

Bringing Prosperity to the Poor:
A Systematic Review of Microfinance and Agricultural Livelihoods in Sub-Saharan Africa

by

Balikisu Osman

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Microfinance is popularly described as small scale financial services to lower-income groups which may take the form of not only micro-savings and micro-loans but also, insurance, fund transfers and assets leasing packages. The assumption is that, access to these financial services enables poorer households to secure capital for poverty reduction. In spite of its prominence, the ability of microfinance services to contribute to these promising outcomes remains inconclusive. It is somewhat debatable that poorer farmers in Sub-Saharan Africa may commit themselves to savings or credit or insurance packages to support their livelihoods. Particularly, they earn marginal income from their farming activities and have little in reserve for immediate expenses. An equally important aspect of the contention is that most of them lack the financial knowledge to utilize microfinance services. The debate regarding the effectiveness of microfinance and its academic and policy dimensions informed this research to explore the range of microfinance services available to poor farming households in Sub-Saharan Africa and to analyze their outcomes on livelihood sustainability and poverty reduction. At present, numerous empirical methodologies have been used to assess and document the impacts of microfinance on diverse aspects of poor people's lives. This research adopted a systematic review approach where findings from eighteen identified studies were synthesized to produce evidences for research, policy and practice. Findings from the review suggest that various forms of microfinance services are available for the poorer farmers except micro-leasing. The evidences confirm a positive effect of microfinance services on farm productivity, but mixed impact on livelihood sustainability and poverty reduction. In the end, the review presents a useful framework and provides suggestions for practitioners and policy makers to critically assess the ease of access, feasibility of use and the institutional environment of poor households when designing microfinance interventions and policies. It also calls on researchers to re-evaluate the feasibility of under-used micro-leasing services which have greater potential for the poor to accumulate assets, build security and reduce poverty.

Keywords: Microfinance, livelihoods, productivity, investment, poverty reduction

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Table of Contents

Author's Declaration	ii
Abstract	iii
Acknowledgement	iv
List of tables	viii
List of figures	ix
List of Acronyms	x

CHAPTER ONE

INTRODUCTION

1.1 Background	1
1.2 Research Problem	2
1.3 Research Questions	4
1.4 Research Methodology	5
1.5 Research Structure	6

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction	7
2.1 Bottom of the Pyramid (BoP)	8
2.1.1 Poverty Reduction at the base of the pyramid	10
2.2 Microfinance as Financial Inclusion	15
2.2.1 Importance of Financial Inclusion for the poor	15
2.2.2 Types of Microfinance Services for the poor	18
2.2.2.1 Micro-savings	18
2.2.2.2 Micro-credit	20
2.2.3.3 Micro-insurance	22
2.2.2.4 Micro-leasing	25
2.2.2.5 Fund Transfer	27
2.2.3 Microfinance in Sub Saharan Africa	29
2.3 Microfinance and Poverty Reduction	30
2.3.1 Increase Income	31

2.3.2 Increase Investment in Human Development	33
2.3.3 Increase Investment and Assets Accumulation	34
2.3.4 Women Empowerment	36
2.3.5 Reaching the poor	38
2.3.6 Impact Measurement Challenges	40
2.4 Sustainable Livelihood and Poverty Reduction	42
2.4.1 Sustainable Livelihood	43
2.4.2 Livelihood Assets	44
2.4.3 Vulnerability Context	46
2.4.4 Transforming Structures and Processes	47
2.4.5 Livelihood Strategies and Livelihood Outcomes	48
2.4.6 Application and Critical Perspective	48
2.5 Conclusion	51

CHAPTER THREE METHODOLOGY

3.0 Introduction	52
3.1 Research Approach	52
3.1.1 Framing the question for the review	53
3.1.2 Identification of the relevant work	56
3.1.3 Quality assessment of identified studies	58
3.1.4 Summarizing the evidences	60
3.1.5 Interpreting the findings	61
3.2 Validity and Reliability	62
3.3 Conclusion	62

CHAPTER FOUR RESULTS AND SUMMARY OF FINDINGS

4.0 Introduction	63
4.1 Studies Identification Processes	63
4.2 Description of the Identified Studies	67

4.2.1 The Population	67
4.2.2 Intervention	71
4.2.3 The Study Design	73
4.2.4 Outcomes	75
4.2.4.1 Income	75
4.2.4.2 Asset Accumulation	78
4.2.4.3 Farm Investment	81
4.2.4.4 Human Development	83
4.2.4.5 Women Empowerment	86
4.3 Summary of Findings	87
4.3.1 Microfinance services used for agricultural livelihoods	87
4.3.2 Microfinance services and agricultural productivity	88
4.3.3 Microfinance services, agricultural livelihood sustainability and poverty reduction	89
4.4 Conclusion	93

CHAPTER FIVE

DISCUSSION OF FINDINGS AND CONCLUSION

5.0 Introduction	94
5.1 Discussions	94
5.1.1 Which microfinance services are used for agricultural activities?	94
5.1.2 Do microfinance services enhance farm productivity?	95
5.1.3 Do microfinance services enhance livelihood sustainability and poverty reduction?	96
5.2 Strengths and Limitations	98
5.3 Conclusion	99
5.4 Implications	100
References	103
Appendices	112

LIST OF TABLES

Table 2.1 Explanations for Sustainable Livelihood Capitals	45
Table 3.1 List of the search databases and resources	57
Table 3.2 Search terms for identifying individual studies	58
Table 3.3 Quality assessment criteria for included studies	59
Table 4.1 Summary of initial search results	63
Table 4.2 Methodological relevance and quality of the included studies	66
Table 4.3 Details of studies included in the review	69
Table 4.4 Direction of microfinance impact on income	75
Table 4.5 Direction of microfinance impact on asset accumulation	78
Table 4.6 Direction of impact on farm investment	81
Table 4.7 Direction of impact on human development	84
Table 4.8 Direction of impact on women empowerment	86

LIST OF FIGURES

Figure 2.1 The Sustainable Livelihood Framework	44
Figure 4.1: Search results and the processes involved in selecting and screening studies	65
Figure 4.2: Graphical summary of findings on the direction of impact of microfinance services, farm productivity and poverty reduction	92
Figure 5.1: A Framework for Analysis on Microfinance, Poverty Reduction and Agricultural Livelihoods	101

LIST OF ACRONYMS

BoP	Bottom of the Pyramid
CCK	Communications Commission of Kenya
CGAP	Consultative Group to Assist the Poor (CGAP)
DFID	Department for International Development
FINCA	Foundation for International Community Assistance
FOCCAS	Foundation for Credit and Community Assistance
GDP	Gross Domestic Product
ICT	Information Communication Technology
ILO/STEP	International Labour Organization/ Strategies and Tools against Social Exclusion and Poverty
MFI	Microfinance Institutions
MMT	Mobile Money Transfer
MRFC	Malawi Rural Finance Company
NASFAM	National Smallholder Farmers Association of Malawi
OA/FFH	Oxfam America/Freedom from Hunger
PICOT	Population, Intervention, Comparative intervention, Outcome and Type of study design
PRIDE	Promotion of Rural Initiatives and Development Enterprises
PAR	Portfolio at Risk
RCT	Random Control Trials
RMFP	Rural Microenterprise Finance Project
ROCSAs	Rotating Savings and Loans
SfC	Savings for Change
SHGs	Self Help Groups
SLF	Sustainable Livelihood Framework
TSP	Transforming Structures and Processes
USAID-AIMS	United States Agency for International Development-Assessing the Impact of Microenterprise Services
WRI	World Resource Institute

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Access to finance for investing in and sustaining rural agricultural livelihoods remains a challenge in many developing countries where formal financial institutions are scarce, education regarding financial systems is low and collateral to secure finance is limited (Meyer 2013; Yadav, 2014). Over the past decades, rural households have devised innovative and collaborative means to invest in farming activities and to meet lifecycle needs – such as weddings, child birth and funeral celebrations – through exchange of non-cash and in-kind values. These benefits are mutually accrued within membership of shared interest groups, through kinship ties and neighborhood networks. In recent times however, microfinance has become the dominant buzzword to provide financial services to these lower-income groups, in the form of not only micro savings and loans, but also insurance and some forms of fund transfers or asset leasing (Christen et al., 2004).

Since the 1990s, microfinance has served as an important development policy and poverty reduction approach. At various Microcredit Summit Campaigns, especially the 2013 Summit held in Manila, Philippines, advocates strongly stressed that microfinance services could help the poor find their way out of poverty and eradicate various forms of deprivation by 2030 (Microcredit Summit, 2013). Earlier in 2005, the United Nations Secretary General, Kofi Annan, described microfinance as a wise investment in human capital, with the potential to increase the economic power of women, especially female-headed households and their entire families (United Nation's Year of Microfinance, 2005). The assumption is that if poorer households are given microfinance, either in the form of credit or loan, investment in livelihood activities would increase and

employment opportunities enhanced for improved well-being and economic growth in developing countries (Robinson, 2001).

1.2 Research Problem

Agriculture forms an important livelihood strategy in Africa, employing about 65 percent of the active labor force and contributing over 32 per cent of the Gross Domestic Product (World Bank, 2013). It is mostly practiced by small-scale farmers, predominantly under subsistence systems where income earned from the various agro activities are lower and investment limited. For this, the agricultural households make up one of the largest groups at the bottom of Africa's socio-economic strata.

Microfinance services emerged as an important source of finance to help the numerous small-scale agricultural households in Africa and other developing regions in the world to secure financial resources to increase farm investment and reduce poverty. According to the advocates (Microcredit Summit, 2013) access to micro-loans can help farmers to secure financial assets at the beginning of the farming season to purchase adequate fertilizers, better seedlings, pay for additional labor or hire mechanical equipment and invest in irrigation facilities. Research suggests that in developing regions like Africa where agricultural systems are rain-fed, households can rely on microfinance packages to cope and adapt with climate induced stresses and threats (Hulme et al., 2009). Doocy et al. (2005) also argue that microfinance can help farmers to diversify their livelihood earnings into non-farm activities such as trading and agro-processing, thus representing an important buffer at any point in time when the farm activity fails.

In spite of the prominence of the assumed benefits to the livelihoods of the poor, the possibilities of microfinance services and the outcomes of various implemented initiatives to contribute to sustaining livelihoods and reducing poverty among agricultural households is contentious. It is somewhat unjustifiable that the poor farmers of Africa can commit themselves to save or take up loans or insurance packages to support their livelihoods. They earn marginal or no income from their agricultural activities which are mostly subsistence in nature, and have little in abundance for immediate welfare support.

Other issues that cannot escape mention is the general cultural sensitivity of the poor to market-oriented activities. They are risk-averse, and might not understand the need to take up loans and pay back interest for investment in rain-fed agricultural activities with unpredictable yields per season. Besides, due to limited availability and access to livelihood capitals (such as fertile land and knowledge) most of them might not have the collateral to secure the loans or may not possess enough management ability to use the loans in productive ventures. There are also concerns on the high cost in serving these people - agricultural households – who are geographically located in remote and dispersed countryside (Karnani, 2007).

