change to 0.470, 0.306, 0.199 and 0.465 in institutional factors, human capital factors, social capital and economic resource factors, respectively resulted. Institutional resource factors were still not significant, whereas all the other variables were significant at the 95 per cent confidence interval level. A combination of both the absence of fatalism and the sense of individual power as moderating variables led to the decrease of the effect of the independent variable on the dependent variables as follows: 0.360, 0.300, 0.185 and 0.448 for institutional factors, human capital factors, social capital and economic capital factors respectively.

The combination of all three sub-variables of the moderating variable – the absence of fatalism, sense of individual power and exposure to alternatives – saw a further decrease in the beta score of the variable as follows: 0.430, 0.298, 0.183 and 0.450. From this, it may be posited that to guarantee transition from poverty in Turkana, more interventions are needed. The introduction of the moderating variable of aspirations and confidence reduced poverty severity; however, an increase in capital resources and capacity-building is likely to produce a more marked reduction.

5.8 HOUSEHOLD RELATIVE CAPACITY

After analysing the transition from extreme poverty in full, the study broke down the capacity into three categories comprising *absorptive, adaptive and transformative capacities,* based on where they fall in the journey towards an exit from poverty. In doing this, the study incorporated the work of Béné et al. (2012) on key capacities critical for individual households or community progress towards resilient livelihoods (escape from poverty). With this study being concerned about the processes of poverty escape, I adopted Frankenberger & Nelson, (2013a) view on the capacity for poverty escape

determinants as consistently changing within evolving social, economic, and environmental contexts. Béné et al. (2012) identified three types of capacities: *absorptive capacity* – the ability to minimize exposure to shocks and stresses through preventative measures and appropriate coping strategies to avoid permanent, negative impacts; *adaptive capacity* – making proactive and informed choices about alternative livelihood strategies based on an understanding of changing conditions; and t*ransformative capacity* – the governance mechanisms, policies/regulations, infrastructure, community networks, and formal and informal social protection mechanisms that constitute the enabling environment for systemic change. These capacities are interconnected, mutually reinforcing, and exist at multiple levels (individual, household, community, state, and ecosystem (Béné et al., 2012; Frankenberger, Langworthy, Spangler, & Nelson, 2012).

5.8.1 CAPACITY CONSTRUCT ANALYSIS

For the purpose of this study, sustainable escape from extreme poverty was determined by a combination of three main variables: the household's absorptive, adaptive and transformative capacities. All households existed under the same conditions (environment and resources) but some thrived more than others. From the study, the household's adaptive capacity had the highest index when subjected to exploratory factor analysis (Principal Component Analysis), accounting for 28 per cent of the entire component. Absorptive capacity accounted for 12 per cent, with transformative capacity accounting for 8.2 per cent.

The reliability of the data was also ascertained using Cronbach's Alpha. The combined reliability test scored 5.11. Due to the importance of the variable in determining transformative capacity and in policy recommendations, it was retained for further analysis. The combination of variables scored 0.679 on the Kaiser-Meyer-Olkin Measure of Sampling Adequacy. This score is greater than the recommended 0.5, making the sample adequate for factor analysis.

Table 43 Construct analysis (Principal Component Analysis)

	Index	*SDV*	*Cronbach's Alpha if Item Deleted*
Adaptive Capacity	*27.917*	*1.35752*	***.343***
Absorptive Capacity	*12.417*	*2.99329*	***.343***
Transformative Capacity	*8.202*	*.86683*	***.586***
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***(.673)***	
Extraction Method: Principal Component Analysis.			

5.8.2 ABSORPTIVE CAPACITY

For the purpose of this study, absorptive capacity is defined as the household's ability to minimize the exposure to shocks and the accompanying stress, as well as the speed at which the household can recover from the shocks. To measure absorptive capacity, the following were investigated: the availability of informal safety nets; the household's shock preparedness and mitigation; its perceived ability to recover from shocks; its savings status and asset ownership; and the pastoralist status of the household.

To authenticate the household's absorptive capacity –"the ability to recover from shocks" as a factor of adaptive capacity – the study analysed six factors using principle component analysis. The analysis confirmed that all the variables could explain the household's ability to recover from shocks: they scored a high extracted communality. However, age and sex composition scored the lowest, warranting it being dropped from further analysis. All the other variables were used in the calculation of relative household adaptive capacity by multivariate analysis. The analysis demonstrated that most households were shunning pastoralism, the only parameter displaying a negative score.

Table 44 Absorptive capacity

			Communalities	
	Mean	*SDV*	*Initial*	***Extracted***
Informal safety nets	*39.175*	*.40158*	*1.000*	***.566***
Shock preparedness and mitigation	*21.583*	*.62539*	*1.000*	***.557***
HH perceived ability to recover from Shocks	*14.830*	*.87883*	*1.000*	***.699***
Whether a HH currently holds savings.	*13.425*	*.58309*	*1.000*	***.644***
Asset ownership;	*10.986*	*4.05417*	*1.000*	***.572***
The pastoralist status of the HH	*-8.96*	*56.0*	*1.000*	***.880***

5.8.3 QUALITATIVE DATA ON ABSORPTIVE CAPACITY

When study respondents were asked what they considered to be the determinants of absorptive capacity, they explained that the households that absorbed shocks best in their area had some of the following resources: savings (cash or quickly disposable assets); membership of a functioning social network that could help them make social capital arrangements; or a working household member who could be asked to send remittances. All of these, as well as status as a beneficiary of the HSNP, indicate a household's shock preparedness level. A female respondent observed: *"If for instance my child falls ill, or is sent out of school for books, I can quickly access interest-free social fund from the savings and lending group that I am a member in. This way I ensure my child has access to health services and remains in school to learn. If I was not a member of the savings group, I would most likely have to sell a chicken or a goat depending on the nature of the emergency. With the social fund – my chickens and goats remain intact for a bigger shock in future".*

5.8.4 ADAPTIVE CAPACITY

In the study, households' adaptive capacity implies possessing the ability to switch to alternative sources of livelihood based on changing conditions. This involves being able to make informed decisions about how a household can move to a higher level of livelihood using available interventions. Offering these recourses goes beyond promoting livelihood diversification, supporting wealth accumulation and adapting positively to a changing environment. It also entails

improving the social capital available to vulnerable populations. Access to financial resources was the strongest factor in terms of adaptive capacity, accounting for 40 per cent of the entire parameter. Human capital accounted for 25 per cent of the parameter, followed closely by diversification of livelihoods at 24 per cent. Exposure to information, though important, accounted for only eight per cent of the variable. This could mean either that the information was not available, or that it was available but could not be interpreted accurately and hence could not be implemented.

Table 45 Adaptive capacity

			Communalities	
	Mean	*SDV*	*Initial*	***Extracted***
Access to financial resources	*40.118*	*.40158*	*1.000*	***.566***
Human capital	*25.469*	*.62539*	*1.000*	***.557***
Diversity of livelihoods.	*24.573*	*.87883*	*1.000*	***.699***
Exposure to information.	*9.840*	*.58309*	*1.000*	***.644***

5.8.5 QUALITATIVE DATA ON ADAPTIVE CAPACITY

Seeking a local definition of adaptive capacity, this observation from a male respondent is informative: *"If you look around, the most typical livestock here is chicken, sheep and goats. As a foreigner, you are likely to think that we have for ages been small ruminant and poultry keepers. This is a new phenomenon. Sheep and goats were animals under the control of women. They were regarded as too small to be handled by men. Notice that as a community we never used to eat chicken – there was no way a Turkana with all livestock at his disposal would eat a bird. Climate change came with livestock diseases, frequent droughts meaning poor pasture and water availability. With people losing animals to drought across borders – cattle rustling became very common as communities tried to restock their herds. The good thing is they only raid cattle but not small ruminants. As a result, many people have shifted to small ruminant and poultry keeping. Despite the poor access to livestock health services, small ruminants are hardy and resilient to the harsh weather. For family needs requiring small finances – it becomes easier selling a chicken and save the sheep or goat*".

A female respondent further observed: *"When cattle keeping became impractical in our area due to poor rains and lack of pasture for the large ruminants, we transitioned to keeping sheep and goats. In the beginning, we were stigmatized for assuming poverty (meaning not keeping cattle). But with time, most of the households here have taken that route. They realized that was the way to go. Most of the children you see in the streets of (county headquarters) Lodwar Town come from families that refused to change – eventually losing all their livestock".*

To understand whether the three sets of capacities (absorptive, adaptive and transformative) were cumulative, I asked study respondents if a household could have one set of capacities and not the other, and how that impacted on the household's poverty escape processes. The responses to this question were inconclusive, but they offered insights into how households viewed the poverty escape process. Most respondents believed a household's ability to stay on the pathway out of poverty relied on what capacities the household held. And most of these respondents foregrounded absorptive and adaptive capacities, because these can largely be controlled from within the household, while transformative capacity has external loci of control. A male respondent noted: "*From my perspective, I would argue that absorptive capacity precedes adaptive capacity or the two co-exist and relate more to transitory poverty. However, the transformative capacities remain critical to sustainable poverty escape."* The observation by respondent 15 gives critical insights into the formation of household capacity responsible for transitory and chronic poverty.

Asked what the study population considered determinants of adaptive capacity, they listed having better access to credit, producing their own crops for consumption, having an educated and or employed household member (access to remittances), and being able to access and interpret timely early warnings. These features mapped by the study respondents indicated their view of adaptive capacity as a higher-level capacity than absorptive capacity.

5.8.6 TRANSFORMATIVE CAPACITY

This capacity relies heavily on external agents for its impact. It relates to available infrastructure, the functionality of community networks, and whether governance mechanisms, policies and regulations are in place. In short, it engages with system changes that can enable sustained graduation. Formal safety nets were the strongest parameter, accounting for 31 per cent of the entire index. This was followed closely by access to markets, more especially cattle markets (this was purely a pastoralist community). Access to infrastructure accounted for 20 per cent of the index and access to basic services (including schools and hospitals) for 13 per cent. It might be assumed that access to animal services such as veterinary care would account for quite a high index relative to access to markets, but this was not the case. Most cattle did not die from diseases, but rather from lack of water and pasture.

Table 46 Transformative capacity

			Communalities	
		SDV	*Initial*	***Extracted***
	Percent			
Formal Safety Nets	*30.973*	*.47940*	*1.000*	***.952***
Access to markets	*24.427*	*.38520*	*1.000*	***.684***
Access to infrastructure	*20.220*	*.49013*	*1.000*	***.688***
Access to Basic Services	*13.144*	*4.19809*	*1.000*	***.746***
Access to livestock services	*11.236*	*.78070*	*1.000*	***.712***

5.8.7 QUALITATIVE DATA ON TRANSFORMATIVE CAPACITY

Asked to describe transformative capacity, one male respondent observed: *"We have pastoralist drop-outs in our community today. These were households edged out of practice by climate change. They were the rich back 20 years ago and the poorest today. These are the people you will find benefiting from the HNSP (social cash transfer). If it wasn't for the HSNP, such households would be worse off. These households have no space for livestock in their lives anymore – they have moved on – sometimes to nowhere! The good thing is some of them have completely embraced conservation farming along the river and are doing far much better when producing crops than keeping livestock".*

When the study respondents were asked what they considered as the determinants of transformative capacity, they explained that for a household to accumulate transformative capacity it needed an environment more conducive to transition. This includes access to water for irrigated crop production in conditions of poor rains and functional basic service institutions. In theory, the county government had provided many of these, but respondents described the services as minimal or non-existent). Three other determinants were mentioned: inclusion in formal, comprehensive, predictable and timely safety nets; market access for livestock; and the decentralization of livestock health services to the local areas.

The study findings mapped here suggest that in this area the same households can possess different sets of capacities at different times. The findings are however inconclusive on whether these capacities are cumulative or sequential and further research on this aspect is required.

5.9 INTER-CARDER POVERTY TRANSITION MODEL (ICPTM)

Carder 1 Threshold

In this study, households that fall under the Carder 1 Threshold are the poorest of the poor. These households are dependent on hand-outs and can hardly meet their daily expenditure, more so, their basic needs. The threshold needed for the households to survive is represented in the model below.

From the model, it is evident that there is a moderate correlation between the predictors of capacity (economic, human, social and institutional resources) and their household relative capacity (absorptive, adaptive and transformative) with the strongest correlation emerging in their adaptive capacity (R=0.567). This means that through the predictors of capacity, households have an ability to switch to alternative sources of livelihood in order to survive. The impact of moderation was also evident as M4 had the highest impact on the relationship.