Since microfinance initiatives have become one of the key components of development policy interventions in developing countries, it would be valuable to investigate the outcomes of these services with respect to livelihoods sustainability and poverty reduction. This study therefore seeks to analyze the various microfinance services available to farming households', the impacts of these services on agricultural activities; and how the use of the services enhances agricultural productivity, sustain livelihoods and reduce poverty.

1.3 Research Questions

The foregoing debate sets the context for this research and its goal to review the range of microfinance services available to support agricultural livelihoods and to analyze their outcomes on agricultural livelihood sustainability and poverty reduction in Sub-Saharan Africa. Specifically, in the review, the research intends to answer the following research questions:

1. Which microfinance services are used by agricultural households?
2. Do these services enhance agricultural productivity?
3. Do these services enhance agricultural livelihood sustainability and poverty reduction?

While a number of research works are available reporting empirical findings on the impact of microfinance services (Barnes et al., 2001; Karlan and Zinman, 2010; Shimamura and Lastarria-Cornhiel, 2010; Banerjee et al., 2013), efforts to identify related scenarios or cases in Africa and to synthesize the evidences into a coherent piece to support future microfinance and poverty reduction research, policy and practical interventions is limited. This research aims to fill this gap. With the adoption of a systematic review approach, the findings from existing research reports are synthesized to provide a bird's view source of reference for global donors, government and non-governmental organizations, and academic researchers. Donors and governments may get the in-depth understanding on the deviating or promising commitment of microfinance adage and global poverty. Academic researchers could also anticipate the types of microfinance services that need to be retained or re-evaluated in order to achieve the microfinance agenda of enhancing well-being and reducing extreme poverty. Overall, the conceptual importance of this research is that it revealed the contributions of market-based strategies to development theory and practice. It also emphasized the need to re-assess the use of microfinance services by the poorest groups as well as

the feasibility of under-used services such as micro-leasing that could equally help the poor to secure assets and enhance capacity to further benefits from other microfinance services.

1.4 Research Methodology

A number of studies have evaluated and reported on the outcomes of microfinance in diverse areas of poor people's livelihoods in different geographical and cultural contexts (Dupas et al., 2009; Brune et al., 2010; Banerjee et al., 2009; Karlan and Zinman, 2011). Most of these studies have relied on empirical information and used both quantitative and qualitative methodologies, ranging from individual beneficiary anecdotes to focus group discussions and randomized evaluations. However, very few systematic reviews exist to synthesize the diverse outcomes of the numerous existing studies for policy guidance (Stewart et al., 2010; Stewart et al., 2011).

This research adopted a systematic review approach. It identified studies through extensive searching of the databases of peer-reviewed journals, specialist websites and bibliography snowballing of relevant studies. The search strategy included typing specific phrase and key words from themes of the research questions into the search box of each database, the details of which can be found in the methodology chapter (section 3.0). Outcomes of the search yielded many results but the studies included in the review were assessed against topical relevance, methodological relevance and methodological application quality. Findings from the identified studies have been summarized into tables accompanied by a narrative analysis of the direction of effect each microfinance service has on poverty reduction and livelihood sustainability.

1.5 Research Structure

The research is organized into five chapters. Chapter one presents the general overview and introduction to the entire research. It sets out the research context, the problem and importance, the research questions, a brief on the methodology and the structure of the thesis. Chapter two entails a review of conceptual and empirical perspectives of microfinance as a poverty reduction tool. Specific themes considered include; understanding of the base of the pyramid (BoP) approaches to reducing poverty, the emergence of microfinance as a BoP approach, microfinance and livelihoods of the poor and microfinance impact measurement. In addition, it reviews some analysis on sustainable livelihood framework. In the third chapter, the methodology for the research is clearly provided. It includes information on how studies were searched, sources identified for the research, the quality assessment strategies and the processes involved in synthesizing the evidences. Chapter four simultaneously presents the analysis of the results and summary of the review findings while the final chapter provides some discussions of the review findings, the strength and weakness and the implications for future research, practice and policy.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Microfinance is not a new concept. It has been in existence since the 17th century but gained much popularity as a development tool after the 1970s (Johnson and Rogaly, 1997). In spite of its recognition for several decades, results concerning the outcomes on diverse aspects of poor people's livelihoods and wellbeing has been questionable (Westover, 2008; Roodman and Morduch, 2011). With a focus on agricultural households' livelihoods in Africa, this research aims to identify the types of microfinance services that are available, and how the use of the services enhances livelihood sustainability and reduces poverty.

The research presents a conceptual review of past and current issues regarding microfinance and its effectiveness for poverty reduction. This chapter draws on the Bottom of the Pyramid (BoP) approach to explain the connection between the concept of microfinance and poverty reduction among the world's largest but poorest socio-economic groups such as the agricultural households in Africa. The BoP is particularly relevant in this case because it emphasizes the importance of a win-win strategy where both the poor and corporations can benefit in business. Besides the model reveals how microfinance as a solely business-oriented activity has evolved into a poverty-reducing enterprise. In this research, the BoP model is adopted to describe the existence and importance of microfinance as a pro-poor livelihood enhancement activity in developing countries. The chapter also reviews the sustainable livelihood framework (SLF), which is used as the basis for the thesis analysis. It is expected that setting the thesis within the SLF would help to reveal and

understand the relationship between diverse aspects of poor people's lives and the rhetoric of microfinance services.

Specifically, the literature review entails an explanation of the Bottom of the Pyramid and its conceptual approach to poverty reduction; an understanding of microfinance products and services; an examination of the relationship between microfinance and livelihoods of the poor from diverse strategic perspectives relating to the focus of the study; and an exploration of the sustainable livelihoods framework.

2.1 Bottom of the Pyramid (BoP)

BoP is a business model targeting the world's largest population who happen to command a comparatively high purchasing power. According to Prahalad (2004), there exist a large number of people falling within the base/bottom of the economic stratum. The world population when disaggregated into socio-economic groups or income levels yields a nicely shaped pyramid which can be disaggregated into three groups; the topmost wealthy class, the middle class and the bottom poorest class (Prahalad, 2004). The World Resources Institute (WRI) (2007) estimates that the topmost wealthy class consists of the affluent, middle to upper income earners in the developed countries and a few from the least developed countries, with an annual income of more than \$20,000. The middle group represents the emerging middle class in the developing countries, surviving on not less than the minimum accepted global income per year, that is between \$3,000 and \$20,000. The bottom poorest class at the base of the pyramid consists of the population of the developing countries with limited income, living below \$3,000 per year. Further, the WRI (2007)

estimates that about 4 billion out of the global population of 5.2 billion are concentrated at the bottom, thus the phrase “bottom of the pyramid” (BOP).

Different thresholds are used to define the global BoP population, ranging from \$1 per day to \$1000s per annum. The most widely used threshold among researchers is the one articulated by the World Research Institute in 2007, that is an annual income of \$3,000 in local purchasing power. This represents an income of less than \$1.89/day in Ghana, \$1.56/day in India, \$2.11 in China and \$3.35 in Brazil. Using data from household surveys in Africa, Eastern Europe, Asia, Latin America and Caribbean, the WRI (2007) estimates that the global BoP population of 4 billion has an annual household income of \$5 trillion dollars. Even though the thresholds are helpful in recognizing the BoP size, defining the poor based on such categorizations seems arbitrary since individual situations at the bottom might vary; some may be better or worse off than others.

The BoP market is highly concentrated in the regions of Africa, Latin America, Asia and Eastern Europe. A common characteristic of the BoP clients is a high level of poverty with limited access to livelihood resources, including financial, physical, natural and human capital. Also, most of them live in informal settlements with no secured titles for their dwelling, poor sanitation services, and lack of access to quality water, electricity and health care. In terms of livelihoods, they are mainly engaged in subsistence farming, small-scale fishing, micro-trading and labor activities. Most of them earn income far below the national average because they lack access to the market to sell their products and suffer price exploitation by middlemen from bigger cities or urban areas. Due to the modest nature of their livelihoods and earnings, most of the people at the BoP do not have access to bank accounts and financial services.

Another striking issue that calls for attention in the lives of the BoP population is that most of them pay higher prices - either in cash or effort - to access goods and services, than the top wealthier category, yet often receive lower quality. For instance, in the remote areas of Africa or Asia, and in other developing regions, households often have to pay higher transportation fares in order to reach distant hospitals or the nearest health post (WRI, 2007). They might also pay exorbitant fees for accessing loans or higher service fees for making calls, getting electricity and clean fuel such as natural gas for cooking. Addressing the unmet needs and the penalties facing the BoP population is essential to enhancing well-being, increasing productivity and reducing poverty. While BoP does not necessarily imply microfinance, the model provides a basis for understanding why and how microfinance services could be used to achieve poverty reduction goals.

2.1.1 Poverty Reduction at the base of the pyramid

The population of the base of the pyramid is dominated by a rural, underserved and marginalized groups primarily engaged in informal market economy (London, 2007) with difficulties in sustaining their lives compared to those at the top of the pyramid. With this, the dominant perception has been that they are victims in need of development assistance (in the form of aid and charity) and objective-driven public policy initiatives for enhanced well-being. Contrary to the narrative, Prahalad, in his book titled “The Fortunate at the Bottom of the Pyramid: Eradicating Poverty through Profits” (2004), proposes that the people at the base of the pyramid should be recognized as a great value-demanding cohort of consumers, representing an untapped market potential which can be harnessed for a win-win solution, where profits can be made and global poverty can be eradicated. Despite their somewhat low income levels, the proposition assumes the

poor to constitute a greater per cent of the world's purchasing power, with the potential to propel business development. For instance, in Asia and Middle East, the BoP population constitutes 83 per cent of the region's entire population and about 42 per cent of the aggregate purchasing power. Also, in Africa the estimate hovers around 95 percent of the population and about 71 per cent of the purchasing power (WRI, 2007). By virtue of the large population size of the BoP group, they are able to command a high purchasing power when their consumption and purchases are aggregated.

Prahalad's BoP argument calls for government agencies, businesses and aid donors to design business opportunities and undertake market strategies that could help distribute goods and services to the BoP population and reduce poverty. For this, the government is expected to provide an enabling environment and policy reforms to entice private individuals to serve the poor. This could erode monopolistic tendencies and prevent giant multinationals from charging higher prices for service provision to the poor. The businesses on the other hand will concentrate on investing and expanding their coverages to cater to the needs of the poorest in remote areas. Such a market-oriented poverty reduction approach enhances better use of resources for development. It allows for resources to be mobilized from diverse private sectors to open up opportunities for the poor, while development assistance –in the form of aid resources – could be channeled to target sectors where market solutions cannot be viable, for example, military assistance in times of civil strife (WRI, 2007).

Ever since the BoP concept came into being, business interest to serve the poor are rising (WRI, 2007). Multinationals and start-ups are piloting new businesses and expanding coverages in all

sectors, notably finance, consumer goods, housing, telecommunication and agriculture. Products and services provided include; microfinance services and low cost remittance systems, consumer products such as shampoo, iodized salt and water in small units or sachet, mobile phone networking and PC kiosks designed by ICT firms to enhance communication and information sharing in rural areas.