From the ANOVA, this study found out that all the linear relationships were significant in the 95% confidence interval level as all the relationships had a p-

value of less than 0.05. The combination of all the moderators (M4) played a critical role in ensuring that significance of the relationship.

The study established that transitioning within the carder required a combination of moderation thus emphasising the importance of moderation. The best line of fit between absorptive capacity and predictors of capacity was achieved with the introduction of M3 in Economic Resource Factors, M4 in Social Resource Factors, M1 in Human Capital Resource Factors and M4 in Institutional Resource Factors. This means that for a household to be able to minimize the exposure to shocks and their accompanying stress, as well as the speed at which the household can recover from the shocks, it has to meet these thresholds.

The best line of fit between adaptive capacity and predictors of capacity was achieved with the introduction of M4 in Economic Resource Factors, M1 in Social Resource Factors, M1 in Human Capital Resource Factors and M4 in Institutional Resource Factors. This means that for a household to be able to switch to alternative sources of livelihood based on changing conditions, it has to meet the beta scores in the absorptive capacity as well as meet these thresholds. In an event that the household scores very high in the adaptive capacity but very poor in the absorptive capacity, shocks will defiantly make the household poorer.

The best line of fit between transformative capacity and predictors of capacity was achieved with the introduction of M2 in Economic Resource Factors, M4 in Social Resource Factors, M1 in Human Capital Resource Factors and M3 in Institutional Resource Factors. This means that a household had to meet the beta scores in this capacity for it to engage with systemic changes that enable sustained transition from poverty, sustain its stay in this carder while preparing to move to the next carder. For a household to be considered to have transitioned from this carder; it would first score the threshold beta. In the event, it scores higher in all the parameters, the household is considered to have transitioned.

Table 47 Carder 1 Threshold

			Absorptive Capacity (R)	*Adaptive Capacity (R)*	*Transformative Capacity (R)*
Cadre 1	***Model Summary***	*Moderator*	*M4*	*M4*	*M4*
		R-Score	*.446[e]*	*.567[e]*	*.329[e]*
	ANOVA	*Moderator*	*M4*	*M4*	*M4*
		ANOVA Score	*0.000*	*0.001*	*0.000*
	Coefficients	*Moderator*	*M3*	*M4*	*M2*
		Economic Resource Factors	*0.095*	*0.193*	*0.35*
		Moderator	*M4*	*M1*	*M4*
		Social Resource Factors	*-0.108*	*-0.213*	*0.099*
		Moderator	*M1*	*M1*	*M1*
		Human Capital Resource Factors	*0.134*	*0.354*	*-0.007*
		Moderator	*M4*	*M4*	*M3*
		Institutional Resource Factors	*0.339*	*-0.136*	*0.138*

Moderator: M1-M4 (M1=Absence of fatalism, M2=individual power, M3=exposure to alternatives and M4=the combination of the previous three moderators)

Carder 2 Threshold

For this study, households that fell in Carder 2 Threshold included those with an index score of 0.259 - 0.49. Households under this carder are at a very high risk of falling to carder 1 because they functioned in a very volatile environment. However, a combination of beta scores will ensure that they stabilize their status in this carder alongside the possibility of moving to carder 3.

The model exhibited a moderate correlation in both absorptive (0.403) and adoptive capacities (0.575). This means that through the predictors of capacity, households have an ability to switch to alternative sources of livelihood in order to survive. The impact of moderation was also evident as M4 had the highest impact on the relationship. From the ANOVA, this study found out that all the linear relationships were significant in the 95 per cent confidence interval level as all the relationships had a p-value of less than 0.05. The combination of all the moderators (M2) played a critical role in ensuring that significance of the relationship in absorptive and adaptive capacities while M1 was important in ensuring a significant relationship in transformative capacity.

The study established that transitioning within the carder required a combination of moderation and at some point not requiring any moderation. The best line of

fit between absorptive capacity and predictors of capacity was achieved with the no moderation in Economic and Social Resource Factors, M2 in Human Capital Resource Factors and M1 in Institutional Resource Factors. This means that for a household that has transitioned from carder 1 to be able to minimize the effect of a shock and prevent itself from falling back to extreme poverty or for a household in carder 2 to increase the speed of recovery from a shock, it has to meet these thresholds.

The best line of fit between adaptive capacity and predictors of capacity was achieved with the introduction of M3 in Economic Resource Factors, M1 in Social Resource Factors, M2 in Human Capital Resource Factors and M1 in Institutional Resource Factors. This means that a household that has transitioned from carder 1 has to meet the beta scores in the absorptive capacity as well as sustain itself in this carder by meeting the relative thresholds.

The best line of fit between transformative capacity and predictors of capacity was achieved with the introduction of M3 in Economic Resource Factors, M3 in Social Resource Factors, M1 in Human Capital Resource Factors and M4 in Institutional Resource Factors. This means that for a household to be able to engage with systemic changes that enable its sustained graduation into the next carder, sustain its stay in this carder while preparing to move to the next carder, it has to meet the beta scores in this capacity. For households that were already in this carder graduating into the next carder was not as challenging as households that had graduated from carder 1. It required more than intervention and time. It is also important to note that a household that has graduated from carder 1 and meets all these scores, that household has certainly graduated from extreme poverty.

Table 48Carder 2 Threshold

			Absorptive Capacity (R)	Adaptive Capacity (R)	Transformative Capacity (R)
Cadre 2	***Model Summary***	***Moderator***	*M4*	*M4*	*M4*
		R-Score	*403[e]*	*.575[e]*	***.286[e]***
	ANOVA	***Moderator***	*M2*	*M2*	*M1*
		ANOVA Score	*0.002*	*0.002*	*0.009*
	Coefficients	***Moderator***	*M0*	*M3*	*M3*
		Economic Resource Factors	*0.082*	*0.397*	*-0.003*
		Moderator	*M0*	*M1*	*M3*
		Social Resource Factors	*-0.136*	*-0.213*	*0.061*
		Moderator	*M2*	*M2*	*M1*
		Human Capital Resource Factors	*0.027*	*0.482*	*0.067*
		Moderator	*M1*	*M1*	*M4*
		Institutional Resource Factors	*0.04*	*0.046*	*0.195*

Moderator: M1-M4 (M1=Absence of fatalism, M2=individual power, M3=exposure to alternatives and M4=the combination of the previous three moderators).

Carder 3 Threshold

Households in Carder 3 Threshold were those with an index score of 0.51-0.749 alongside households that had graduated from carder 2. These households scored a moderate correlation as this model could account for 63 per cent, 69 per cent and 55 per cent of the relationship between absorptive, adaptive and transformative capacities and the predictors of capacity. From the ANOVA, This study found out that all the linear relationships were significant in the 95 per cent confidence interval level as all the relationships had a p-value of less than 0.05. Moderation was critical in this relationship as M4 had significance in strengthening the relationship between absorptive and transformative relationship whereas M3 had an impact in the adaptive capacity.

The best line of fit between absorptive capacity and predictors of capacity was achieved with the M4 in Economic, Social and institutional Resource Factors,

and no moderation in Human Capital Resource Factors. The trick of absorbing shock and their accompanying stress in order to ensure that the household stays within this carder partly laid in human capital resource factors alongside adherence to beta scores associated.

Households within this carder were able to switch to alternative sources to meet this livelihood based on changing conditions without requiring any moderation “calling” this is very critical since households were somewhat guaranteed that in case of a shock they had gathered alternatives. Households that fell in this carder had adapted well to the environment even though it is important to note that a change in measures of capacities had a somewhat low effect in the beta score in the relative adaptive capacities. Considering the environment of the study, households in this carder were considered the best performing. It is, however, important to note that even though these households seemed to have a good adaptive capacity, a slip from the combination of these betas would subject the household into a lower carder.

The best line of fit between transformative capacity and predictors of capacity was achieved with the introduction of M2 in Economic Resource Factors, M1 in Social Resource Factors, M1 in Human Capital Resource Factors and M1 in Institutional Resource Factors. The reliance of external agent’s i.e. available infrastructure, the functionality of community networks, and whether governance mechanisms, policies and regulations are in place was also important in households in this carder necessitating moderation.

Table 49 Carder 3 Threshold

			Absorptive Capacity (R)	*Adaptive Capacity (R)*	*Transformative Capacity (R)*
Cadre 3	***Model Summary***	***Moderator***	*M4*	*M4*	*M4*
		R-Score	*.630[e]*	*.669[e]*	***.550[e]***
	ANOVA	***Moderator***	*M4*	*M3*	*M4*
		ANOVA Score	*0.01*	*0.03*	***0.001***
	Coefficients	***Moderator***	*M4*	*M0*	*M2*
		Economic Resource Factors	***0.255***	*-0.188*	*-0.05*
		Moderator	*M4*	*M0*	*M1*
		Social Resource Factors	***-0.108***	*-0.022*	*0.458*
		Moderator	*M0*	*M0*	*M1*
		Human Capital Resource Factors	*0.134*	*0.354*	*-0.007*
		Moderator	*M4*	*M0*	*M1*
		Institutional Resource Factors	*-0.014*	*-0.543*	*0.245*

Moderator: M1-M4 (M1=Absence of fatalism, M2=individual power, M3=exposure to alternatives and M4=the combination of the previous three moderators).

Carder 4 Threshold

Households in cadre 4 (above 0.751) formed the model benchmark. They were fully absorptive: unaffected by shocks due to their resilience. They were fully adapted, needed no interventions and had fully transformed, utilizing available infrastructure and possessing several safety nets and fall-back plans. With scores of 98 per cent, the remaining unexplained variation could partly be attributed to other factors not specified in the model and partly to the error term in the regression equation.

It might be perceived that this perfect benchmark needed no moderation but from the ANOVA, the study found out that all the linear relationships were significant in the 95 per cent confidence interval level as all the relationships had a p-value of less than 0.05. The combination of all the moderators (M4) played a critical role in ensuring that significance of the relationship.

The best line of fit between absorptive capacity and predictors of capacity was achieved with M4 in Economic and institutional Resource Factors, no moderation in Human Capital and Institutional Resource Factors.

Households within this carder were able to switch to alternative sources to meet this livelihood based on changing conditions without requiring any moderation “calling” in economic and institutional resource factors whereas they needed M4 in both social and human capital resources. It can be inferred that moderation is required in order to ensure that that the households don’t fall back to carder 3 subjecting them to further falls.

The best line of fit between transformative capacity and predictors of capacity was achieved with the introduction of M4 in Economic and institutional Resource Factors, whereas no moderation was needed in both social and human resource factors. This is the most critical carder since the only way was back this is why there were high positive beta scores in the coefficients culminated by high negative scores. If a household falls from this carder, returning back is somewhat impossible. This explains why there were less than 5 households in this carder. A further inquest confirmed that wealth in these households ran as back as the fourth generation.

Table 50 Carder 4 Threshold

			Absorptive Capacity (R)	*Adaptive Capacity (R)*	*Transformative Capacity (R)*
Carder 4	***Model Summary***	***Moderator***	*M4*	*M4*	*M4*
		R-Score	*.988[b]*	*.990[b]*	*.988[b]*
	ANOVA	***Moderator***	*M4*	*M4*	*M4*
		ANOVA Score	*0.023*	*0.00*	*0.001*
	Coefficients	***Moderator***	*M4*	*M0*	*M4*
		Economic Resource Factors	*3.974*	*-1.947*	*3.974*
		Moderator	*M0*	*M4*	*M0*
		Social Resource Factors	*-0.32*	*3.175*	*-0.32*
		Moderator	*M0*	*M4*	*M0*
		Human Capital Resource Factors	*-0.296*	*7.035*	*-0.296*
		Moderator	*M4*	*M0*	*M4*
		Institutional Resource Factors	*1.835*	*-0.758*	*1.835*

Moderator: M1-M4 (M1=Absence of fatalism, M2=individual power, M3=exposure to alternatives and M4=the combination of the previous three moderators)

5.10 MAIN LESSONS PERTAINING TO HYPOTHESIS TESTING

This section summarises the main findings pertaining to hypotheses testing and includes the hypotheses as well as the main finding formulated for each hypothesis.

H1: Social resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

Main finding: The more the social resource factors, the better the chances of household adaptive capacity to transition from extreme poverty with a small direct effect.

H2: Economic resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

Main finding: The more the economic resource factors, the better the chances of household adaptive capacity to transition from extreme poverty with a large direct effect.

H3: Institutional resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

Main finding: The more the institutional resource factors, the better the chances of household adaptive capacity to transition from extreme poverty with a small direct effect.

H4: Human capital resource factors are positively associated with household adaptive capacity to transition from extreme poverty.

Main finding: The more the human capital resource factors, the better the chances of household adaptive capacity for transition from extreme poverty with a large direct effect.

H5: Aspirations to being non-poor are positively associated with household adaptive capacity to transition from extreme poverty.

Main finding: The higher the aspirations of being non-poor, the better the chances of household adaptive capacity for the transition from extreme poverty with a large indirect effect.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This thesis is structured in six chapters. In chapter one, I introduced the research problem, provided the rationale for the study, research questions and the anticipated contribution of the study. Chapter two formed a critical review of the extant literature on household transition from extreme poverty, while chapter three was a reflection on the research approach including data collection methods and analysis framework. In chapter four I discussed the sample realisation including demographic profiles of the respondents and qualitative poverty self-categorization by the study population. Chapter five presents the descriptive results for predictors of poverty including findings across the five study variables. In the same chapter, the study of households' poverty levels is determined. This final chapter provides an overview of the study, including recommendations based upon the results as reported in Chapter 5 and in line with the literature review in Chapters 2 to 4.

6.2 OVERVIEW OF THE STUDY

This study sought to understand the processes through which households sustainably transition from extreme poverty, by examining the characteristics and determinants of relative household capacity among a community in Kenya that is characterised by poverty. Two specific questions were pursued thus: *i) what factors contribute to relative household adaptive capacity to trigger a transition from extreme poverty?; and, ii) does the aspiration (calling) to transition from poverty influence a household's relative adaptive capacity to transition from extreme poverty?*

The study results cannot be claimed as definitive, but rather a good basis for determining the causal mechanisms that underpin chronic poverty in the study area and suggest how poverty reduction interventions could be designed in line with household-specific pathways out of poverty.

6.3 CONCLUSIONS AND RECOMMENDATIONS

Based on the theoretical overview of the capacity factors for the sustainable transition from extreme poverty, the study concludes as below:

The findings from the study reveal that all households studied existed under the same conditions but that some thrived more than others. Household's *adaptive* capacity had the highest index (accounting for 28 per cent of the entire component) as compared to *absorptive* capacity (accounting for 12 per cent), with *transformative* capacity accounting for 8.2 per cent when subjected to exploratory factor analysis.

The findings indicate that most households in the study area had *absorptive capacity*: they could withstand infrequent, small-scale shocks either through their own resources or by utilising available safety nets. This observation concurs with study respondents' own remarks that even households perceived as non-poor were vulnerable to poverty descent, depending on the nature of the shock they experienced. From the features of the capacities and vulnerabilities mapped in the study area, it is concluded that for households to sustainably escape poverty, a balance is required between those capacities that power its exit from poverty and those that prevent its descent into poverty. These features relate to what Krishna et al. (2004) generally terms as resilience-enabling and risk-management capacities and mirror Adger & Vincent (2005) argument that adaptive capacity is reflected by those characteristics of households, societies, and regions that influence their propensity or ability to adapt.

The study identified poverty traps to be characterised by socio-cultural exclusion, stemming from circumstances including the collapse of social capital, large household size coupled with declining asset-holding levels, and livelihood vulnerability to climate change and variability. Geographical exclusionary processes were found to further the descent into poverty, particularly where regional circumstances meant there were inadequate or no enabling institutional capacities to support households in establishing pathways out of poverty. This conclusion relates to Mwamba (2013), that adaptive capacity and adaptability

are determined by the characteristics of the household or the society in which it is located.

To understand the sequence of events associated with the pathways followed by different households, Chambers (2006) recommends careful and systematic engagement with community members and individual households.

From the study findings, escape from poverty in the study area emerged as a continuous process rather an end. Respondents described the status of being non-poor as a temporary rather a permanent end to suffering. The study observed that even households that had escaped poverty needed to double their efforts to stay out of poverty. The poverty cycle (*poor– non-poor – poor)* as revealed by this study indicates that households would have to constantly invest in one or other forms of capital (economic, social, human and institutional) to sustainably transition from extreme poverty. This observation collaborates with Krishna, (2004), different households can simultaneously either emerge from or fall into poverty.

The study points towards the need to better understand and unpack what determines those household capacities that can build effective pathways out of poverty while blocking pathways into poverty. Based on the study findings, it is concluded as below:

Firstly, diversifying income sources (as claimed in literature and theory) does not automatically lead to increased income levels. At least not for the study population. Instead, resilient incomes sources – particularly non-farm types – did. Despite the diversification away from livestock – the core income source for the study population, household incomes were self-reported to have been on a downward trend over the 3 years preceding this study – a trend that would continue if unchecked.

Secondly, the study findings revealed a community that could be characterized as chronically food insecure with the majority of households spending over 85% of their total incomes on food. The observations are way above the 54% and 74% threshold for urban and rural households respectively as posited by Banerjee, A. V., & Duflo, E., (2007).

Thirdly, the study concludes that although communities possess localized shock response mechanisms that could be leveraged for a sustainable transition from extreme poverty, the *utility of such response mechanisms is limited to only small shocks and at times require the existence of strong institutional capital base for efficacy.* Climate change and variability-related shocks were identified as the main factors impelling households' descent into poverty, with households further self-reporting low capacity for recovery in the event all productive assets were lost. Based on the nature and dynamics of the local shock response capacities reported during the research it would be concluded that vulnerability (*the risk of becoming poor*) among the study respondents remains very high.

Fourthly, despite literature and theories on formal credit and its role in stimulating poverty escape in the study area this would be argued otherwise. *The borrowing culture exhibited in the study area –from families and friends, or trusted traders – did not nurture a culture of saving rather, it strengthened intra- and inter-household social capital. In the event of a default, a borrowing household would technically be a causal factor for the lenders (household) descent into poverty.*

Fiftthly, the study findings conclude that inaccessibility of information was a limiting factor in the escape from poverty. This information gap did not just relate to unawareness of existing economic opportunities and related services, but also in terms of access to early warnings that could trigger localized (household- and community-level) responses to slow-onset shocks. Further, the usefulness of such information to enhance household capacity for poverty escape was limited by the low education levels of household heads or members. The study findings indicate that although most respondents used mobile phones, their perceived usefulness as a poverty reduction tool had not been realized with *mobile phones predominantly used for access to social assistance from friends and relatives (remittances through mobile money transfers) and access to early warning about conflict triggered by cattle rustling.*

Sixthly, the study concludes that individual households have a role to play to sustainably transition from extreme poverty. Household aspiration (calling) to escape poverty were found to influence its adaptive capacities, and

consequently its poverty escape. This observation relates to Ele-Ojo's (2013) suggestion that human development is a process of expanding freedom and choice, underscoring the need to view poverty as a shortfall in the fundamental capabilities of a person, and indicative of the degree of freedom needed to realize individual aspirations.

Seventhly, the study findings revealed that the complexity of poverty in the study area needs to be understood contextually, with the affected people in lead, and adopting more varied poverty measures. Poverty rates in the area have remained high since the 1960s, despite investment from the government and its development partners, and a richer discourse can assist in understanding and changing this narrative.

Eighthly and last, the study concludes that *poverty is a process characterised by interrelationships and movement between poor and non-poor status*, and between different cadres of poverty. Yet poverty reduction interventions in the study area (including the government safety net programme) are targeted aton the current poor and exclude those at risk of becoming poor.

To enhance the sustainable transition from extreme poverty in the study area, the study recommends as below:

First, once-off poverty reduction strategies should be reconsidered and realigned in a manner that enables poor households to utilise them in establishing pathways out of poverty and realizing their aspiration to be poor no longer.

Second, that existing safety nets be redesigned to mitigate the risk of households falling deeper into poverty during shocks by providing a platform for a timely response.

Third, given the severe effects of climate change on livelihood in the study area, for households to transition sustainably out of poverty they would require a blend of interventions that enhance their relative adaptive capacities.

Fourth, the findings demonstrate that a large proportion of households in the study area live in conditions of chronic poverty. It is recommended that for

poverty reduction policies in this area should target both the current poor and non-poor in order to ensure minimal leakage.

Fifth, given the role played by a household's aspirations, the study reveals the need for pro-poor policies from government, donors and other development agencies to be designed in a way that effectively stimulates self-reinforcing growth (aspirational development or levelling) among the poor.

To support poverty escape in this area, effective safety nets to protect the assets households accumulate can prevent inadvertent backsliding. Such safety nets, unlike the existing HSNP, need to be placed strategically above the critical poverty escape thresholds, to address not just the survival threshold (consumption support) but also the livelihood threshold (poverty escape).

6.4 LIMITATIONS OF THE RESEARCH

This study had three main limitations:

First, the study was limited to a community perceived as pastoral (livestock-producing) and, as such, generalization to communities pursuing different livelihood options is constrained. Given the sample size, and the fact that the study covered only a relatively small geographical area, the findings cannot be assumed to reflect every pastoral community in general: other pastoral areas could possess different capacity formations and processes.

Second, the study embraced the construct of aspiration (calling to escape poverty) as advanced by previous researchers. However, the perceived utility of this construct remains under-researched, particularly with regards to the negative effects of such aspirations (aspiration failure) on a household's desire for better well-being.

Lastly, the study borrows heavily from climate change- and variability-related literature, and this may limit the value of its observations for other factors causing poverty.

6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

With insights from the study limitations above, I make recommendations for future research as below.

6.5.1 THEORY

This study employed systems theory to explore the processes through which poor households escape poverty. In doing so, I explored variables and sub-indices (parts of the system) derived importantly from extant climate change literature, integrated with concepts from poverty literature. Although this study begins to suggest a linkage between the two, further grounding is needed to ensure a coherent theoretical basis for discussions of how the links between climate change, relative household adaptive capacities and poverty escape operate across different contexts. Aspirations (the “calling” to escape poverty) have been tested as a strong moderating factor in poverty escape, and this could form the basis for further studies. Such studies could enrich the debate between “blame the poor” arguments (currently dominant in popular, rather than scholarly, writing) and those discussions that instead foreground the importance of contextual factors.

6.5.2 PRACTICE

The study was conducted in a community perceived as a typical pastoralist. The findings reflected a rather more complex situation. They reveal that pastoralism is no longer the livelihood option of choice, despite the area being an Arid and Semi-Arid Land (ASAL) where livestock production remains the livelihood option with the most potential if barriers to productivity can be addressed. With limited alternative economic opportunities in the area, the rate at which households reported “dropping out of” pastoralism is a matter of concern.

Given the depth of poverty among smallholder, crop-producing communities, it would be interesting to see what household relative capacities are instrumental in those contexts in pushing households out of poverty in the face of climate change. Climate change has been characterised as impacting directly on all agriculture-reliant livelihoods (Mwamba, 2013; Mwanza, 2011). In addition, the

significance of intergenerational poverty transfer emerges strongly from this study, especially where poor households with educated youthful members remain in poverty. There is thus a need to amass more evidence on how best poverty reduction strategies could be formulated to take into account the situation of households containing some better-educated younger members. Lastly, further research is needed to explore whether the “blame the poor” argument has any utility in effectively stimulating households to take their own initiatives towards poverty escape.

6.5.3 METHODOLOGY

This study was broadly quantitative in nature with less extensive qualitative data collected through FGD and KII to deepen the insights. The findings from the quantitative data found strong support from the qualitative findings. Findings from the study indicate that such variables and their corresponding sub-indices impact differently on the different types of capacity for poverty escape. Separate studies could focus on each individual variable and its sub-indices (potentially introducing newer ones) to deepen the findings since the study sample (the range of its geographical area) was limited.

6.6 CONCLUDING REMARKS

The findings from this study demonstrate that there are multiple active pathways both into and out of extreme poverty. Mapping these pathways in more detail would deepen knowledge about the underlying causes of escape from, and descent into, poverty in specific contexts.

Study data indicate that the process through which households sustainably escape extreme poverty is characterized by the acquisition and retention of three sets of capacities: absorptive, adaptive and transformative. However, it places the “calling” to escape poverty (aspirations) as central.

The findings point to the need to address the push and pull factors for poverty, rather than merely addressing the symptoms. For instance, the high “drop-out” rates from pastoralism reported refer to a symptom rather than a cause. To support poverty escape in this area, effective safety nets to protect the assets

households accumulate can prevent inadvertent backsliding. Such safety nets, unlike the existing one, need to be placed strategically above the critical poverty escape thresholds, to address not just the survival threshold (consumption support) but also the livelihood threshold (poverty escape).

REFERENCES

Abdul-Hakim, R., & Che-Mat, S. (2011). Non-farm activities and time to exit poverty: A case study in Kedah, Malaysia. *World Review of Business Research, 1*(2), 113-124.