Most of these initiatives have been successful. Decades ago, mobile phone services in developing countries, for example, were very poor for both investors and users. In recent years, the entry of mobile phone service providers into the BoP market has changed the picture: it is now a lucrative venture with life-changing benefits. Data from the World Bank (2006b) shows that serving the BoP led to a five-fold increase in the number of mobile subscribers in developing countries from 2000 to 2005. Specifically, in Sub-Saharan Africa, the fastest growth was experienced in Nigeria where the subscriber base grew from 370,000 to 16.8 million. It has been confirmed that the growing mobile phone use by people at the base of the pyramid enhanced household's livelihoods and well-being (Vodafone, 2005). The access to mobile phones provided jobs to recharge card retailers, eased access to medical care and improved access to market information and financial services for the poor in rural areas. Farmers in rural areas are able to get information on prices of their produce in the urban areas and migrants living over 1000 kilometers from home are able to communicate available opportunities to their acquaintances back home without making long distance and high cost travels.

In the finance sector, the main strategy to serve the BoP clients has been an expansion of microfinance services and products such as micro-loans and micro-savings. Both formal and

informal banking institutions have become profitable for enhancing financial services to the poor and their business base is growing in multitudes in order to reach as many potential BoP clients as possible. In 2006, the microfinance services improved financial access to about 82 million people and the number has increased rapidly to over 200 million in 2013 (Microcredit Summit Report, 2015). Most notable institutions providing these services are the Grameen Bank, Cooperative Bank of Kenya, SKS Microfinance in India and Financiera Compartamos in Mexico. The SKS microfinance, for example, has more than 90 branches in five Indian states, serves more than 700,000 BoP clients and gives out loans amounting to about \$57 million (SKS Microfinance, 2007). Since access to finance is a critical form of assets/capital to the poor, the increasing number of MFIs penetrating the BoP market represent a strategically important means to reduce poverty while enhancing market for financial services.

In the remote countryside of Africa, technology is making it possible to provide financial services to the BoP population in an accessible, convenient and safe manner. IT start-ups are combining mobile networks and traditional banks to provide what is popularly known as mobile money services, where clients can save and borrow money from banks, and make money transfer to their business partners, families and friends. The most well-known mobile money system is the M-PESA, which is a collaborated financial service provided by local mobile operators and microfinance institutions in Africa. The system is operating in Kenya and has extended to over six countries. It has 20 million users who transfer \$500 million per month on average, in 2011 (Vodafone, 2011). The examples from SKS in India and M-PESA in Kenya indicate the possibility of interested investors to serve the poor for a win-win benefit where profit can be gained and the poor can secure services for their livelihood development and sustainability. The benefits of BoP

marketing strategies are clear, but their real contribution to reducing poverty for the BoP population is debatable.

Critics are of the view that, the BoP argument is riddled with fallacy: it is too good to be true; the poor people are geographically unreachable, economically deprived and culturally sensitive to prices (Khanna et al., 2005; Walsh et al., 2005). In response to Prahalad's propositions, Karnani (2007) argues that there is no fortune at the bottom of the pyramid because the market is actually very small for multinational companies or private individuals to break even and continue operations. The concept confuses many of the emerging middle class as among the BoP population (London, 2007). Most of the estimates for the BoP population size and market potential is an exaggeration; the set thresholds are too high and far above the global standards. For instance, the BoP income threshold by the WRI study in 2007 for Ghana is \$1.89/day and that for Brazil is \$3.35 but the minimum poverty line as of the time was \$1.25/day. This suggests that the number of the people falling within the base of the pyramid is overestimated. Karnani (2007) further suggests that the only way to alleviate poverty is to focus on the poor as business partners, for instance through the provision of highly subsidized interest rates and more friendly collateral requirements for micro-loans, subsidized premiums for micro-insurance among others.

Not all sectors or services have found their footing in serving the BoP population. Examples can be cited from the privatization of water systems and energy sectors. Most of the services in these sectors have encountered financial and political difficulties in serving the BoP population. Yet, there are on-going measures to develop better technology and business models that may be useful in serving the BoP market. Commentators have raised concerns about the use of market-based

instruments to reduce poverty and enhance development at the BoP. Meanwhile, some of these business ventures are still operating, in some cases, generating anecdotal evidences of significant contribution to the livelihoods of the poor. This is the more reason why this research is intended to review relevant case studies of various microfinance services and their poverty reduction outcomes. In the section that follows, emphasis is devoted to highlighting how microfinance serves the BoP population and its eventual poverty reduction contributions.

2.2 Microfinance as Financial Inclusion

Microfinance is the main service delivery mechanism in the finance sector enhancing financial inclusion of the BoP group for improved livelihood and poverty reduction. It involves affordable and effective small-scale financial services for low-income earners to borrow, save, make and receive payment, exchange assets and manage risks that threaten their livelihoods. For the past few years, microfinance has evolved as a development tool and has gained prominence in the poverty reduction agenda (Littlefield et al. 2003; Simanowitz and Brody 2004). Aid donors, governments and non-governmental agencies from around the world are attracted to designing microfinance interventions in their programme agendas. They are captivated by the presumptions and hopes that microfinance institutions are the beacons to delivering much-needed resources to underserved populations. There are a wide range of microfinance products, services, interventions and institutions specifically designed to target the needs of the poor. This section of the literature review focuses on the operations of the products and services for the poor.

2.2.1 Importance of Financial Inclusion for the poor

Like anyone else, the needs of the poor may range from meeting life cycle needs such as naming

ceremony, wedding and funeral celebration, to emergencies like sicknesses, injury or death, as well as opportunities for expanding businesses, buying productive assets and securing jobs and income. To meet these needs, the poor may need to draw on an array of financial services and products including loans, savings, remittances, insurances and other schemes. Bank accounts represent a safe and easy means to secure these services.

To estimate the number of people with or without bank account, the Global Financial Inclusion Database provides data sets for about 148 economies revealing the number of adults that save, make payments, borrow, and manage risks (Demirgüç-Kunt and Klapper, 2012). The database shows how account ownership varies around the world depending on income inequality among and within nations, and individual household characteristics such as gender and educational level. It indicates that about 50 per cent of the world's adult population (that is over 2.5 million adults) do not have bank accounts at a formal financial institution but the situation differs between high-income (11 per cent) and low-income economies (59 per cent). While most of the adults without bank accounts are based in the lower-income economies, the data show striking differences between regions. The Middle East and North Africa record the highest rate where about 82 per cent of the adult population do not have bank accounts. On the other hand, East Asia and the Pacific record the lowest (45 per cent). In some countries, however the case is worse. For instance, the estimate of adults without bank accounts at formal financial institution is more than 95 per cent in countries like Cambodia, Yemen, Turkmenistan and Guinea (Demirgüç-Kunt and Klapper, 2012).

Access to financial transaction mechanisms is very important to the poor – low income earners and women in particular. At individual level, households with limited income do not have access

to formal financial transactions. The data also show that only 23 per cent of the people in the world living on less than \$2 a day have bank accounts. With the expansion of financial services, the economies of Asia have been successful among the developing world with about 27 per cent of its population living on less than \$2 a day having bank accounts while the case in Sub-Saharan Africa is only about 10 per cent. In terms of gender, only 46 per cent of the men in the developing countries have bank accounts as opposed to only 37 per cent for the women. The gender gap is lower in sub-Saharan Africa where it is estimated to be 27 per cent for the men and 22 per cent for the women than in Middle East and North Africa (23 per cent male and 13 per cent female) and the South Asia (41 per cent male and 25 per cent female).

The lack of a bank account is an indication that the adult population, particularly women have limited or no access to securable financial services such as savings, loans, money transfer and mortgages for well-being and livelihood enhancement, and this could be explained by a wide range of factors from both the demand and supply sides. On the supply side, Beck et al. (2008) attest that the minimum payment requirement for opening and maintaining a bank account is one of the main factor restraining the poor. With a survey of the largest banks in 62 countries, their findings reveal that the minimum deposit to open an account in a commercial bank is more than \$700 in Cameroon, but no minimum amounts are required in South Africa and Swaziland. Also, the study reports that in Sierra Leone, the annual fees to maintain a checking account exceed 25 per cent of GDP per capita. They indicate that these factors were the major constraints to using formal banking services in developing countries. Other factors include the cost of dealing with smaller financial transactions mostly used by the poor. On the demand side however, factors such as physical distance to reach a formal bank, lack of financial education, the high cost to open and maintain the

account, usually, are powerful in excluding the poor from the formal financial service provision. Without a bank account, there have been difficulties for the poor to undertake financial transactions, and most of them have resorted to informal services, which are sometimes unsafe and unsecured (Dupas et al., 2012).

2.2.2 Types of Microfinance Services for the Poor

Over the years, formal financial institutions have failed to acknowledge the diverse financial needs of the poor (Nelson, 1999; Consultative Group to Assist the Poor (CGAP), 2006). In recent times however, microfinance institutions have developed innovative ways to overcome some of the barriers and bridge the financial services gap available to the poor through improved access to micro-credit, micro-savings, micro-leasing, micro-insurance and fund transfer services (Stewart et al., 2012).

2.2.2.1 Micro-savings

Micro-savings are the financial products that enable people to build up cash reserves for the future by forgoing present income use and making deposits. According to Stewart et al. (2010), the deposit services may either be a purely stand-alone savings accounts, or may be linked to credit as a compulsory condition of having a loan, or as part of a combined intervention in which a group saves for members to borrow from their shared savings resource. This suggests that savings habits among the poor differ accordingly.

Rutherford (2000) provides a useful categorization of how the poor save their money in order to access some lump sum for their livelihoods. The first category is what is referred to as saving up

– where fixed deposits are made towards building a lump sum for future use. The second is saving down – where deposits are made to repay some collected or used lump sum. The last is saving through – where deposits are made in a group, converted into lump sum at the same point in time, and given to one person in rotation. The last category is one of the commonly practiced informal microfinance activities by the poor. A typical example is the rotating savings and credit associations (ROSCAs) in the developing world where groups of women or workers usually come together to build up lump sum of money or assets to support each other's' life cycle needs or livelihood activity (Rutherford, 2000). The former categories – saving up and saving down – however are common to both formal and informal microfinance activities that specifically target the poorest of the poor.

The potential benefits of micro-saving among the poor are also high. Robinson (2001) argues that depositing money for future use is more valuable for poorer households than taking up loans. With an in-depth quantitative and qualitative data collection and analysis of the financial landscape of a slum in Mexico City, Niño-Zarozua (2006) examined the diversity of financial services and the effects on vulnerability and resource profiles of households. The findings revealed that informal savings in all forms were commonly drawn upon to cope with a range of crises (e.g. illness, unemployment). The study, thus, concludes that the ability of savings to serve this purpose is dependent on a household's social, cultural, attitudinal, and human capital (particularly, financial education). Also in a review of studies to assess the insurance role of micro-savings, Hulme et al. (2009) attest that savings serve both protective function and promotive role. Vulnerabilities such as shocks, hazards and stresses usually affect livelihood sustainability in numerous ways, but the

availability of saving is critical for poor people to either ameliorate the associated impacts when they occur or secure assets to build resilience.

In principle, the micro-savings are to help the poor build assets and enhance livelihood security. A study by Wright and Mutesasira (2001) concludes that informal savings activities are riskier than the formal types. The findings reveal that people involved in the latter are bound to lose about one third of what they save due to a lot of reasons including; a higher possibility for the members' ability to save to change at any point in time, issues of trust and lack of safe place to keep money. While micro-saving with formal microfinance services seems to be the most effective and safer, they are rarely available for the poor who reside in remote areas. In places where they are available, the accumulated money is used by the microfinance institutions as a cheap source of capital for lending activities or as a collateral for the poor borrower (in the case of compulsory savings). In microfinance institutions such as Grameen Bank and BRAC, clients' savings are only accessed when loans are repaid rather than in times of need (Hulme et al., 2009). The Consultative Group to Assist the Poor (CGAP) (2006) identified measures that are required to overcome shortcomings and expand formal and informal micro-savings activities for the benefits of the poor. These include enhancing proximity to rural areas, reducing cost of savings, strengthening the security of savings services and making formal financial institutions more user-friendly so that the poor can use micro-savings services.

2.2.2.2 Micro-credit

Micro-credit is the provision of a small amount of cash or in-kind loan at lower interest to poor households in the developing world. In whichever way the loans may take, applicants are made to

specify the purpose for which loans will be used. Johnson and Rogaly (1997) argue that in-kind credits are provided when the goods supplied are unavailable in the local market or farmers cannot purchase them at a particular point in time. For instance, credit schemes for farmers may take the form of in-kind services to provide farmers with seedlings, fertilizers and large agricultural equipment which are usually not available in the remote countryside due to the small size of the market. However, such schemes can lead to a range of problems that might affect the sustainability of livelihoods for poor people. It can make them totally dependent on the organization providing the credit or inhibit the development of market for the inputs or goods at the local area. Not until the economic well-being conditions of the poor become favorable in the rural areas, most of them will still be dependent on in-kind types of micro-credit services (Johnson and Rogaly, 1997).

Both in-kind and cash forms of micro-credit are useful for the livelihoods of the poor. The usefulness may be explained by the context within which it is provided and used. Parker and Pearce (2002) suggest that it will be inappropriate for the poor to secure loans for livelihoods in situations where the environment poses significant barriers to sustainability, for example, in immediate post-emergency situations, during periods of high interest rate caps and in severely disadvantaged rural areas. Further, they add that clients with debilitating illnesses such as HIV/AIDS and those who are dependent on a single economic activity and/or barter transactions are suitable to take up loans to support livelihoods and achieve better outcomes. In essence, microcredit services accessed within the above context are highly likely to generate excessive debt burden that could exacerbate the vulnerability of the poor.

Records show that access to micro-credit have increased unprecedentedly. The number of borrowers has increased from 190 million clients in 2009 to about 211 million in 2013 (Micro-credit Summit Campaign, 2015). The commercial banks and other formal financial companies have expanded their crediting activities to better serve the low-income households, particularly in Africa and Latin America. One of the biggest concerns about the provision of micro-credit has been the interest rates. The interest rates vary considerably. In 2011, interest rate in Africa ranged from about 25-48 per cent, 21-49 per cent in Latin America and the Caribbean, and the rate was between 20-30 per cent in South Asia (Rosenberg et al., 2011). This suggest an indication of profiteering in some regions of the world.

While high interest rates may not be generalized to all microcredit services, Rodman (2012) claims that it becomes lower as MFIs become mature and the rigid terms tend to get relaxed. Unfortunately, evidence regarding the growth and sustainability of microcredit seems to be mixed and varies contextually. Some iconic markets, such as India are experiencing large-scale credit crises, and they are not alone. Estimates on the portfolio at risk (PAR) for worldwide microfinance institutions has increased steadily over the years (Jansson et al., 2003). This alarming trend is mainly attributed to the deteriorating quality of loan portfolios for many large scale micro-credit markets in India, Bangladesh, Bosnia–Herzegovina and others.

2.2.2.3 Micro-insurance

In marketing and finance lexicon, the term insurance is used to refer to a financial package specifically designed to mitigate anticipated and unanticipated risks through payment of premium, risk pooling and reimbursement of loss (Roth et al., 2007). It is issued to cover up risks of life,

disability, health, property or any form of livelihood valuables. But not all these insurance types may be useful for the poor. In a country where health and education are free and easily accessible to all citizens, the poor might not make health or education insurance a priority. Also, in communities where social network and mutual support are high, life and disability will also be a lower priority. From a different perspective, McCord and Roth (2006) also add that the potential insurance market consists of the moderately poor and the vulnerable non-poor, and excludes the poorest of the poor. This is because the poorest are considered to be too poor and lack the necessary information, education and ability to pay premiums. As a result, the poorest need to be served with assistance such as government transfers and cash programmes rather than micro-insurance.

While government in many developing countries have failed the poor, the microfinance industry has developed micro-insurance to help poor rural households, smallholder farmers, and rural micro-entrepreneurs improve and manage the risks from livelihood shocks and stresses such drought, hurricanes, floods and other exogenous events. The service guarantees low-income earners (poor and the poorest groups) security in times of risks in exchange for premium payments that are equally proportional to the likelihood happening and the risk involved (Churchill, 2006). The microfinance industry has developed micro-insurance to help poor rural households but not all the services are available for use in the developing world. An ILO/STEP study in 2003/2004 in 11 African countries, India, Bangladesh, Nepal and the Philippines shows the different forms of micro-insurance accessed and used by the poor. It reveals that health micro-insurance is predominant in Africa, life micro-insurance is common in Bangladesh while crop micro-insurance were only found in India.

With illustrations of the utility theory, Patt et al. (2009) claim that micro-insurance forms an important part of the livelihood of risk-averse individuals rather than those who are risk-seeking or risk-neutral. By this, demand for micro-insurance is expected to be high in the livelihood of poor households whom are mostly risk-averse – they lack the knowledge, assets and confidence to invest in their livelihoods. This assertion is somewhat debatable as demand for insurance may also be dependent on the level of trust, wealth, education, age and to some extent gender (De Bock and Gelade, 2012). Trust may be distinguished into three levels; the trust in the product, the trust in the institution providing the product; and the trust in the interpersonal communications involved in the product delivery (Patt et al., 2009). Among the poor, the degree of trust for micro-insurance within these three levels is limited. Most of them lack the necessary understanding of how insurance and premium payment works, and there is low level of participation in insurance packages. Besides, particularly in developing countries, the institutions providing the services are usually unreliable in time of adverse contingencies, making the poor skeptical on how it could work to support their livelihoods.

The development of micro-insurance is ongoing, with a proliferation of new schemes to enhance better understanding of the premium packages by the poorest groups. In 2004, the ILO/STEP reported that there were approximately 60 micro-insurance schemes covering 5.2 million people in India, but two years later, the updated estimate was 71 schemes covering more than 6.8 million people. This suggests that the schemes are responding to a real demand at the local level. Yet, Churchill (2006) contends that the schemes are still limited in their contribution to provide protection for the poor against risk. In Africa, for instance, many persons excluded from legal social protection schemes are still not covered by micro-insurance due geographic or socio-cultural

outreach difficulties. In addition, limited managerial skills and inadequate information make it difficult for better monitoring of clients, leading to a lack of viability and sustainability to provide micro-insurance schemes.

2.2.2.4 Micro-leasing

In some cases, lower-income households might lack the ability to secure micro-loans or draw on micro-savings and micro-insurance because they do not have the required collateral or might not have enough to deposit and build cash reserves or pay premiums. Micro-leasing is one of the microfinance tools developed to overcome this constraint. With this service, the microfinance institutions provide capital assets for use by lower-income households to support their livelihoods and generate income in exchange for specific periodic payment (Nair et al., 2004). Generally, leasing may be undertaken in two ways; financial leasing and operational leasing. In the former case, the lessee (the poor household) acquires ownership over the capital assets at the end of the leasing period either automatically or at a token price, but in the latter scenario, the lessee returns the assets to the lessor (Deelen et al. 2003). This enables poorest groups to secure access or gain ownership over productive assets to generate income and alleviate poverty.

Micro-leasing seems to offer several advantages over other microfinance tools, both to the microfinance institutions providing the financial services and the poor households accessing the services. Nair et al. (2004) suggest that a lease involves a lower down payment than bank requirements for accessing loans and in most cases additional collateral is also not required. This makes it more affordable for the poor households than micro-loans, in addition to the security of access and possibility of ownership over productive assets. For the microfinance institutions, there

is also a stronger security position to being a lessor compared to a lender. The lessor always owns the equipment till the end of the lease when the lessee can claim ownership based on the type of arrangement. This demonstrates that it is much easier to repossess a leased asset than to repossess collateral for loans in the case of default. The situation is usually worse in many developing countries where creditor rights are often weaker and lenders have to go through lengthy court proceedings before collateral can be possessed from borrowers. A study in Bolivia and Ecuador, for instance, reveals that it takes an average of one to two months for lessors to recover leased assets when there is a default, but collateral for loans are recovered after a year or more (Westley, 2003).

Even though it is favorable for the poor to use micro-leasing for productive activities and generate income, these arrangements are not without cost. Westley (2007) claims that the set up cost and operational cost for both parties (lessee and the lessor) to engage in leasing arrangement are higher. This is because, the lessor may incur additional cost of maintenance or damage in the course of usage during the lease periods, while the lessee may also have some tax burden such as the value added tax (VAT) to take up. Further, Westley (2007) adds that there is also a high potential for misunderstanding and legal disputes to arise in leasing activities due to limited knowledge about the concept, on the part of the poor. Goldberg and Palladini (2010), thus suggest the need for a careful selection of clients, a thorough lease appraisal, supervision and education before proceeding with micro-leasing arrangements for poor households' livelihoods.

Micro-leasing seems to be an important microfinance tool with a lot more advantages than disadvantages to both the microfinance institutions and low-income entrepreneurs yet the scale of

use in the developing world where it is needed most is very small. The market for micro-leasing shows that South America and Africa account for about 9 per cent and 2 per cent, respectively, and Asia (without Japan) represents 9 per cent (White Clarke Group, 2010). It is assumed that the institutional environment, economic conditions and tax regulations required for the operation of leasing services to the poor are somewhat absent or limited in the developing countries. To overcome some of these challenges, the World Bank is playing a huge advocacy role for governments of the developing countries and microfinance institutions alike to reflect on their decision to serve the poor and consider micro-leasing as an equally important tool as others such as micro-credit and micro-savings. It has been recommended for governments, in particular, to adopt a clear and an equal legal treatment for the tax codes of both micro-leasing and micro-lending arrangements (Goldberg and Palladini, 2010).

2.2.2.5 Fund Transfer

Microfinance services also include fund transfer activities that enable the poor to receive money from or make payment to their friends, families and business partners. Generally, money transfer services may take the form of person-to-person, business-to-business, business-to-person and government-to-person transactions. Among these transfer services, person-to-person transactions account for only a tiny fraction of the world's payment systems (Isern et al., 2005) but may represent the most important type for majority of the poorest. The World Bank (2004) estimated the global formal remittances transfer using the IMF Balance of Payment Year Book of 2001. The data show an increasing trend for global remittances from \$88.1 billion in 2002 to \$93 billion in 2003. The major recipients were mainly the developing regions, with Latin America and the Caribbean accounting for the highest, receiving 30 percent of global flows, and Sub-Saharan

Africa being the least (representing 4 percent). However, the estimates vary per country, with India and Mexico for instance being ranked among the top recipients of international transfers. Strategies that aim to enhance better access to transfer payment and receiving services for lower-income households without formal bank accounts is very important.