Adato, M., Carter, M. R., & May, J. (2006). Exploring poverty traps and social exclusion in South Africa using qualitative and quantitative data. *The Journal of Development Studies*, *42*(2), 226-247.

Adger, W. N., Huq, S., Brown, K., Conway, D., & Hulme, M. (2003). Adaptation to climate change in the developing world. *Progress in development studies, 3*(3), 179-195.

Adger,W. N., & Vincent, K. (2005). Uncertainty in adaptive capacity. *Comptes Rendus Geoscience*, *337*(4), 399-410.

Adkins, L. (2012). Out of Work or Out of Time? Rethinking Labor of the Financial Crisis. *South Atlantic Quarterly, 111*(4), 621–641.

Ahluwalia, M. S., Carter, N. G., & Chenery, H. B. (1979). Growth and poverty in developing countries. *Journal of development economics*, *6*(3), 299-341.

Albert, J. R. G., Elloso, L. V., & Ramos, A. P. (2007). *Toward measuring household vulnerability to income poverty in the Philippines* (No. 2007-16). PIDS Discussion Paper Series.

Appadurai, A. (2013). The Future as Cultural Fact: Essays on the Global Condition, in "Rassegna Italiana di Sociologia, Rivista trimestrale fondata da Camillo Pellizzi" 4/2013, pp. 649-650, doi: 10.1423/76023.

approach. *Handbook of mixed methods in social and behavioral research*, *1*, 241-272.

Ary, D., Jacobs, L. C., Irvine, C. K. S., & Walker, D. (2018). *Introduction to research in education*. Cengage Learning.

Azad, S., Ancev, T., & Harris, M. (2016). *Measuring Natural Capital on Agricultural Farm* (No. 427-2016-27431).

Banerjee, A. V., & Duflo, E. (2007). The Economic Lives of the Poor. The Journal of Economic Perspectives : *A Journal of the American Economic Association, 21*(1), 141–167.

Barratt, M., Choi, T. Y., & Li, M. (2011). Qualitative case studies in operations management: Trends, research outcomes, and future research implications. *Journal of Operations Management, 29*(4), 329-342.

Barrett, C. B., Carter, M. R., & Little, P. D. (2006). Understanding and reducing persistent poverty in Africa: Introduction to a special issue. *Journal of Development Studies, 42*(2), 167–177.

Barrett, C. R., & Swallow, B. M. (2006). Fractal poverty traps. *World Development, 34*(1), 1–15.

Barrett, Christopher B. et al, (2006). Welfare dynamics in rural Kenya and Madagascar. *The Journal of Development Studies, 42*(2), 248-277.

Barrientos, A., & Lloyd-Sherlock, P. (2002). Non-contributory pensions and social protection. *Issues in Social Protection, .*

Baulch, B., & McCulloch, N. (2002). Being poor and becoming poor: Poverty status and poverty transitions in rural Pakistan. *Journal of Asian and African Studies, 37*(2), 168-185.

Béné, C., Wood, R. G., Newsham, A., & Davies, M. (2012). Resilience: new utopia or new tyranny? Reflection about the potentials and limits of the concept of resilience in relation to vulnerability reduction programmes. IDS Working Paper, Volume 2012, Number 405.

Berman, M., Kofinas, G., & BurnSilver, S. (2017). Measuring community adaptive and transformative capacity in the Arctic context. In *Northern Sustainabilities: Understanding and Addressing Change in the Circumpolar World* (pp. 59-75). Springer, Cham.

Bernard, T., &Taffesse, A.S. (2012). Measuring aspirations: discussion and example from Ethiopia. *International Food Policy Research Institute Discussion Paper*, *1190*.

Bhandari, P. B. (2013). Rural livelihood change? Household capital, community resources and livelihood transition. *Journal of Rural Studies, 32,* 126–136.

Birkenmaier, J., & Tyuse, S. W. (2005). Affordable Financial Services and Credit for the Poor: The Foundation of Asset Building. *Journal of Community Practice, 13*(1), 69–85.

Brooks, N., Adger, W. N., & Kelly, P. M. (2005). The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation. *Global environmental change, 15*(2), 151-163.

Brunswick, E. (1947). Systematic and unrepresentative design of psychological

Bunnell, T., Gillen, J., & Ho, E. L. E. (2018). The Prospect of Elsewhere: Engaging the Future through Aspirations in Asia. *Annals of the American Association of Geographers*, *108*(1), 35-51.

Byrne, T. R. (2014). Household Adaptive Capacity and Current Vulnerability to Future Climate Change in Rural Nicaragua (Doctoral dissertation, Lethbridge, Alta.: University of Lethbridge, Dept. of Geography).

Carter, M. R., & Barrett, C. B. (2006). The economics of poverty traps and persistent poverty: An asset-based approach. *Journal of Development Studies, 42*(2), 178–199.

Chambers, R. (2006). What is poverty? Concepts and Measures. Poverty in Focus.

Chantarat, S., & Barrett, C. B. (2012). Social network capital, economic mobility and poverty traps. *Journal of Economic Inequality, 10*(3), 299-342.

Chantarat, S., & Barrett, C. B. (2012). Social network capital, economic mobility and poverty traps. *Journal of Economic Inequality, 10*(3), 299-342.

Chaudhuri, S., Jalan, J., & Suryahadi, A. (2002). Assessing Household Vulnerability to Poverty from Cross-sectional Data: *The Journal of Development Studies, 42*(2), 178-199.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95-S120.

Collier, P., & Gunning, J. W. (1999). Explaining African economic performance. *Journal of Economic Literature*, 37(1), 64-111.

Commission for Revenue Allocation. (2011). Kenya County Fact Sheets. Turkana County.

Coolican, H. (2014). Research methods and statistics in psychology . East Sussex.

Cornell, S., Costanza, R., Sorlin, S., & Van der Leeuw, S. (2003). Developing a systematic ‘‘science of the past’’ to create our future. *Global Environmental Change 20*(3), 426–427.

Corral, L., & Reardon, T. (2001). Rural nonfarm incomes in Nicaragua. *World Development, 29*(3), 427-442.

Corral, L., & Reardon, T. (2001). Rural nonfarm incomes in Nicaragua. *World development, 29*(3), 427-442.

Côté, S., Helliwell, J. F., & Field, S. (2001). Du Bien-être Des Nations. OECD Publishing.

Coudouel, A., Hentschel, J. S., & Wodon, Q. T. (2002). Poverty measurement and analysis. *A Sourcebook for Poverty Reduction Strategies, 1*, 27–74.

CPAN. (2015). The Chronic Poverty Report 2014-2015: The road to zero extreme poverty. Overseas Development Institute. Retrieved from https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8834.pdf

Cumming, G. S. (2011). Spatial resilience: integrating landscape ecology, resilience, and sustainability. *Landscape ecology, 26*(7), 899-909.

Czerniewicz, L., Goodier, S., & Morrell, R. (2017). Southern knowledge online? Climate change research discoverability and communication practices. *Information, Communication & Society*, *20*(3), 386-405.

Dalton, P. S., Ghosal, S., & Mani, A. (2015). Poverty and aspirations failure. *The Economic Journal*, *126*(590), 165-188.

Dalton, P. S., Ghosal, S., & Mani, A. (2016). Poverty and aspirations failure. *The Economic Journal, 126*(590), 165-188.

Davis, E. P. (2014). A review of the economic theories of poverty.

de Montesquiou, A., Sheldon, T., Degiovanni, F., & Hashemi, S. (2014). From extreme poverty to sustainable livelihoods: a technical guide to the graduation approach. CGAP and Ford Foundation.

DFID. (1999). Sustainable Livelihoods guidance. Department for International Development.

Eakin, H. C., & Wehbe, M. B. (2009). Linking local vulnerability to system sustainability in a resilience framework: two cases from Latin America. *Climatic change, 93*(3-4), 355-377.

EEC. (1985). On Specific Community Action to Combat Poverty (Council Decision of 19 December 1984) 85/8/EEC. *Official Journal of the EEC, 2*(24).

Ellis, F., & Mdoe, N. (2003). Livelihoods and rural poverty reduction in Tanzania, *World Development, 31*(8), 1367 -1384.

Elrick-Barr, C. E., Preston B. L., Thomsen, D. C., & Smith, T.F. (2014).Toward a new conceptualization of household adaptive capacity to climate change: applying a risk governance lens. *Ecology and Society 19*(4): 12.

Engle, N. L. (2011). Adaptive capacity and its assessment. *Global Environmental Change*, *21*(2), 647-656.

Eriksen, S. H., & O'Brien, K. (2007). Vulnerability, poverty and the need for sustainable adaptation measures. *Climate Policy, 7*(4), 337–352.

experiments with results in physical and social perception. *Berkeley. CA. University of California Press.*

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods*, *4*(3), 272.

Feher, M. (2009). Self-appreciation; or, the aspirations of human capital. *Public Culture*, *21*(1), 21-41.

Feinberg, F.M., Kinnear, T.C. & Taylor, J.R. (2013). *Modern marketing research. Concepts, methods, and cases. International edition*. 2nd ed. Sydney, Australia: Cengage Learning.

Foster, J., Greer, J. and Thorbecke, E. (1984). A class of decomposable poverty measures. *Econometrica 52*: 761-5.

Foster, J., Greer, J., & Thorbecke, E. (2010). The Foster–Greer–Thorbecke (FGT) poverty measures: 25 years later. *The Journal of Economic Inequality*, *8*(4), 491-524.

Frankenberger, T., Mueller, M., Spangler, T., & Alexander, S. (2013). Community resilience: Conceptual framework and measurement feed the future learning agenda. *Rockville, MD: Westat*, *1*.

Gallopin, G.C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change 16*(3), 293–303.

Gautam, Y., & Andersen, P. (2016). Rural livelihood diversification and household well-being: Insights from Humla, Nepal. *Journal of Rural Studies 44*, 239–249.

Gilchrist, A., & Kyprianou, P. (2011). Social networks, poverty and ethnicity. *Programme paper, Joseph Rowntree Foundation, York*.

Gordon, J. (2007). The Mobile Phone and the Public Sphere: Mobile Phone Usage in Three Critical Situations. *Convergence, 13*(3), 307-319.

Grootaert, C., Oh, G. T., & Swamy, A. (2002). Social capital, household welfare and poverty in Burkina Faso. *Journal of African Economies, 11*(1), 4-38.

Günther, I., & Harttgen, K. (2006). *Estimating vulnerability to covariate and idiosyncratic shocks* (No. 154). Discussion papers//Ibero America Institute for Economic Research.

Hadley, C., Linzer, D. A., Belachew, T., Mariam, A. G., Tessema, F., & Lindstrom, D. (2011). Household capacities, vulnerabilities and food

insecurity: Shifts in food insecurity in urban and rural Ethiopia during the 2008 food crisis. *Social Science & Medicine, 73*(10), 1534-1542.

Hagenaars, A. J. (2017). The definition and measurement of poverty. In *Economic Inequality and Poverty: International Perspectives* (pp. 148-170). Routledge.

Hashemi, S. M., & De Montesquiou, A. (2011). Reaching the poorest: Lessons from the graduation model. *Focus note*, *69*, 1-15.

Hashemi, S. M., & Umaira, W. (2011). New pathways for the poorest: the graduation model from BRAC. *BRAC Development Institute, Centre for Social Protection (CSP), United Kingdom*.

Hoeyer, K., Dahlager, L., & Lynöe, N. (2005). Conflicting notions of research ethics: The mutually challenging traditions of social scientists and medical researchers. *Social science & medicine, 61*(8), 1741-1749.

Holland, J. H. (1995). *Hidden orderhow adaptation builds complexity* (No. 003.7 H6).

Huda, K., Kaur, S., Sengupta, A., &Lamhague, N. (2011). Graduating out of extreme poverty: who succeeds. *BRAC Development Institute Research Brief*, (5th).

Inkpen, A. C., & Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of Management Review, 30*(1), 146–165.

IPC-CG, (International Policy Centre for (Inclusive Growth). (2017). Debating Graduation. *Policy in Focus, 14*(2).

Jones, L., Ludi, E., & Levine, S. (2010). Towards a characterisation of adaptive capacity: a framework for analysing adaptive capacity at the local level, Overseas Development Institute.

Karfakis, P., & Sarris, A. (2006). Household vulnerability in rural Tanzania. FAO Commodity and Trade Policy Research Working Paper (FAO).

Karlan, D., & Zinman, J. (2010). Expanding Credit Access: Using Randomized Supply Decisions to Estimate the Impacts.

Katungi, E., Machethe, C. H. A. R. L. E. S., & Smale, M. (2007). Determinants of social capital formation in rural Uganda: Implications for group-based agricultural extension approaches. *African Journal of Agricultural and Resource Economics*, *1*(2), 167-190.

Kelly, P. M., & Adger, W. N. (2000). Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climatic Change, 47*(4), 325-352.

Keskitalo, E. C. H., Dannevig, H., Hovelsrud, G., West, J. & Swartling, A.G. (2011). Adaptive capacity determinants in developed states: examples from the Nordic countries and Russia. *Regional Environmental Change 11*(3), 579-592.

Klaassen, P., & Eeghen, I. . (2009). *Economic capital: What it is and what every bank manager should know*. Burlington, MA: Elsevier Finance.

Krishna, A. (2004). Escaping poverty and becoming poor: who gains, who loses, and why? *World development, 32*(1), 121-136.

Krishna, A. (2006). Pathways out of and into poverty in 36 villages of Andhra Pradesh, India. *World development, 34*(2), 271-288.

Krishna, A., Janson, P. K., Radeny, M., & Nindo, W. (2004). Escaping Poverty and Becoming Poor in 20 Kenyan Villages. *Journal of Human Development, 5*(2).

Kristjanson P, Krishna A, Radeny M, Nindo W. (2004). Pathways out of Poverty in Western Kenya and the Role of Livestock. Food and Agriculture Organization, Pro-Poor Livestock Policy Initiative Working Paper 14. FAO, Rome.

Madden, K. (2016). The Heart of Poverty. Maxim Institute. Available Online at: Http://Img. Scoop. Co. Nz/Media/Pdfs/1407.

Malhotra, N.K., Birks, D.F. & Wills, P. (2012). *Marketing reseach: an applied approach.* 4th ed. London: Pearson Education.

Marinho, E., Campelo, G., França, J., & Araujo, J. (2017). Impact of infrastructure expenses in strategic sectors for Brazilian poverty. *EconomiA*, *18*(2), 244-259.

Mashigo, P. (2006). The debt spiral in the poor households in South Africa. *The International Indigenous Journal of Entrepreneurship, Advancement, Strategy and Education*, *2*(1).

Matson, P. A., Parton, W. J., Power, A. G., & Swift, M. J. (1997). *Agricultural Intensification and Ecosystem Properties. Science, 277*(5325), 504-509.

Maxwell, J. A., & Loomis, D. M. (2003). Mixed methods design: An alternative.

Maxwell, S. (1999). The meaning and measurement of poverty. Overseas Development Institute.

McPeak, J. G., & Barrett, C. B. (2001). Differential risk exposure and stochastic poverty traps among East African pastoralists. *American Journal of Agricultural Economics, 83*(3), 674-679.

Mincer, J. (1974). Schooling, Experience, and Earnings. Human Behavior & Social Institutions No. 2

Misturelli, F., & Heffernan, C. (2010). The concept of poverty: a synchronic perspective. *Progress in Development Studies, 10*(1), 35–58.

Mokomane, Z. (2012, September). Role of families in social and economic empowerment of individuals. *In United Nations expert group meeting on "Promoting empowerment of people in achieving poverty eradication, social integration and full employment and decent work for all (pp. 10-12).*

Molony, T (2008) Running out of Credit: The Limitations of Mobile Telephony in a Tanzanian Agricultural Marketing System. *Journal of Modern African Studies, 46*(4), 637-658.

Morduch, J. (1998). Poverty, Economic growth and average exit time. *Economics Letters, 59*(3), 385-390.

Mortreux, C., & Barnett, J. (2017). Adaptive capacity: Exploring the research frontier. *Wiley Interdisciplinary Reviews: Climate Change*, *8*(4), e467.

Moss, R. H., Brenkert, A. L., & Malone, E. L. (2001). Vulnerability to climate change: a quantitative approach. Pacific Northwest National Laboratory (PNNL-SA-33642). Prepared for the US Department of Energy, 155-167.

Muyanga, M., Ayieko, M., & Bundi, M. (2007). Transient and Chronic Rural Household Poverty: Evidence from Kenya. *Poverty Economic Policy Research Network*.

Mwamba, L. O. (2012). Vulnerability and Adaptability: Modelling the Adaptive Capacity of Rural Households to Environmental Changes.

Mwamba, L. O. (2013). Vulnerability and Adaptability: Modelling the Adaptive Capacity of Rural Households to Environmental Changes. Siaya, Kenya.

Mwanza Joseph, F (2011). Assessment of Factors of household capital/assets that influence income of smallholder farmers under International Development Enterprises (IDE) in Zambia.

Narayan, D., & Pritchett, L. (1999). Cents and sociability: Household income and social capital in rural Tanzania. *Economic development and cultural change, 47*(4), 871-897.

Neilson, C., Contreras, D., Cooper, R., & Hermann, J. (2008). The dynamics of poverty in Chile. *Journal of Latin American Studies*, *40*(2), 251-273.

Nelson, D.R., Adger, W.N., & Brown, K. (2007. Adaptation to environmental change: contributions of a resilience framework. *Annual Review of Environment and Resources 32*, 395–419.

Norton, A., & Foster, M. (2001). The potential of using sustainable livelihoods approaches in poverty reduction strategy papers. London: Overseas Development Institute.

O'Brien, K., Eriksen, S. E., Schjolden, A., & Nygaard, L. P. (2004). What's in a word? Conflicting interpretations of vulnerability in climate change research. *CICERO Working Paper*.

O'Brien, K., Sygna, L., & Haugen, J. E. (2004). Vulnerable or resilient? A multi-scale assessment of climate impacts and vulnerability in Norway. *Climatic change, 64*(1-2), 193-225.

Olwande, J., & Mathenge, M. K. (2011). Market participation among poor rural households in Kenya. Tegemeo Institute of Agricultural Policy and Development.

Onyeiwu, S., & Liu, J. (2011). Determinants of income poverty in rural Africa: Empirical evidence from Kenya and Nigeria. In African Economic Conference, Addis Ababa, October (pp. 26-28).

Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of nursing scholarship, 33*(1), 93-96.

Osbahr, H. (2007). Building resilience: Adaptation mechanisms and mainstreaming for the poor. Occasional Paper for the Human Development Report, 8.

Pahl-Wostl, C. (2009). A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes. *Global Environmental Change 19*(3), –365.

Pantazis, C., Gordon, D., & Levitas, R. (Eds.). (2006). *Poverty and social exclusion in Britain: The millennium survey*. Policy Press.

Parry, M. L., Canziani, O. F., Palutikof, J. P., Van der Linden, P. J., & Hanson, C. E. (2007). Contribution of working group II to the fourth assessment report of the intergovernmental panel on climate change, 2007. *Climate Change 2007: Working Group II: Impacts, Adaptation and Vulnerability*.

Parsons, S. J., Green, F., Sullivan, A., & Wiggins, R. (2015). Dreaming Big: Self-Evaluations, Aspirations, High-Valued Social Networks, and the Private-School Earnings Premium.

Pasquier-Doumer, L., & Brandon, F. R. (2015). Aspiration failure: a poverty trap for indigenous children in Peru? *World Development, 72*, 208-223.

Paul, B. (2009). Institutional capital: A new analytical framework on theory and actions for economic development.

Pelling, M. & High, C. (2005). Understanding adaptation: What can social capital offer assessments of adaptive capacity? *Global Environmental Change Part A, 15*, 308-319.

Peng, C. Y. J., & So, T. S. H. (2002). Logistic regression analysis and reporting: A primer. Understanding Statistics: Statistical Issues in Psychology, Education, and the Social

Phi, H. L. (2011). Assessment of the effectiveness of flood adaptation strategies for HCMC. *Natural Hazards and Earth System Sciences, 14*(6), 1441-1457.

Popova, Y. (2017). Relations between Wellbeing and Transport Infrastructure of the Country. *Procedia Engineering, 178*, 579–588.

Pouliquen, L. (2000). Infrastructure and poverty. Background paper to the World Bank's, 2001.

Press. *Newby, P. (2014). Research methods for education (2nd ed). Routledge.*

Pritchett, L., Suryahadi, A., & Sumarto, S. (2000). Quantifying vulnerability to poverty: A proposed measure, applied to Indonesia (No. 2437). World Bank Publications.

Quarantel, E. (1995). Patterns of sheltering and housing in US disasters.*Disaster Prevention Management, 4*(3), 43–53.

Ravallion, M., & Bidani, B. (1994). How robust is a poverty profile? *The World Bank Economic Review, 8*(1), 75-102.

Ray, D. (2006). Aspirations, poverty, and economic change. *Understanding poverty, 409421.*

Reardon, T., Matlon, P., & Delgado, C. (1988). Coping with household-level food insecurity in drought-affected areas of Burkina Faso. *World Development, 16*(9), 1065-1074.

Renaud, F. G., Sudmeier-Rieux, K., Estrella, M., & Nehren, U. (Eds.). (2016). *Ecosystem-based disaster risk reduction and adaptation in practice* (Vol. 42). Springer.

Ribeiro, L. L., & Lemos Marinho, E. L. (2017). Gross National Happiness in Brazil: An analysis of its determinants. *EconomiA, 18*(2), 156–167.

Sabates-Wheeler, R., & Devereux, S. (2011). Transforming Livelihoods for Resilient Futures: How to Facilitate Graduation in Social Protection.

Samuel, J., Shah, N. and Hadingham, W (2005) Mobile Communications in South Africa, Tanzania and Egypt: Results from Community and Business Surveys. *The Vodafone Policy Paper Series, 2*, 44–52.

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: the necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine, 7*, 14.

Schlesselman, J. J. (1974). Sample size requirements in cohort and case-control studies of disease. *American journal of epidemiology*, *99*(6), 381-384.

Schultz, L., Folke, C., Österblom, H., & Olsson, P. (2015). Adaptive governance, ecosystem management, and natural capital. *Proceedings of the National Academy of Sciences*, *112*(24), 7369-7374.

United Nations (2016). sustainable development goals. Retrieved September 22, 2017, from https://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf.

Shiu, E., Hair, J., Bush, R. & Ortinau, D. (2009). *Marketing research*. London: McGraw-Hill.

Smit, B., & Wandel, J., (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change 16*(3), 282–292.

Smith, L., Frankenberger, T., Langworthy, B., Martin, S., Spangler, T., Nelson, S., & Downen, J. (2014). Ethiopia Pastoralist areas resilience improvement and market expansion (PRIME) Project Impact Evaluation. Report of the Interim Monitoring Survey, 2015.

Stephens, R. (2018). Dimensions of poverty measurement. *Policy Quarterly*, *9*(2).

Stern, D. I. (1997). The capital theory approach to sustainability: a critical appraisal. *Journal of Economic Issues, 31*(1), 145-174.

Stevens, A. H. (2012). Poverty transitions. The Oxford Handbook of the Economics of Poverty, 735–771.

Suppa, N. (2017). Transitions in Poverty and Deprivations: An Analysis of Multidimensional Poverty Dynamics.

Svendsen, G. T., & Svendsen, G. L. H. (2009). *Handbook of social capital: The troika of sociology, political science, and economics*.

Thorbecke, E. (2007). Multidimensional poverty: Conceptual and measurement issues. In *The many dimensions of poverty* (pp. 3-19). Palgrave Macmillan, London.

Thulstrup, A. W. (2015) Livelihood Resilience and Adaptive Capacity: Tracing Changes in Household Access to Capital in Central Vietnam. *World Development Vol. 74*, pp. 352–362.

Trabold-Nubler, H. (1991) The Human Development Index - A new development indicator? Intereconomics (September/October) 236-243.

Tucker, L. R., & MacCallum, R. C. (1997). Exploratory factor analysis. *Unpublished manuscript, Ohio State University, Columbus*.

Vasileiadou, E. & Safarzynska, K. (2010). Transitions: Taking complexity seriously. *Futures, 42,* 1176-1186.

Vincent, K. (2007). Uncertainty in adaptive capacity and the importance of scale. *Global Environmental Change 17*(1): 12-24.

Wagle, U. R. (2017). The Caste/Ethnic Bases of Poverty Dynamics: A Longitudinal Analysis of Chronic and Structural Poverty in Nepal. *The Journal of Development Studies*, *53*(9), 1430-1451.

Waheed Olowa, O. (2012). Concept, Measurement and Causes of Poverty: Nigeria in Perspective. *American Journal of Economics, 2*(1), 25–36.

Willems, S., & Baumert, K. (2003). Institutional Capacity and climate actions: organization for economic co-operation and development. *Environment Directorate. International Energy Agency, Publication. com/env/epok/iea/slt (200305)*, *442*.