The international money transfer service provision is dominated by giant money transfer companies such as Western Union, MoneyGram and Vigo, with the rest fragmented between the commercial banks, foreign exchange bureaus, credit unions, post offices and other niche companies. This signifies a degree of safety in accessing transferred money for the poor in developing world, but there are certain barriers in the recipient countries that often make the receiving of transferred money laborious. Ineffective domestic financial service providers within appreciable distance and underdeveloped infrastructure are some of the critical issues. As a result, informal channels (such as family and friends) still remain the main options for some lower-income households both international and domestic. Recent estimates show that more than 50 per cent of money transfer from France to Mali and about 85 per cent to Sudan are made through informal channels (Ratha and Dilip, 2003). The situation in Africa is not different from the case of Asia and Middle East, where it has been estimated that informal transfer channels account for about two and half times the value transferred through formal systems (Bezard, 2003).

These evidences reveal that the informal systems are competing successfully with the formal players in the money transfer market. Their popularity could be explained by certain client-friendly features including little or no involvement of paper work, easy and fast in dealing with clients, and less expensive (no charges and taxes). Despite risk of theft, most people prefer informal channels

since they are also within reach and are available to areas where formal services do not exist. The client-friendly features of informal channels for the poor have served as a model for microfinance institutions aiming to enhance better financial inclusion to lower-income groups.

Mobile phone-based systems have emerged recently, where formal financial service providers have partners with mobile phone operators to enhance better financial inclusion for the poor. The initiative enables users to register for an account, and deposit or make transfers from their account stored on their cell phones. An example is the M-PESA in Kenya which is making a lot of strides. It is estimated that in 2011, about 17 million people subscribed to this system in Kenya (Communications Commission of Kenya (CCK), 2012) and it has also expanded to other developing countries including Tanzania, India, Afghanistan, South Africa and some parts of Eastern Europe. Yet the service is still restrictive for the poorest since it requires access to a mobile phone, ability to use the phone (education or knowledge) and availability of mobile network connection, most of which the poor do not and cannot afford to possess.

2.2.3 Microfinance in Sub Saharan Africa

Microfinance institutions (MFIs) have been making efforts to increase access to their services for the poorest populations. Data from Microcredit Summit Report (2015) shows the number of documented MFIs in Sub Saharan Africa region to be 1,045 with about 15,945,279 clients. The estimates for the region seem lower compared to the highly concentrated regions such as Asia and the Pacific where there are about 1,119 MFIs serving 166,908,164 clients. A potential explanation is that the Asia and the Pacific regions have been one of the important point source for microfinance movement where MFIs and their services for poor households begun to spread

widely as early as the 1980s and 1990s (Stewart et al., 2012). While microfinance has been highly popular in the Asia and the Pacific region, the rate of growth in microfinance activities are becoming more noticeable in Sub Saharan Africa in recent years. For instance, it is estimated that the number of micro-loan borrowers in the region increased at an annual rate of 8.5 percent between 2009 to 2013, whereas the case for Asia and the Pacific was 0.5 percent (Microcredit Summit Report, 2015). One potential reason for this is that MFIs in Africa have a huge untapped BoP market. It could also be said that the point source regions for microfinance such as Asia and the Pacific might have reached their saturation point where there are very few clients to be reached.

The world's poorest but largest demographic group is often seen as a promising market for business. Market-based approach suggests that serving the BoP population is a win-win for businesses and poverty reduction due to the potential market size and the huge purchasing power. Microfinance industry is expanding to tap these potential markets but the possibility for the services and products provided to yield benefits to the BoP population is questionable.

2.3 Microfinance and Poverty Reduction

Poverty appears to have a commonsense definition which can be understood as a lack of some sort, or living below the minimum accepted standard in terms of income, nutrition, health among others. Advocates believe that providing small scale financial services to the poor plays an important role to reducing various forms of global poverty by 2030 (Microcredit Summit Report, 2015). An improved access to finance is assumed to promote investment in income generating activities, enhance income stability and growth for the poor. Increased income is expected to enhance investment in human development and increase the accumulation of assets needed to build security

against livelihood risks and shocks such as illness, drought, floods and crop failure. For women, it is highly perceived that access to microfinance will economically empower and increase confidence in decision-making processes. Finally, access and use of microfinance may also have spill-over effects on all aspects of households' livelihoods such as increased literacy, improved nutrition and health. This section focuses on the evidences of microfinance in reducing poverty with regards to the opportunities it provides for human development, investment in productive activities, assets accumulation, and gender empowerment. Further, the section highlights on some issues regarding microfinance outreach to the poorest and some impact measurement challenges.

2.3.1 Increase Income

An increased income is critically important for the poor to break out of the poverty cycle. It allows them to take advantage of business opportunities, send their children to school, maintain better clothing and shelter, and diversify their livelihoods into many productive activities to reduce risks. Studies have revealed how poor people have increased their income through microfinance services. In Indonesia, Bank Rakyat is one of the notable institutions providing micro-loans to poor households ever since the Asia financial crisis in the 1990s. A study of the borrowers from the bank reports that, on average, income of the bank's clients increased by 112 per cent and about 90 per cent of them are believed to have graduated from the poverty line due to the increased income (Panjaitan-Drioadisuryo, 1999). The study however confirms that the ability of the clients to make profit and increase income depends on the type of livelihood investment pursued with the micro-loan from the bank. From the results, it appears that households' investment in petty trading was more profitable than handicraft production. Panjaitan-Drioadisuryo, (1999) recommend the need

for the poor clients to diversify their investment into different productive activities in order to reduce any risk and take advantage of profit making for poverty reduction.

To enhance the poor to take advantage of the increased income potential of microfinance, many development organizations have taken much interest in integrating microfinance interventions with their social development programs like education, financial training and book keeping. A typical example is the Credit with Education program implemented by the Freedom from Hunger, in partnership with local microfinance institutions in over ten developing countries in the year 1989.

Ten years after the implementation of Credit with Education program, MKNelly and Dunford (1998) assessed the overall impact on the livelihoods of the participants in Ghana. The findings show that there was significant income increase for the program beneficiaries, between the years they participated in the program. The net monthly increase was estimated at \$36 for the participant as against \$17 for the non-participants. Most of them attributed the increased income to the access to credit which enabled them to expand their businesses and buy inputs in bulk at a reduced cost. The study concluded that increased income enhanced food security and reduced hunger among the households but limited information was provided to demonstrate how these outcomes were achieved and whether they can be sustained over a period of time. An increased in income might not necessarily mean that households are making good use of the returns or maintain a savings stock; sometimes they might gamble with the additional income or spend it on alcohol. Households' ability to maintain a savings accounts (one which is stock rather than flow) could provide better security against shocks and prevent them from moving into a poverty trap.

2.3.2 Increase Investment in Human Development

Poverty is not just about income. It may also be understood as a deprivation or a failure to achieve certain minimal capacities of well-being such as access to clean water, education, shelter, health and nutrition (Laderchi et al., 2003). This conceptualization extends far beyond the traditional measure, and includes intangible aspects of well-being. Intangible aspects of life are critically important in developing the human capital required for pursuing livelihood activities to generate income and wealth. It is assumed that microfinance enhances clients' ability to invest in human capital such as nutrition, quality health practices, and good education for children compared to non-client households.

Barnes et al. (2001) conducted an impact evaluation on a microfinance program in Uganda for the USAID-AIMS project. The findings showed that client households invest more in education than non-client households. Microenterprise revenues played an important role in financing the education of children for over half of the client households. They recognized that clients were significantly more likely to pay school fees for their children than non-client households. In the end they concluded that microfinance has some implications for keeping orphans in school such as children of households affected by HIV/AIDS. However, such impact evaluations are most often redundant because the microfinance services in question were merged with other well-being enhancing interventions such as advocacy and sensitization on the importance of human development for a clients' entire households. For this, there is a problem of attribution, whether the increase in education is as a result of the microfinance services or the adjoining programs.

Surprisingly, randomized studies in different countries revealed different results from what was found in Uganda. For instance, Banerjee et al. (2014) report results from a randomized evaluation for a group lending micro-credit activity in India. The results provide a different picture of the role of microfinance in the life of the poor. It reveals that there is a pent-up demand for microfinance among the poor. Many of the households with access to micro-credit use their loans to acquire household durables and some use it for business investment, but this does not lead to significant increases in human development outcomes or growth in the profitability of businesses. For this, they argue that access to micro-credit does not have any discernible effect on education and health for the households. They conclude that microfinance, as a whole, does not make any dramatic change in the well-being of poor households.

The findings from Banerjee et al. (2014) could also be explained by what Raymond and Adams (2013) term as “immiserizing the poor” (p. 555). By immiserizing the poor families, Raymond and Adams (2013) mean interest rates on micro-loans constrain the poor to borrow; their desire to take up credit reduces the incentive to save for future; lack of education limits poor household’s ability to manage credit; and there is the likelihood for children to drop out from school when parents take up credit. The notion is that the poor might be trapped in an intergenerational cycle of debt when they take up microloans.

2.3.4 Increase Investment and Assets Accumulation

The poor are mostly prone to stresses and shocks such as drought and price changes, which threaten their livelihood security and may drive them into chronic poverty situations. Such situations can be overcome through a sustainable access to assets and a diversification of livelihood investment

into numerous productive activities. Microfinance services provide secured access to finance and other forms of livelihood assets such as land, equipment and tools, through small loans, savings, insurance and leasing for the poor.

Dalla Pellegrina (2011) examined the role of micro-financing mechanisms on households' investment decisions. The study uses information from the World Bank's survey of about 1,800 households in rural Bangladesh carried out in 1991–92 and adopts an innovative approach instead of the traditional way where many of the assessments have focused on variables such as income, health, consumption and education. The findings reveal that microfinance loans enhance working capital expenditure, mostly in non-agricultural activities, while the traditional bank loans promote accumulation of fixed assets, mostly in agricultural activities. Based on the findings, Dalla Pellegrina (2011) suggests that microfinance is likely not to be conducive for investment and assets building in agricultural livelihood due to the short-time frame and regular repayment schedules associated with the system. This implies that borrowers (in the agricultural sector) might move toward short-term investments which may not be sufficient enough for livelihood security.

In another study, Kondo et al. (2008) analyzed the impact of microfinance on assets accumulation, as one of the outcomes for an ex post evaluation for a Rural Microenterprise Finance Project (RMFP) in Rural Philippines. The study adopted a quasi-experimental design in order to control non-random project beneficiaries. The results demonstrate that, there is no significant impact on household assets. Assets expansion for both the beneficiaries and the non-beneficiaries was almost the same. The impact of the project on beneficiaries' income as revealed in the study seems not to be sufficient to enhance accumulation of household assets. Kondo et al. (2008), thus recommend

microfinance institutions to provide special assistance for the poor to select and invest loans into productive activities that generate profit for increase income and better accumulation of assets.