World Bank Group. (2015). The Economic Impact of Infrastructure and Public - Private-Partnerships: Literature Review. World Bank Group.

World Bank. (2016). Poverty Overview. Retrieved September 25, 2017, from http://www.worldbank.org/en/topic/poverty/overview

Yohe, G. & Tol, R. S. J. 2002. Indicators for social and economic coping capacity--moving toward a working definition of adaptive capacity. *Global Environmental Change, 12*, 25-40.

Zikmund, W.G. & Babin, B.J. (2010). *Essentials of marketing research*. 4th ed. Mason, Ohio: South Western Cengage Learning.

ANNEXURES 1: FINAL QUESTIONNAIRE USED IN THE STUDY

AN INVESTIGATION OF HOUSEHOLD RELATIVE ADAPTIVE CAPACITY AND SUSTAINED GRADUATION FROM EXTREME POVERTY

Dear Respondent,

You are invited to participate in an academic research study conducted by Brian Kiswii, a Doctoral student from the Gordon Institute of Business Studies at the University of Pretoria.

The study aims at exploring to understand what adaptive capacities are critical for them to sustain graduation from extreme poverty. The findings from this study will inform the way the government (both county and national) and non-governmental institutions programme for poverty reduction by ensuring that the critical adaptive capacities are built.

Please note the following:

- This part of the study involves an interview. Your name or village will not appear in any quotes used from the interview and the answers you give will be treated as strictly confidential. Any results will be of such a nature that it will not be possible to identify you in person.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences
- Questions will be used to guide the interview, and you are urged to answer the questions of the interview as completely and honestly as possible. You may also volunteer additional information as you see applicable. The interview is planned to take one-and-a-half hour.

- The results of the study will be used for academic purposes as well as for lay articles and conference proceedings; however, identities of individuals will be kept confidential. The results of the study will also be published in an academic journal. We will provide you with a summary of our findings on request.

- Please contact my supervisor, Professor Margaret Chitiga-Mabugu (margaret.chitiga@up.ac.za) or co-supervisor, Professor Helena Barnard (barnardh@gibs.co.za) if you have any questions or comments regarding the study.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent to participate in the study on a voluntary basis.

_____ _____

Respondent's signature Date

MODULE A. IDENTIFICATION															
No.	**Question**	**Response**													
A1	Date of interview	**D**	**D**	**M**	**M**	**2**	**0**	**1**							
A2	County Name														
A3	Sub County Name														
A4	Location Name														
A5	HSNP Beneficiary (Codes 1= Yes, 2=NO														
A6	Name of Household Head														
A7	Household Code														
A8	**QUESTIONNAIRE IDENTITY CODE**														
	Coding Guide	**County Code**		**Sub County Code**		**Location Code**		**Village code**		**HH Code**					
A9	Enumerator Name					**Code**									
A10	Reviewed by (Researcher)					**Code**									
A11	Completed Questionnaire (Researcher Approved)	**0. Yes**				**1. No**									
A12	Questionnaire Complete	**0. Yes**				**1. No**									

MODULE A: HOUSEHOLD ROSTER

No									Response Codes			Skips	
B1													
LINE #	SEX	RELATIONSHIP TO HHH	AGE	Gendered (HH Type)	Highest Grade of education completed by adult HH members.	The main Source of Income (SEE CODES BELOW) CHOOSE ONE ONLY PER INDIVIDUAL)	How much (MONTHLY) do you earn from this activity (KES)? ONLY 1 ENTRY PER Individual	The Second Source of Income (SEE CODES BELOW) CHOOSE ONE ONLY Per INDIVIDUAL)	How much (MONTHLY) do you earn from this activity (KES)? ONLY 1 ENTRY Per Individual	The Third Source of Income (SEE CODES BELOW) CHOOSE ONE ONLY Per INDIVIDUAL)	How much (MONTHLY) do you earn from this activity (KES)? ONLY 1 ENTRY Per Individual	Has HH Income Increased, Decreased, or remain constant over the last 3 years?	Health Status (SEE CODES BELOW) CHOOSE ONE ONLY Per HH member)
	Sex of 1=Male 2=Female	Relationship to HHH (Code Below)	Age of <NAME> in years.										
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14
1													
2													
3													
4													
5													

Relationship to Head 01.HHH 02. Spouse of HHH 03. Child 04. grandson/daughter 05. Parent to HHH 06. Parent to Spouse of HHH 07. brother or sister of 01 08. worker/househelp Level of Education (B11) 01 = Preprimary 02 = Primary School 03 = High School 04 = College /University 05 = No formal school attended			Gendered HH Type (Parental status) 01= Female no Male (FHH) 02=Male no Female (MNF) 03= Male and Female (MHH) 04= Child no Adult (CNA)			Codes for Main Source of Income 01 = None; 02 = Crop production; 03 = Casual labour; 04 = Livestock production; 05 = Skilled trade/ artisan; 06 = Medium /large business 07 = Petty trade (firewood, charcoal, livestock		Codes for Second Source of Income 01 = None; 02 = Crop production; 03 = Casual labour; 04 = Livestock production; 05 = Skilled trade/ artisan; 06 = Medium /large business 07 = Petty trade (firewood, charcoal, livestock products, veg sales, etc.);		Codes for Third Source of Income 01 = None; 02 = Crop production; 03 = Casual labour; 04 = Livestock production; 05 = Skilled trade/ artisan; 06 = Medium /large business 07 = Petty trade (firewood, charcoal, livestock products, veg sales, etc.); 08 = Beer Brewing		1=Increased 2=Decreased 3=Stayed same	(SEE CODES BELOW) CHOOSE ONE ONLY PER INDIVIDUAL) 1=100% fit 2=Disabled 3=Sickly 4=Terminally Ill 5=Other
	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31
LINE #	Weight of HH Size (use HH size as identified in B1 above)	No of dependants and code	No of members suffering long term illness	Age of HH Head 1=<30 2=30-40 3=40-50 4=>50	Level of Education for HH Head (same codes as B9)	Level of Education for Highest Educated HH Member (same code as	What is the main source of cooking fuel? 1=firew	What is the main source of domestic water for the household? 1 =	Quality of household heads house? 1=mud walled/g	Distance to nearest access road in KMs?	Distance to nearest market in KMs?	Distance to nearest health facility in Kms?	Distance to nearest school in Kms?

	<Adult equivalents> <6=0.25, <12=0.5, <18=0.75, >18=1 1=<3 2=3-6 3=7-10 4=>10	<Adult equivalents> <6=0.25, <12=0.5, <18=0.75, >18=1 1=<3 2=3-6 3=7-10 4=>10				B9)	ood 2=charcoal 3=kerosene 4 = other	spring/stream/river 2=public piped kiosk 3=earth pans/sand dams 4=other	rass thatch 2 = grass walled/grass thatched 3 = zinc walled/zinc roofed 4=mud walled/zinc roofed 5=permanent				

MODULE B: HOUSEHOLD General EXPENDITURE

C01: Please tell me about the household's general expenditure on FOOD and NON FOOD ITEM in the last ONE month.			
1	Food Items	KES	
2	Non Food Items (Fuel, Soap, Clothing)	KES	
3	Essential Services (Health, Education, Livestock Health)	KES	
	Total Expenditure	KES	

MODULE C: FOOD ACCESS

C.1 Household Hunger Scale (HHS)					
No.	**HHS QUESTIONS**		**Response**	**Skips**	
Now I would like to ask you about the frequency of which any member of the HH experienced the following scenarios in the last on Month ;					
	What is the frequency with which the three events were experienced by any household member in the last four weeks:				
C01	No food at all in the house?	0 = No (Never) 1 = Rarely 2 = Sometimes 3 = Often			
C02	Went to bed hungry	0 = No (Never) 1 = Rarely 2 = Sometimes 3 = Often			
C03	Went all day and night without eating	0 = No (Never) 1 = Rarely 2 = Sometimes 3 = Often			

C.2 Household Food Insecurity Coping Strategies		
C04	In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your HH had to result to:	Frequency: Circle the number of days out of the past seven. 0 = never, 1= 1day, 2= 2days…..7 = every day
	1. eating less-preferred foods	0 1 2 3 4 5 6 7
	2. borrowing food/ money from friends and relatives	0 1 2 3 4 5 6 7
	3. limiting portions at mealtime	0 1 2 3 4 5 6 7
	4. limiting adult intake	0 1 2 3 4 5 6 7
	5. reducing the number of meals per day	0 1 2 3 4 5 6 7
	6. rely on wild fruits/ hunting	0 1 2 3 4 5 6 7
	7. harvest and consume immature green crops	0 1 2 3 4 5 6 7

C.3 Household Food Stocks, Access and Sources					
No.	Question		**Response**	**Skips/Checks**	
C05	Over the past 12 months, which of the following sources did your HH use for food?		INDICATE 01 FOR THE MOST IMPORTANT SOURCE IN THE LAST 12 MONTHS, 02 FOR THE 02nd MOST IMPORTANT …..UNTIL ALL SELECTED SOURCES ARE TAKEN CARE OFF.		
	a) Please rank the sources based on the proportion that provided the most food to the household.				
	b) Which of these food sources are seasonal and which season?				
	c) Which sources did you rely on during the times of stress?		Codes: D = Dry season; W = Wet season; Y = Year round		
	Food Source	Rank	Seasonality (D, W or Y)		Stress Periods
	a. Own food (includes crop and				

	livestock)			
	b. Purchases			
	c. Wild foods for household consumption			
	d. Payment in Kind (food)			
	e. Gifts (food)			
	f. Relief /food aid			
	g. School feeding for school going			

C.5 Household Borrowings and Debt								
C08	How much debt does the household have? KES	[_____]						
C09	How long (months) has the HH had this debt?	[_____] Months						
C10	Do you currently have access to credit? 1=Yes 2= No							
C11	If Yes in C10, what are the sources of credit? Source of borrowed money	Did you ever borrow money from <source> in the past year?	No. of times in a year	How much did you borrow from <source>? In SSP	Main use of borrowed money	Who made the decision to borrow from (SOURCES)?	Who makes the decision about use of money borrowed from (SOURCE)?	
1	Relative(s)							
2	Internal Lending eg VSLA, Table Banking							
3	Money lender/ private savings collector							
4	Government (Youth /Women Funds, Uwezo)							
5	NGO grants							
6	Religious Institution							
7	MHHI							
8	Bank							

Codes for use of money: 01=buy food, 02=buy non-food household necessities (soap, paraffin), 03=pay school fees, uniform, books, 04=pay for medical care; 05=burial/ funeral; 06=bride price, 07=hire labour, 08=buy agricultural inputs, 09=buy livestock, 10= start business; 11 = other (specify)

Codes for decision making; 01 = self; 02 = partner/spouse; 03 self & partner; 04 = other HH member; 05 = self & other HH member; 06 = None

C12	Do any of your household members have cash saving?	1=Yes 0=No	ID of household member Owning the Saving [_____]	Where is the savings held? [_____]	What is the primary purpose of the saving? [_____]

		Codes: 1=In cash at home, 2= With MHHI, 3=With Bank, 4=With Savings group, 5=Other (specify)	Codes : 1=To use in emergencies, 2=To buy livestock, 3=For non-livestock business investment, 4=Other (specify)

MODULE D: HOUSEHOLD ECONOMY

D.1 Livestock Producing HHs

	D22.Types of livestock owned.	D.23. Number of <Livestock> owned today.	D.24. How did your raise your <Livestock> in the last season? (Circle all that apply)	D25. What is the main water source for the <Livestock> in the dry and rainy season?		D26. Has this <Livestock> been vaccinated against or treated for any disease?	D27. Who vaccinated or treated the <Livestock>?	D28. Where were the vaccines or drugs got from?	D29. How much did you spend on the Veterinary services for the <Livestock> in the last 12 months?	D30. What system of selling /buying is used for <Livestock> in the market ?
				Dry Season	Rainy Season					
	Cattle		1 2 3 4 5 6 7			0= No 1= Yes				
	Goats		2 2 3 4 5 6 7			0= No 1= Yes				
	Sheep		3 2 3 4 5 6 7			0= No 1= Yes				
	Poultry		4 2 3 4 5 6 7			0= No 1= Yes				
	Camel		5 2 3 4 5 6 7			0= No 1= Yes				

		Livestock Feeding 1 = Purchased feeds. 2 = Paddocks 3= Community pastures 4= Home produced fodder 5= semi zero grazing 6= pen fattening		Livestock Watering 01= river/stream 02= ponds/ puddles 03 =swampy area/ 04= borehole 05= dam 06= shallow well 07= Other(specify)		Who treated /vaccinated 1 = Myself 2 = Govt. vet 3 = Paravet/ CAHW 5 = My son /daughter	Source of drugs/ vaccines 1 = Government 2 = Vet shop 3 = Brought by paravet/ CAHW 4= Black market 5= Not sure		01=Auction 02=One on one 03=Animals are sold by weighing 04=Farm gate