2.3.5 Women Empowerment

In terms of gender, women are the marginalized group and are more prone to poverty than their male counterpart. They are economically and politically underrepresented which undermines their ability to take advantage of opportunities for development. A key objective of microfinance schemes is to empower women to become more confident and active in productive and reproductive decision-making both at the household and community levels. To achieve these goals, many microfinance schemes have targeted women. Estimates from the Micro-Credit Summit Report (2015) shows that about 157 million out of the total of 211 million borrowers of microfinance are women. Among the microfinance institutions and networks with a majority of female clients include the Women's World banking (made up of about 40 independent microfinance institutions), Grameen bank, Accion International, FINCA (Foundation for International Community Assistance) and Kiva (Conger, 2007). The Grameen Bank, for instance, has about 95 per cent of its client as women (Armendáriz et al., 2010).

A recent study by Ngo et al. (2012) uses a theoretical model of household production, bargaining and credit, to represent women empowerment. It analyzed the contribution of access to microfinance in enhancing the benefit of intra-household decision-making for women. The model demonstrates that the ability of women to benefit from microfinance programmes depends on their level of skills and the degree of interest of the husband to appropriate the use of the microfinance accessed. Findings suggest that access to micro-credit may not enhance a woman's authority in

decision-making within the household if she has limited or no skills to engage in a productive activity or the man is strategically interested in the loan towards his bargaining power. For this reason and others, Johnson (2004) attests that targeting women for microfinance programs does not really lead to empowerment in economic or reproductive decisions; sometimes the men may abuse the funds of the women. This assertion was also opined by Kabeer (2005) stating that microfinance is not a magic bullet for women's empowerment. While Johnson (2004) recommends the need for the microfinance institutions to redirect their focus and target both genders (men and women), Kabeer (2005) suggests commitment of microfinance institutions to build up the organizational and managerial capacities of the poor women for improved outcomes.

Evidences from Bangladesh, India and Kenya confirm the existence of a positive correlation between access to microfinance services and women empowerment (Weber and Ahmad, 2014; Swain et al., 2008). In India, the evidence from a Self-Help Bank Linkage Program for women shows that microfinance empowers women to challenge existing social norms and customs to their advantage (Swain et al., 2008). In the study, Swain and colleagues test a hypothesis by using results from quasi-experimental household sample data collected for five states in India from 2000 and 2003. The data includes information for members in the self-help group and a control group (non-member) with similar household characteristics. A general model is estimated by employing appropriate techniques to treat the ordinal variables, and the differences in the results for both groups were used to reflect the impact of the Self Help Group (SHG) on women's empowerment between 2000 and 2003. The findings strongly demonstrate that women in the SHG members group exercise higher level of empowerment than the members of the control group. The study however, made it clear that the result is the average for the entire group, but not universal for the

individual members. Some women within the group might exercise little or no empowerment in their communities, suggesting a critical investigation into individual household-level empowerment contribution of microfinance.

2.3.5 Reaching the poor

Reaching the poorest is the main goal of microfinance. A notable agency for providing reviews on microfinance institutions and their commitments to providing secure access to financial services for the poor is the Microcredit Summit. Estimates from its recent report reveal that microfinance services have slowed and lost some grounds in efforts to reach the poorest of the poor (Microcredit Summit Report, 2015). Their statistics show that between 2002 and 2007, the total number of both microfinance borrowers and poorest borrowers increased at an annual rate of 14 percent. But in the last five years (2010 to 2015), total clients have grown at only 2 percent per year while the number of poorest clients have declined by 2 percent. The trend demonstrates that microfinance services do not reach the poorest as perceived.

There are potential reasons that could explain the problem. First, the set up for microfinance operations are not welcoming for the poor. Second, the poor see themselves not eligible to meet the requirements that accompany microfinance services, such as interest rate, collateral, saving down for credit repayment instead of stocking for future. In credit-based services for instance, the poorer clients might sign in for very small loans because they lack the confidence. In such a situation, the average loan size gets smaller, thus increasing the transaction cost and making it less favorable for the microfinance providers to operate.

The outreach, profitability and sustainability of microfinance institutions and their operations to serve the poor is another area of concern. There are likely tendencies for MFIs to deviate from serving the poorest who need their services most, a situation commonly referred to as mission drift (Ghosh and Tassel, 2008; Copestake, 2007; Armendariz and Szafarz, 2009; Mersland and Strom, 2010). With a simplistic model, Armendariz and Szafarz (2009) predict that mission drift occurs as a result of the interplay between a MFI and country-specific characteristics pertaining to the cost and benefits of serving the poor.

In a study of 124 microfinance institutions from 49 countries, Cull et al. (2007) examine the possibility of reaching the poor and earning profits. The findings suggest that it is indeed possible to serve the poor with microfinance services but there exist some trade-offs between outreach to the poor and profitability. They contend that institutions that provide very small micro-loans for instance are not necessarily less profitable. However, larger loan sizes are associated with lower average costs for both individual-based lenders and solidarity group lenders. In this case, larger loan sizes imply less outreach to the poor and this could potentially have negative implications for poverty reduction.

Marr (2004) uses a more comprehensive framework to analyze the success of informal microfinance activities. The framework demonstrates a model of impact chain envisioned in group-based microfinance schemes. Findings reveal that the group formation and member selection processes involve a lot of peer monitoring and peer auditing exercises, where members are often chosen based on patronage networks and kinship ties. The study concludes that the poorest and most vulnerable groups are usually excluded from the group-based system because

they are seen as people who might not be able to pay back loans which could be a risk for other members. However, in some cases, the poorest might themselves be risk-averse and may not be willing to participate in loan taking activities. This suggests a need to increase the design of innovative ways in providing financial services to the poor alongside financial education and livelihood management schemes.

2.3.6 Impact Measurement Challenges

The available evidences on the outcomes of microfinance in reducing poverty is mixed. The methodologies for revealing these evidences can be categorized mainly into two groups; non-randomized, and randomized methodologies. The non-randomized studies usually rely on anecdotes, household panel data and financial indicators like loan repayment or default rate from microfinance institutions to analyze the outcome variables for poverty reduction. An example is the impact evaluation of the USAID-AIMS project in Uganda by Barnes et al. (2001) and Panjaitan-Drioadisuryo's (1999) assessment of borrowers of Bank Rakyat in Indonesia revealing appealing results of microfinance and poverty reduction. The results of these studies and other similar ones have received constructive methodological critics. For instance, Roodman and Morduch (2009) contend that instrumentation strategy used in non-randomized studies cannot provide proofs for impact studies because the results are mostly driven by a number of outliers. This overestimates poverty reduction outcome/impact at individual household level.

The randomized methodologies on the other hand are a recent development, in part, to respond to the flaws of non-randomized assessment of microfinance and poverty reduction. The approach involves a comparative experiment of two groups (a control group and a treatment group) with a

number of similarities. Randomizations are carried out and differences in outcome variables such as income, health, education and asset accumulation are then causally linked to the specific treatment, which could be a microfinance service or program. The results from the evaluation of group lending micro-credit activity in India by Banerjee et al. (2014), for instance, was based on a randomized technique. The approach is robust in itself but it is not without flaws and biases. Most microfinance organization such as the Grameen Foundation and FINCA have labeled criticisms against its short timeframe, generalization of findings based on small sample size and the difficulty of quantifying the social variable of microfinance outcomes.

To overcome the limitations of the above two methodologies, McIntosh et al. (2011) developed an approach called Retrospective Analysis of Fundamental Events Contiguous to Treatment. The methodology involves a single cross sectional survey in which respondents are asked questions on the fundamental events in the history of their livelihoods and entire household's welfare. Responses from questions that relate to such events are coded into a retrospective data sets and interpreted to reveal the changes in welfare outcomes that occurred as a result of microfinance interventions. This methodology may be useful for future impact evaluations; it does not involve much randomization and tends to be less time consuming than the randomized approach.

The results from various methodologies assessing the impact of microfinance on diverse aspect of poor people's lives reveal little convincing evidence (Weber, 2013). Hermes (2011) considers the main problem to be how to measure the real contributions of microfinance in the lives of the poor whose livelihoods are connected and influenced by multiplicity of social, economic and political factors. Besides, he contends that some microfinance institutions may be located in relative

wealthy localities or target relatively poor clients, but not the poorest. When this happens, the results of an impact measurement on poverty reduction may be distorted. Stewart et al. (2012) also notes that the conceptualization of poverty has changed over time, from the notion of lack of income to lack of empowerment among women to a more recent idea of vulnerability of diverse aspect of people's livelihoods. It should be noted that the lack of consensus on the conceptualization of poverty also contributes to the difficulty in designing well-crafted indicators for measurement as well as the specific aspects of poor people's lives worth assessing.

The theoretical evaluation and empirical assessments of the impact of microfinance in reducing poverty have taken the form of experimental studies and anecdotal accounts using qualitative and quantitative tools such as focus group discussions and surveys. These approaches are tagged with wide-ranging limitations some of which have been highlighted above. In this regard, this research seeks to analyze the impact of microfinance services on agricultural livelihoods using the sustainable livelihood framework. The framework provides a particularly useful analysis of the livelihood diversity and complexity of the poor which would help to contextualize microfinance activities within the diverse concepts of poverty among households.

2.4 Sustainable Livelihood and Poverty Reduction

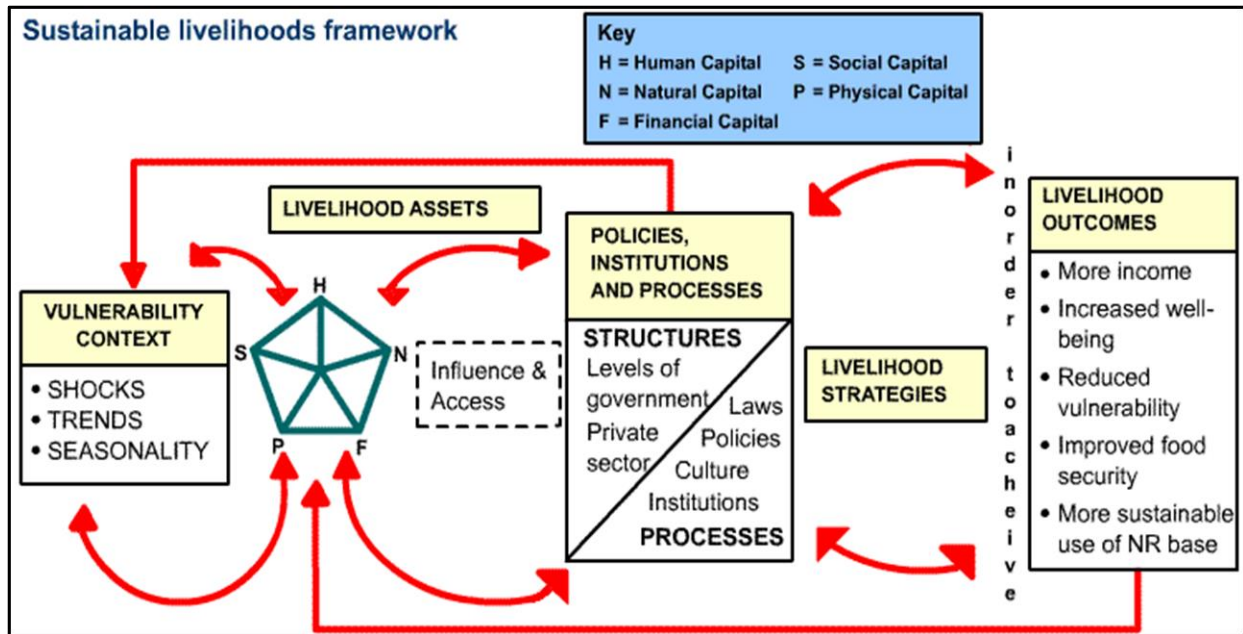
Among the utmost goals of the poor is to live lives full of opportunities and free from livelihood risks. This requires greater livelihood securities to graduate out of the poverty trap and maintain a sustainable living. This section explores sustainable livelihood dynamics and the path ways for poverty reduction.