		D35. What is the MAIN constraint to livestock production?	D.36. How much would one animal fetch in the market today? (Average size) KES	D.37 How many <Livestock> did you sell/ consume in the last ONE year? Sold [_____]Consumed [_____]		D.38 Why did you sell the <Livestock>?	D.39 In what form did you dispose the <Livestock>?		
	Cattle								
	Goats								
	Sheep								
	Poultry								
	Camel								

	Codes for D35: 01 = insecurity; 02 = low prices; 03 = parasites and diseases 04 = lack of pastures; 05 = drought; 06 = lack of knowledge 07 = access to veterinary services; 08 = cost of services; 09= Other (specify)	Codes for D38: 01 = To buy food; 02= To meet medical expenses 03 = To pay for education; 04= To take care of other household expenses; 05= I offload some animals after sometime	01=Live animal 02 = Meat

D40	Which of the following services do you have access to? Where is the nearest service you have access to located? (Circle all that apply)	Service	Location	
		01. Para vet	01 = County; 02 = Sub County; 03 = Location; 04 = Village 99 = Services not available	
		02. Drug store	01 = County; 02 = Sub County; 03 = Location; 04 = Village 99 = Services not available	
		03. CAHW	01 = County; 02 = Sub County; 03 = Location; 04 = Village 99 = Services not available	
		04. Livestock Ext services	01 = County; 02 = Sub County; 03 = Location; 04 = Village 99 = Services not available	

D41	If "Yes", have you used any of their goods/services in the last six months?	0 =No, 1 = Yes		
D42	Did any member of this household receive any training on livestock in the last 12 months?	0 =No, 1 = Yes		If No, skip D44

D43	Who trained you and what were you trained on? (Circle relevant all trainers)			
	Organization	Type of training (See codes below)	Length of training (Day, week, months)	
	1= NGO/CBO			
	2= Academic Institutions/Research Inst			
	3= Private companies			
	4= Other farmers			
	5= Government livestock ext workers			
	Codes for type of training: 1 = Animal husbandry; 2 = Fodder production; 3 = Parasite and disease control; 4 = range management; 5 = breeding; 6 = Feeding; 7 = Housing; 8 = vaccination; 9 = clean milk production; 88 = other (specify) _ _ _			

D44	How do you address livestock production during the stress periods (drought or disease outbreaks)?						
	Codes: 01 = Migration to areas with pastures & water 02 = Offload to the market 03 = Slaughter for household consumption 04 = Let to relatives 05 = Wait & see if it will rain 06 = Others (Specify):_____						

D2.2 Market Access						
D45 Product		D46 Where do you sell livestock product/ by products]?	D47 What is the distance (kms) from your home to this market?	D48 Is this market place (you have mentioned) your preferred market place? 1 = Yes; 2 = No	D49 (If no ask) Why don't you like to sell (livestock product/ byproducts] in this market?	D50 Do you get market information? 1 = Yes; 0 = No (If "Yes", go to D61; IF 'NO" go to D3)
Crop						
Product						
		Where to sell codes (D54): 1 = Local market; 2= District market; 3 = Distant market; 4= Livestock trader; 5 = Cooperative/Marketing group; 6= Restaurant; 7=Farm gate; 8 = Others (Specify): _____			Codes for D57: 1=Limited buyers; 2=Low prices 3=Far from home; 4=Others (specify): _____	
D53	How often the most does commonly used market place for livestock / farm produce open?					
	Codes: 01 = Everyday 02=Once a week 03=Twice a week 04=Once a month 05=Twice a month 06=Others (Specify): _					
D54	What type of road from the common livestock/ farm produce market to the next bigger market centre?					
	Codes: 01=Tarmac 02=All weather road					
D2.3 Information Access						
D51	How often do you get market information?			Codes: 01 = Daily; 02 = Weekly; 03 = Fortnightly; 04 = Monthly 05 = Once in a while		
D52	Did you receive any information on [topic] in the last year?			1 Yes 2 No	What was your main source of information about [topic]?	
a)	Long-term changes in weather patterns					
b)	Rainfall prospects / weather prospects for coming season					
c)	Water available and prices in local boreholes, shallow wells etc.					
d)	Methods for animal health/husbandry					

e)	Livestock disease threats or epidemics		
f)	Current market prices for live animals in the area		
g)	Market prices for animal products		
h)	Grazing conditions in nearby areas		
i)	Conflict or other restrictions on access to grazing		
j)	Business and investment opportunities		
k)	Opportunities for borrowing money		
l)	Market prices of the food that you buy		
m)	Child nutrition and health information		
Codes: 1=Rural development agents, 2=Clan/traditional leaders, 3=Formal school teachers, 4=Neighbours or friends, 5=Government officials, 6=Family members, 7=Newspaper, 8=Radio / TV, 9=Internet or SMS			

D.4 ASSET INVENTORY				
D55. As of today, how many of the following assets do your household own? (If none, write '0'.) For livestock, include any animals that belong to you, but are being raised by other households. Do not include any animals that you are rearing for someone else but do not belong to you.				
	Asset	Number owned today	Number owned one year ago	If the number owned today is different from one year ago, why? [See code below and circle ALL that apply]
	Livestock			
1. 1	Cattle			1 2 3 4 5 6 7 8 9 10 11 12 13 14
2. 2	Goats			1 2 3 4 5 6 7 8 9 10 11 12 13 14
3. 3	Sheep			1 2 3 4 5 6 7 8 9 10 11 12 13 14
4. 4	Donkeys			1 2 3 4 5 6 7 8 9 10 11 12 13 14
5. 5	Poultry			1 2 3 4 5 6 7 8 9 10 11 12 13 14
6. 6	Camels			1 2 3 4 5 6 7 8 9 10 11 12 13 14
	Productive assets			
7. 13	Traditional beehive			1 2 3 4 5 6 7 8 9 10 11 12 13 14
8. 14	Modern beehive			1 2 3 4 5 6 7 8 9 10 11 12 13 14
9. 25	Household Woodlot			1 2 3 4 5 6 7 8 9 10 11 12 13 14
10. 26	Household vegetable garden			1 2 3 4 5 6 7 8 9 10 11 12 13 14
	Household goods			
11. 27	Charcoal/ wood stove			1 2 3 4 5 6 7 8 9 10 11 12 13 14
12. 28	Improved fuel-efficient stove			1 2 3 4 5 6 7 8 9 10 11 12 13 14
13. 29	Leather/ wood bed			1 2 3 4 5 6 7 8 9 10 11 12 13 14
14. 30	Modern chair			1 2 3 4 5 6 7 8 9 10 11 12 13 14
15. 31	Modern table			1 2 3 4 5 6 7 8 9 10 11 12 13 14
16. 32	Wheelbarrow			1 2 3 4 5 6 7 8 9 10 11 12 13 14
17. 33	Animal cart			1 2 3 4 5 6 7 8 9 10 11 12 13 14

	Consumer durables				
18. 34	Mobile telephone			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
19. 35	Radio			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
20. 36	Television			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
21. 37	Bicycle			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
22. 38	Motor bike			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
23. 39	Donkey cart			1 2 3 4 5 6 7 8 9 10 11 12 13 14	
Codes: Differences in asset ownership 1 = We were forced to sell the asset to buy food 2 = We were forced to exchange the asset for food 3 = We were forced to sell the asset to pay for health expenses 4 = We were forced to sell the asset to pay for education expenses 5 = We s0ld the asset to meet social obligations (for example. wedding, funeral) 6 = We used the asset in a social occasion (for example. wedding gift) 7 = We sold the asset for another reason (specify): _____				8 = The asset was stolen/raided 9 = Livestock died or was slaughtered 10 = Livestock was sold as an income-generating activity 11 = Livestock reproduced 12 = We bought this asset 13 = Someone gave us this asset for free 14 = Routine asset/animal sales 15=Other (specify): _____	

D60	If the household sold any of the following assets in the last 12 months to meet household needs due to stress, which of the statements best describes the extent to which your household has been able to recover or re-purchase the asset?		
	Asset group (as per the asset inventory above)		Codes: 01 = Unable to recover/ re-purchase/ replace the asset 02 = Able to recover /re-purchase/ replace some of the asset 03 = Able to recover/ re-purchase/ replace all the assets
	a. Livestock (does not include routine livestock sales)		
	b. Productive assets		
	c. Household goods		
	d. Consumer durables		

D61	Did you lose any of the following household asset as a result of drought, flood, conflict or pests in the past two years? (May 2012 to May 2104)	If yes, what was the reason? 1= Drought 2= Flood 3= Conflict 4=Pests and Diseases 99 = N/A					
1	Cattle		1	2	3	4	99
2	Goats		1	2	3	4	99
3	Sheep		1	2	3	4	99
4	Donkeys		1	2	3	4	99
5	Poultry		1	2	3	4	99
6	Camels		1	2	3	4	99
7	Productive assets						
8	Traditional beehive		1	2	3	4	99
9	Modern beehive		1	2	3	4	99
10	Fruit trees		1	2	3	4	99
11	Household Woodlot		1	2	3	4	99
12	Household vegetable garden		1	2	3	4	99
D62	What does your household use for cooking?	1= Fuel efficient stove 2= Open fire 3= Traditional Charcoal stove					

NB: Cattle equivalent units (CEU) are based on mean price ratios between different livestock types (for instance; cattle = 1, goat = 1.4, sheep = 0.1, chicken = 0.02)

MODULE E: SOCIAL AGENCY			
No.	**Question**	**Response**	**Skips**
F1.	Is there a HH member involved in community associations, groups, etc?	0 = No1 = Yes	If no, skip to F3
F2.	If yes (to the above question), what kind of an association or group is the member part of?		
	Codes: 1 = Farmers' Cooperative society; 2 = Merry-go-round; 3 = Village Savings & Loans Association (VSLA); 4 =Fishing Groups; 5 = Pastoralist or Farmer Field Schools; 6 = Livestock Production Group; 7 = Burial society; 8 = Other (specify)_____		
F3.	Is your household involved in either of the following value chain addition activities (multiple responses)?		
	Codes: 1 = joint purchase of inputs; 2 = bulking transporting; 3 = sorting produce; 4 = grading produce; 5 = processing produce; 6 = trading/marketing (wholesale, retail, export); 7 = Other (specify):_____; 99 = No value chain activity undertaken		
F4.	Has your household/member of household been trained in (Multiple responses)?		
	Codes: 1 = business management; 2 = business accounting/ financial literacy; 3 = marketing and pricing; 4 = business development; 5 = micro-finance; 99 = No business training		
F5.	Does membership to any of the organizations/groups to which members belong entail regular fee payments?	1 = yes 2 = No	
F6.	Does the household have a member located away from home that can bail it out in case of an emergency?	1 = yes 2 = No	
F7.	What is the composition of the household's social network?		
	Codes: 1=family and friends outside the household, 2 = 1 plus traditional leadership within the village, 3=1,2 and lower formal government, 4= 3 and higher levels of government (NGO, chief, extension workers)		
F8	Number of local groups to at least one household member belongs		
	Codes: 1=members <2 groups; 2=membership in 2-4 groups; 3=membership 5-7 groups; 4=membership >7 groups		
F9.	Richness of contact and or groups to which household has links?		
	Codes: 1=contacts are resource poorer than household, 2=lower resource access, 3=medium level access, 4=high access level		
F10.	In a worst case scenario, can the household rely on friends and relatives to survive for temporary period as long as the tough times persist?	1 = yes 2 = No	
F11	If yes above, For how long at maximum? 1= 1 week, 2= 2 weeks, 3 = 1 month, 4 = > 1 month, 5 = Do not Know		

MODULE G: SHOCKS

No.	Question	1=yes 2 = No	Rank the 3 most important shocks	When did the shock(s) occur? Frequency
F12	Has the household been affected by the following events within the past 5 years?			
	Climate Shocks			
1	Drought related crop failure			
2	Livestock/crop disease			
3	Very bad harvest			
4	Excessive rains			
5	Erosion			
6	Conflict shocks			
7	Destruction of assets			
8	Livestock theft			
9	Damage to house due to raids or clan conflict			
10	Loss of land due to conflict			
	Economic Shocks			
1	Sharp food price increase			
2	Unavailability of agricultural or livestock inputs			
3	No demand for agricultural or livestock products			
4	Increase in price of agricultural or livestock inputs			
5	Drop in price of agricultural or livestock products			
6	Death of income earning household member			