2.4.1 Sustainable Livelihood

The term 'livelihood' portrays the resources used and the activities undertaken to make a living. It is considered to be sustainable when the resources and activities can adjust to actual or expected shocks and stresses (Chambers and Conway, 1992). An important tool for enhancing better analysis of the livelihoods of poor for poverty reduction purposes is the sustainable livelihood framework (SLF). The framework contains ideas and approaches, it has been widely used by researchers, practitioners and government agencies to understand and address poverty situations, (Morse et al., 2009; Allison and Horemans, 2006), particularly in low-income countries. As an important framework, it provides a checklist to analyze poverty different scales, from individual households to village, national and international levels. At whichever level the SLF is used, the framework guarantees a comprehensive analysis of livelihood complexities and diversities, in terms of the strategies undertaken, the objectives pursued, as well as the underlying limitations and opportunities in the lives of the poor.

The main components of the framework are: livelihood strategies, livelihood outcomes, livelihood assets, transforming structures and processes (also known as policies, institutions and processes) and vulnerability context (UK Department for International Development (DFID), 2001) (see figure 2.1). The details in each of the components are intended to be dynamic due to contextual variations and diversities in people's actions at a given period of time.

Figure 2.1 The Sustainable Livelihood Framework



Adapted from DFID (2001)

2.4.2 Livelihood Assets

It is assumed that livelihoods require a wide range of direct or indirect input of resources (Ellis, 2000). In the SLF, these resources are generally referred to as assets, disaggregated into five forms of capital: social, human, natural, physical and financial (see table 2.1 below). The details of these types of capital are presented in Table 2.1. Access and accumulation of assets is influenced by the vulnerability context and institutional structures, policies and processes (see figure 2.1). Vulnerability context for example may define the level of safeness of financial capital such as income and savings while the institutional context may also mediate the means of accessing the savings at every point in time. An ease of access and availability of assets strengthen household's capacity to manage risk or cope with shocks, thereby reducing vulnerability. Enhancing financial services to the poor through microfinance schemes – micro-loans and micro-savings – may enable the poor to secure funds to invest in their livelihoods and build diverse forms

of capital for livelihood security.

Table 2.1: Explanations for Sustainable Livelihood Capitals

Livelihood capital	Definition and explanation
Human capital	Skills, knowledge, ability and potential to labor, good health, which together enables people to pursue different livelihood strategies.
Social capital	The social resources upon which people draw in pursuit of their livelihood objectives, including networks, membership of groups, and relationships of trust. Strong groups are beneficial for group members but may exclude other (possibly very poor and vulnerable) people
Natural capital	Natural resource stock from which resources flows are derived that are useful for livelihoods. The quality of resources must be taken into consideration when assessing stocks, because (for example) land with depleted nutrients is of less value to livelihoods than high-quality, fertile land. In explaining natural capital, some make a distinction between environmental goods (i.e. stocks) and services (for example pollution sinks).
Physical capital	The basic infrastructure and producer goods used to support livelihoods; this can be called man-made capital
Financial capital	The financial resources that are available to people in pursuit of their livelihood, including savings and credit. This includes flows as well as stocks, and it can contribute to consumption as well as production

Adapted from Neefjes (2000, pg. 86 - 90)

While the assets categorisation in table 2.1 above is widely used in livelihood-poverty analysis, some commentators have raised concerns about the typology of capitals (Baumann, 2000; Stirrat, 2004). Baumann (2000) is of the view that politics and power relations are critical forms of capital for securing other livelihood capitals, enhancing livelihood strategies and achieving outcomes, but it has been treated as subsets of policies and institutional processes affecting livelihoods. It is contended that such an approach limits the need to draw on politics and power for livelihood recovery and sustainability. But Nunan (2010) claims that politics and cultures are considered as a form of institutional context within which livelihoods are pursued. From another perspective, the disaggregation of the assets category has been taken to be less important with the assertion that all forms of livelihood capital can be substituted for one another (Neefjes, 2000). For instance, when a farmer decides to sell a piece of arable land which is a natural capital for money, it becomes a

financial capital, and if the buyer uses the land for a housing project, it becomes a physical capital. Based on this example and others, Neefjes (2000) argues that “there are just two ultimate sources of all those capitals: human beings (including their labor and ingenuity) and nature (interpreted as the world without human society)” (2001, p. 87).

2.4.3 Vulnerability Context

According to Adato and Meinzen-Dick (2002), the starting point in using the SLF is the vulnerability context within which livelihoods are pursued. It describes external factors that influence the sustainability of livelihood strategies (Allison and Horemans, 2006) and may comprise of three elements: shocks, trends, and seasonality. Shocks are natural happenings such as floods, droughts, and earthquakes, and non-natural events such as conflicts, health and economic disasters that cannot be predicted with certainty. Trends are somewhat predictable and encompass gradual occurrences such as technological developments, political and economic changes. Seasonality also relates to the fluctuations in production (agriculture or industry), opportunities (employment), and the occurrence of events and celebrations (Muslims’ Eids or Christians’ Christmas).

These sources of vulnerability could serve as threats or may provide opportunities for livelihood sustainability. Twigg (2001) and Ghimire et al. (2010) attest that a change in vulnerability context may influence the livelihoods of people by either weakening or strengthening assets, or possibly forcing the strategies undertaken to a new direction. In the farming communities of Africa, vulnerability context of farmers may include dependence on unpredictable rain-fed schemes which might lead to drought or flooding, input and output price fluctuations, and a lack of ownership

over arable land. All of these may limit the farmers' potential to secure better yield, earn more income and make savings. In such situations, farmers become predisposed to poverty, and might be able to recover through micro-finance interventions such as micro-credit, micro-insurance and micro-leasing, all of which are the main focus of this research.

2.4.4 Transforming Structures and Processes

In the SLF, transforming structures and processes (TSP) depict organisations and institutions such as policies, rules and regulations that operate at various levels (from household to international) to influence access to assets, their use and benefits that can be accrued at any point in time. The TSP plays a critical role in regulating the level of security and vulnerability of livelihood resources and the strategies pursued under different situations. They could determine how livelihood strategies are constructed among different groups of people, particularly through gender and social groupings. For this reason, Allison and Horemans (2006) suggest that TSP is the heart of livelihood sustainability management, and could affect people's choice of livelihood strategies as well as livelihood outcomes desired. In Africa, the undeveloped weather stations and a lack of weather information support from government meteorological agencies, and the institution of customary land inheritance are some the ways through which a farming households' ability to cultivate better yield may be affected. Without fulfilling these political and cultural support, a farmer may not be able to cope with climatic variability or secure land to farm, thus aggravating more vulnerabilities to poverty.

2.4.5 Livelihood Strategies and Livelihood Outcomes

In daily life, people may combine activities and choices, or may take advantage over certain opportunities in order to achieve livelihood goals, which could either be productive, reproductive and/or investment related. This is referred to as livelihood strategy. It may consist of portfolios, and could either be specialised or diverse. For instance, agricultural livelihood under unpredictable rain-fed scheme of Africa may consist of strategies such as livestock keeping, crop production, and fishing, simultaneous with coping portfolios such as migration and remittances. It may also include as investment decisions such as savings, lending, borrowing and leasing to diversify income sources. These activities or strategies are directly influenced by assets capabilities and elements of TSP. For instance, without arable land or good health, a farmer may not be able to cultivate crops or migrate from one place to the other, respectively. In the same way, procedures required or interest rates charged by financial institutions may inhibit farmers from borrowing or savings.

Livelihood outcomes are the direct and indirect results of each livelihood activities. Well-being goals such as increased income, enhanced food security and health, reduced vulnerability, and human development goals such as improved access to health care, education and better nutrition are some of the desired outcomes of livelihoods.

2.4.6 Application and Critical Perspective

As an analytical framework that provides understanding to livelihoods in different contexts, the SLF has been applied in different sectors including forestry, agriculture, and post conflict response sectors to interrogate the livelihoods of the poor and how schemes from these sectors contribute to poverty reduction (Adato et al., 2002; Baumann, 2000; Alexander et al., 2006). In a cross-country

study, comprising of Mexico, Kenya, Bangladesh and Zimbabwe, Adato and Meinzen-Dick (2002) used the SLF to explore and compare the poverty impacts of agricultural research and technologies on farming households. The study adopted a qualitative approach and provided in-depth insight into context-specific and non-monetary indicators for well-being and vulnerability in the lives of the poor farmers. Findings revealed the multifaceted impact of agricultural technologies on the livelihoods of farmers. In Mexico, for instance, a switch to creolized maize variety was observed to be advantageous in terms of yield, but the maize was more likely to rot in case of pest attack. In view of this, farmers have the chance of carrying out a better livelihood strategy, but within a vulnerability context – risk of pest attacks.

On Lake Victoria in the eastern central Africa, Nunan (2010) also used the SLF to analyze how boat crew and women in fisheries strategize their livelihoods in order to respond to fluctuations in fish catch. It is argued that as boat crew migrate, vulnerabilities are mitigated and exchanged for new sources. This is because, outcomes of the movement were mixed, ranging from increased access to fish and increased income to the probability of contracting HIV/AIDS, breakdown of marriages and pressures on fish in the destination sites. She thus acknowledged the complex nature of fisher-folks' livelihoods and concludes that “the vulnerability context of livelihoods for many fisher-folks on Lake Victoria is, however complex and requires careful analysis to appreciate the benefits and disadvantages of movement within a livelihood strategy” (2010, p. 784). These reflections suggest the importance of livelihood strategies in shaping the vulnerability context and livelihood outcomes. Thus, the SLF can be said to provide a methodology for analyzing the interactive influences of poor people's livelihoods, in order to inform policy debates for poverty reduction.

There are, however, limited examples of the application of the SLF for impact assessment of microfinance on poverty. The only related study is by Bhuiyan et al. (2012), which discusses the conceptual connections between microcredit and sustainable livelihood. Findings from the study suggest that access to credit increases poor people's ability to pursue Income Generating Activities (IGAs) and undertake some diversified livelihood strategies. They further reveal that the outcome of pursuing these strategies included; sufficient income, improved health, access to education for children, building and acquiring assets such as social networks. In the conclusion, Bhuiyan et al. (2012) note that access to microfinance contributes to poverty reduction only if the accrued livelihood benefits and assets remain sustainable overtime. In spite of the findings and conclusions, the study is flawed in its ability to identify the applicable linkages. It does not reveal or translate the entire livelihood of the poor and how they access the micro-credit into the various components of the SLF, thus limiting readers' understanding of what the study sought to achieve. For this a holistic application of the SLF becomes necessary in order to provide lessons for improvement in poverty reduction intervention such as microfinance schemes.