F13	What is your household perceived ability to recover from various shocks?	
	Index scale of 1-5: From "Did not recover" to "Recovered and better off" to "Not affected"	
	Climate Shocks	Perceived Ability
1	Drought related crop failure	
2	Livestock/crop disease	
3	Very bad harvest	
4	Excessive rains	
5	Erosion	
6	Conflict shocks	
7	Destruction of assets	
8	Livestock theft	
9	Damage to house due to raids or clan conflict	
10	Loss of land due to conflict	
	Economic Shocks	

1	Sharp food price increase	
2	Unavailability of agricultural or livestock inputs	
3	No demand for agricultural or livestock products	
4	Increase in price of agricultural or livestock inputs	
5	Drop in price of agricultural or livestock products	
6	Death of income earning household member	
F13	What did the household do to pull out of the past shock?	
	Codes: 1 = reduced consumption/expenditure; 2 = assisted by relatives/friends; 3 = borrowed from contacts/institutions; 4 = sold assets, 5=other (specify)_____	
F14	Did the household recover from the impact of the Shock? 1=Yes, 2= No. If yes move to F15, If NO move to F16;	
F15	To what extent were you and your household able to recover?	
	Codes: 1 = Recovered to same levels as before the shock, 2=Recovered and better off, 3=Not affected	
F15	What factors constrained the household from full recovery?	
	Codes: 1 = lost all assets; 2 = lost main income sources; 3 = sank into debt; 4 = not able to access productive assets, 5=no access to safety nets; 6 = other (specify)	
F16. Household Shock Coping Strategies		
F16	In the event of a shock what strategies does the household use to survive the shock? (multiple response)	
Change livestock and land holdings		
	Send livestock in search for pasture	
	Sell livestock	
	Slaughter livestock	
	Lease out land	
Migration		
	Migrate (some members)	
	Migrate (whole family)	
	Send member to a relative	
Coping strategies to reduce current expenditure		
	Take children out of school	
	Move to less expensive house	
	Reduce food consumption	
Coping strategies to get more food or money		
	Take up wage labour	
	Sell household items	
	Sell productive assets	
	Take a loan	
	Send children to work	
	Receive money or food from family members	
	Receive food from NGO/Gov	
	Remittances	
	Use money from savings	

MODULE G: ASPIRATIONS AND CONFIDENCE TO ADAPT

G1	Please tell me which one of these two views you most agree with.	1. Each person is primarily responsible for his/her success or failure in life. 2. One's success or failure in life is a matter of his/her destiny. 8. DK					
G2	Please tell me which one of these two views you most agree with.	1. To be successful, above all one needs to work very hard. 2. To be successful, above all one needs to be lucky. 8. DK					
G3	Are you willing to move somewhere else to improve your life?		1 = Yes 2 = No 8 = DK				
G4	Do you agree that one should always follow the advice of the elders?		2 = Yes 2 = No 8 = DK				
G5	Do you communicate regularly with at least one person outside the village?		3 = Yes 2 = No 8 = DK				
G6	During the past week, have you engaged in any economic activities with members of other clans? For example, farming, trading, employment, borrowing or lending money.		4 = Yes 2 = No 8 = DK				
G7	How many times in the past month have you got together with people to have food or drinks, either in their home or in a public place?					8-DK 9-Refused	
G8	How many times in the past month have you attended a church/mosque or other religious service?					8-DK 9-Refused	
G9	In the last year, how many times have you stayed more than 2 days outside this village?					8-DK 9-Refused	

Below is a series of statements that you may agree or disagree with. Using the scales below indicate your agreement with each item.

		Strongly disagree	**Disagree**	**Slightly disagree**	**Slightly agree**	**Agree**	**Strongly agree**
G10	I feel like what happens in my life is mostly determined by powerful peoples.	1	2	3	4	5	6
G11	My experience in my life has been that what is going to happen will happen.	1	2	3	4	5	6
G12	My life is chiefly controlled by other powerful people.	1	2	3	4	5	6
G13	It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	1	2	3	4	5	6
G14	I can mostly determine what will happen in my life.	1	2	3	4	5	6
G15	When I get what I want, It is usually because I worked hard for it.	1	2	3	4	5	6
G16	My life is determined by my own actions.	1	2	3	4	5	6
G17	Most people are basically honest.	1	2	3	4	5	6

G18	Most people can be trusted.	1	2	3	4	5	6
G19	I trust my neighbours to look after my house if I am away.	1	2	3	4	5	6

ANNEXURES 2 FOCUS GROUP DISCUSSION GUIDE

Dear Respondents,

You are invited to participate in an academic research study conducted by Brian Kiswii, a Doctoral student from the Gordon Institute of Business Studies at the University of Pretoria.

The study aims at exploring to understand what adaptive capacities are critical for them to sustain graduation from extreme poverty. The findings from this study will inform the way the government (both county and national) and non-governmental institutions programme for poverty reduction by ensuring that the critical adaptive capacities are built.
Please note the following:

- This part of the study involves an interview. Your name or village will not appear in any quotes used from the interview and the answers you give will be treated as strictly confidential. Any results will be of such a nature that it will not be possible to identify you in person.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Questions will be used to guide the interview, and you are urged to answer the questions of the interview as completely and honestly as possible. You may also volunteer additional information as you see applicable. The interview is planned to take one-and-a-half hour.
- The results of the study will be used for academic purposes as well as for lay articles and conference proceedings; however, identities of individuals will be kept confidential. The results of the study will also be published in an academic journal.

Please sign the form to indicate that:

- You have understood the information provided above.
- You give your consent to participate in the study on a voluntary basis.

1_____
2._____
3_____
4_____
Respondents signatures
Date

FGD 1: KEY SHOCKS AND STRESSORS

1. What types of shocks are experienced? What are the most challenging changes that are affecting the community (stressors)? *Probe beyond environmental hazards. Explore:* Ecological stressors (for example. deforestation/ degradation), economic shocks/food shortages, social & political stressors. *Individually explore nuances of each shock/ stressor mentioned.*
    - How long do they last (for example., days, months)? How frequently do they occur?
    - How many people are affected?
2. How do they affect the community as a whole?
    - Which, if any, groups are disproportionately affected by the shocks/ stressors (sex, age and wealth status)? Why?
3. What kinds of income earning or food production activities are households engaged in?
    - Describe how these activities are affected by various disturbances? (Livestock diseases, market disturbances, cross border/tribal conflict, flash flood, drought, deforestation, climate change, etc.).
    - Are some activities less susceptible to shock than others? More susceptible? *Probe.*
    - Which shocks/ stressors have the greatest impact on these income earning activities?
4. How do households and the community respond to the disturbance? *Probe.* Any differences in gender, age and wealth status?
    - Which, if any, groups are better able to manage the various disturbances? Why?
5. Do households and the community know about disturbances in advance? Which ones? Source of information?
    - If yes, what actions, if any, did the households and community leaders and members take together to reduce the negative impact of the shock on the community?
    - What actions were most effective in reducing negative impact? (rank effectiveness if multiple actions taken)

- If no actions were taken, why not?

- Do you think households in your community successfully respond to disturbances they are exposed to? Which ones? Why or why not?
- What do you think are the main differences between households in your community that successfully responds to disturbances and ones that does not?
- What do you think needs to change in this community to make it less vulnerable to *[**fill in specific shocks**]?*

6. Do households and the community get any external assistance to overcome disturbances? If yes, who provides the assistance? Is the assistance appropriate and timely to mitigate the impact of the shock?

FGD 2: COPING, RECOVERY AND ADAPTATION

---

i) What actions do people take to cope with various negative impacts of *[**fill in specific shocks**]*?

- What actions are most effective?
- Do households work together as a community to cope with each shock? How?
- Describe any project interventions that enable households and communities to cope better with shocks and stressors?
- Do households within the community share resources? Who? With whom?

i. Who gets priority when sharing resources? *(**ask participants to do a simple ranking of resources that are shared, and who gets priority**)*

ii) Is the community engaged in collective action to deal with disturbances?

iii) Are community leaders effective at organizing support for all members of the community?

iv) Do you think households within the community successfully recovered from the 2011/12 drought? Why or why not?

v) What do you think are the main differences between households that successfully recovered from 2011/12 drought and ones that did not?

vi) For those households that recovered, what were the factors behind their recovery? What caused the other households not to recover? Rank the two sets of factors.

vii) Describe any project interventions that enable households and communities to recover shocks and stressors? Effective? Why? Why not?

viii) What have the households within the community learned from previous experience about how to respond to shocks and stressors?

- Any efforts to respond differently to a recurring disturbance? Describe.
- Have households changed main income/ food production activities as a result of disturbances? *Probe.*

FGD 3: SOCIAL CAPITAL, NGO/GOVERNMENT SUPPORT

1. Are people in the community supporting each other to recover? How?
2. What are people doing to help each other be productive again (for example., labour exchange, loaning inputs, passing on information)?
3. Is any population group excluded from community support? Who? Why?
4. Any informal social support for female and child headed households?
5. Has level of available community social support changed over time? How? Why? For whom? By whom?
6. How are shocks affecting relationships within the community?
    a. Changes in levels of trust due to the disturbance? Changes in levels of crime? New or renewed conflict?
    b. In the community? With other communities?
    c. If yes, how do households and the community deal with this conflict?
7. Do communities or individuals in other locations assist households within the community to cope with shocks? Describe. Are there any differences in social support across villages? Describe.
8. Are people breaking up into subgroups to manage shocks? How does this affect the community's ability to cope?
9. Do people in the community use their connections to people in authority to access support (formal safety nets, services)? How?

10. What type of formal safety nets/ services are most valued by people in this community? Why.
11. Types of coping strategies when income (on and off-farm) and/ or food production is not enough?
    a. Describe reliance on other households during income and food shortages; What kind of support? Describe changes, if any, in HH-to-HH support in last 5 years? Why?
12. Examples of HH and community adaptations to reduce impact of long-term shocks (specifically climate change; deforestation/ forest degradation)
13. Role of the community in reducing the impact of quick-onset shocks (specifically, flash floods, destructive winds)? Slower/ gradual stressors? Describe changes, if any, in community role in the last 5 years. Why?
14. Role of organizations in managing shock and helping households to escape poverty traps:
    a. Government
    b. NGO, community organizations
    c. Describe changes, if any in the past 5 years?
15. What government or NGO programs are active here? Describe activities. Who benefits and how? Who does not participate/benefit? How have these programs affected the community? Positive changes /Negative changes; effects on community sharing?
16. Has the community used its links to:
    a. Obtain government services? Which ones? For whom?
    b. Advocate for change? On what issues? What was the result?
    c. Gain access to formal safety nets? Examples?

FGD 4: HOUSEHOLD POVERTY CATEGORIZATION

Using the following 5 point criteria: i) *low asset holding, ii) reliance on low productivity activities, iii) low mobility (labour), iv) high percentage of household expenditure on food, and, v) high reliance on external support, classify the HSNP benefiting households in your community into the categories below:*

Category A - Poor in 2009 and poor now (Not Graduated from Poverty)
Category B - Poor in 2009 and not poor now (Graduated from Poverty)
Category C - Not Poor in 2009 but Poor Now (Become Poor)

Based on the categorization above;

i) What are causal factors responsible for the escape or fall-back into poverty at household level;

ii) What strategies did households employ to recover from a known shock (adaptive capacity factors) – for this study, the 2011 drought;

iii) Construct a "Ladder of Life," or a continuum describing degrees of well-being, and then, through consensus, decide on adaptive capacity factors that hold households up the "Ladder of Life" in the event of a shock – with the 2011 drought used as the known shock.

iv) What role did the HSNP play in support household recovery from shocks?

v) Under HSNP2, some households received their payments every two months, while others received theirs in lump sum after 1 years of delay; were such cases reported in your community? Were there significant differences in the graduation status of these groups? Would you relate this observation to the way the household received their transfers?

[i]The HEA is a quantitative approach advanced by Save the Children and the Food Economy Group (FEG). HEA is a livelihoods-based framework for analyzing the way people obtain access to the things they need to survive and prosper. It helps determine people's food and non-food needs and identify appropriate means of assistance, whether short-term emergency assistance or longer term development programmes or policy changes. It is based on the principle that an understanding of how people make ends meet is essential for assessing how livelihoods will be affected by wider economic or ecological change and for planning interventions that will support, rather than undermine, their existing survival strategies. A framework not a field method HEA is an analytical framework. It defines the information that needs to be gathered and the way in which it should be analyzed in order to answer a particular set of questions.