2.5 Conclusion

The world's poorest population represents the most vulnerable groups with difficulties to access services critical for their well-being and livelihood enhancement. The literature reviewed reveals the possibilities for corporations or individual entrepreneurs to serve the poor for a win-win solution to reducing poverty and enhancing business sustainability. It also recognizes the simplicity of the BoP argument by revealing cases with reference to microfinance and poverty reduction literature. Findings from the review reveals the impacts of microfinance on poor people's

livelihood to be diverse and scarcely well-synthesized. Similarly, the methodologies for analyzing the impacts have received varied criticisms including measurement inefficiencies, over-estimation of impacts and generalization of findings. This research sets out to enhance a deeper insight into the analysis of the poor peoples' livelihoods through a systematic review of the outcomes of microfinance using different cases. Towards this end, the research primarily relies on the sustainable livelihood framework to provide a comprehensive analysis into the complexity and diversity of poor people's lives. The framework enables better understanding into the outcomes of microfinance services on livelihood sustainability and poverty reduction among farming households in Sub-Saharan Africa.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

As noted in the literature review section, studies and methodologies assessing, documenting and revealing the impact of microfinance on diverse aspects of poor people's life abound. This research adopted a systematic review where findings from existing studies are compared, contrasted and synthesized to provide robust evidence for research, policy and practice. The approach seems appropriate for the researcher compared to conducting an empirical field study due to limited financial resources.

3.1 Research Approach

Systematic review as a research approach takes its roots from the medical sciences where it is widely used in testing evidences from clinical results and evaluating public health interventions (Jackson, 1980). In recent years, however, systemic reviews are increasingly selected as a useful methodology for the social and behavioural sciences. The intent of this approach is to bring together a number of separately conducted studies and synthesize their findings to provide robust evidence and analysis on a phenomenon under study (Akobeng, 2005; Boland et al., 2008). Harden (2010) suggests this approach to be very useful in closing the gap between research and practice in a particular area of study.

Systematic review as a research methodology exhibits some inherent characteristics distinct from a traditional literature review. Unlike the traditional review, the systematic review follows specific steps to assess the quality of the studies for the review in order to minimize biases, errors and any

other possibility for drawing wrong conclusions (Harden, 2010). This reveals that the approach is robust in itself and equally demanding since the researcher is expected to follow specific steps with a lot of critical analysis at each step.

The steps involved in doing a systematic review varies from one research project to another, however, the sequence demonstrates some similarities among studies. For instance, Khan et al. (2003) provide a framework consisting of five steps for doing a rigorous systematic review methodology. These are; framing the question for the review, identifying the relevant work, assessing the quality of the studies, summarizing the evidence and interpreting the studies. In the methodology section of a systematic review of health care interventions, Smith et al. (2011) considered the following; sources, review selection, quality assessment of reviews, presentation of results and implications for practice and research. ten Ham-Baloyi and Jordan (2016) also propose a five-step systematic review which includes; review question, searching the literature, critical appraisal, data extraction and data analysis. The systematic review approach adopted in this research followed the steps outlined by Khan et al. (2003). The steps are more logical and provide a strategic style to present the underlying thesis of this research from the initial question to the final findings stage. The details of Khan et al's systematic review process are as presented in the section below:

3.1.1 Framing the question for the review

In the early stages of a review, Khan and colleagues suggest that the problem a review attempts to address should be structured in a form of questions that are clear and unambiguous. Once this is done, modifications to the protocol are permitted only when different ways defining the

interventions, populations, outcomes and research design become evident. It is also important to note however that not every question can be answered from a review of individual existing studies (Russell et al., 2009). Overarching questions, for example, need to be dissected into smaller and more specific pieces in order to make it more useful, searchable, answerable and achievable sentences (ten Ham and Jordan, 2016). While framing the research question can vary from one researcher to another, the PICOT format serves as a useful template (Melnyk and Fineout-Overholt, 2005; ten Ham and Jordan, 2016). The P=Population of interest, I=Interventions, C=comparative/control intervention, O=Outcome and T=Type of study design. After the questions were framed, the PICOT was used to guide the studies search process for reproducibility and transparency purposes. It also helped to determine the eligibility of identified studies, data extraction, analysis, and interpretation of results for the review (Thabane et al., 2009).

In framing the research questions outlined in chapter one, the population of interest (P) for the review is smallholder agricultural/farming households, both men and women in Sub-Saharan Africa. This group is the poorest within the agricultural sector and is the target for microfinance interventions. There are a range of dimensions relevant for defining smallholder farmers, but the criteria used by Stewart et al. (2015) are selected as preferable. They provide concise set of criteria that are practical to the context of smallholder farmers in Sub-Saharan Africa. In their study, Stewart et al. (2015) considered smallholder farmers as households who either; farm on a limited size of farmland (less than 2 hectares); or use subsistence farming systems or a mix of subsistence and a bit of market oriented, but with limited access to market; or dependent on family labor; or have limited resources like land, capital, technical and technological support for investment and maintenance.

The intervention (I) or treatment is microfinance. The definition of microfinance can be referred to in the literature chapter (section 2.2). Core to it is the provision of access to smaller financial services to the poor for enhanced well-being. Microfinance consists of different products and services, with different delivery mechanisms used by various microfinance institutions. The review focused on five types of microfinance services. They are; micro-credit/micro-loans, micro-savings, micro-insurance, micro-leasing and fund transfer for the poor. It targeted studies reporting on the impact assessment of any of these microfinance products and services. The comparative interventions (C) are the conditions set for making any necessary comparison. To gather enough insights into the contextual outcomes of the interventions, the study also considered studies that compare different populations or different interventions. Typical examples are those that focus on inter-country comparison within Sub-Saharan Africa, or inter-household, or product and services, or institutional comparison for a particular intervention.

Poverty is a highly contested concept, and the indicators for its measurement vary from one study to the other. The outcomes of microfinance on the livelihoods of the poor are considered to be complex and multidimensional. However, the outcomes (O) in the case of this research were limited to the livelihood outcomes explored in the sustainable livelihood framework in section 2.4.1 of the literature review chapter. In pursuant to the framework, typical outcomes desired in the livelihoods of agricultural households include; more income, increased well-being, reduced vulnerability, increased security and sustainable use of natural resources.

The last step in framing the question for studies research is the type of study design (T). This component is particularly important as it is believed to have a high influence on the subsequent

steps in the methodology (Khan et al., 2003; Rusell, 2009). Microfinance schemes have been widely researched and assessed using different techniques. In the literature review chapter (section 2.3.6) for example, some of these study techniques (randomized and non-randomized designs), their strengths and weaknesses have been noted and identified. Mixed research designs are noted as a good way to build a coherent justification for a study (Creswell, 2014). The review did not limit the study design of included studies to a particular strategy. This is to help triangulate the findings of individual studies and enhance a comprehensive analysis.

The study design of the identified studies included randomized control trials (RCTs), quasi-experimental studies, simple comparison studies and focus group discussion, surveys and interviews. The RCT designs compare the before-and-after intervention outcomes for two randomly selected groups – a treatment/intervention groups and the comparison/control group. Studies that adopt quasi-experiments on the other hand compare either the pre-and-post or with-and-without intervention outcomes for a non-randomly selected groups by using baseline data. Simple comparison designs include panel data, pipeline studies and natural experiments where outcomes are assessed without any reference/comparison with data from before the intervention. The quantitative comparison designs provided adequate answers to fill the why and how questions of microfinance outcomes in the lives of the participants whereas the qualitative designs helped to provide in-depth description to outcomes of microfinance interventions.

3.1.2 Identification of the relevant work

A thorough systematic review methodology thrives from explicit and more extensive search from multiple sources including computerized and printed databases without language restrictions

(Khan et al., 2003). Accordingly, it is expected from a systematic review researcher to give a clear account of how they searched for relevant existing studies/evidences (Egger and Smith, 1998). Searching is a laborious activity involving a trawl through different data systems. In this review, studies were identified from different search sources, including computerized databases, specialist websites, and bibliography snow-balling of previous systematic reviews. The review made use of databases presented in Table 3.1 to enhance a comprehensive search strategy. All the searches were carried out on a personal computer, from January to May, 2016, and Table 3.2 details the specific search terms used.

Table 3.1: List of the search databases and resources

Computerized databases	Specialist websites	Bibliography snow-balling
African Journals Online Google scholar Scopus Jstor	Consultative group to assist the poor (CGAP) Microfinance Gateway Microfinance Network Microfinance Information Exchange the (MIX) Africa Microfinance Network Innovations for Poverty Action J-Pal Poverty Lab Eldis	Duvendack et al. (2011) Stewart et al. (2012) Stewart et al. (2010)

Source: Author’s Construct, May 2016.

In order to obtain relevant studies/cases that are consistent with the research questions, the researcher carefully selected terms and keywords in Table 3.2. They were typed in the search box of each database in the order of the columns, that is, starting with the opening word/phrase, followed by the intervention and the population. A typical example of how the search was done is: “the impact of microfinance on farming/agricultural livelihoods”; “benefits of micro-savings on subsistence farming”; and “the evaluation of micro-fund transfers on agricultural activities in Sub-Saharan Africa”.

Table 3.2: Search terms for identifying individual studies

The opening word/phrase	Intervention	Population
Impact	Microfinance	Farming/Agricultural livelihoods
	Micro-savings	Subsistence farming
Or	Micro-fund transfer	Agricultural activities in Sub-Saharan Africa
	Microfinance programme	
Evaluation	Micro-insurance	Farming activities
	Micro-credit	Poor farmers
Or	Microfinance interventions	Smallholder farmers
	Micro-leasing	Farming/Agricultural households
Benefits	Group lending	Poverty in Sub-Saharan Africa
	Micro-banking	Livelihood
	Financial inclusion	Smallholder/Micro-enterprises

Source: Author's Construct, May 2016

The search results from each data source yielded many articles, but the individual articles/reports included in the review were assessed against the components of the PICOT explained in section 3.1.1. Some studies did not spell out the study design and target participants in the titles and/or abstracts so, the reviewer ran the searches and glanced through the main documents before selecting the article for inclusion in the systematic review. This helped to eliminate duplicate studies and irrelevant materials. The lack of clarity in abstracts and titles of many research articles made the search to be very time consuming. After the initial screening of the search results, the studies identified to be relevant were further subjected to a lot of inclusion and exclusion criteria (discussed in section 3.1.3) for enhanced quality of the systematic review process and results.

3.1.3 Quality assessment of identified studies

The validity and reliability of the findings and conclusions of a systematic review is dependent on the quality of the studies identified and used for the analysis (Smith et al., 2011; Khan et al., 2003). After framing question and identifying the relevant studies, Khan et al., (2003) proposes the need for more thorough assessment of the quality of each identified studies through critical appraisal

guides and design-based checklists. This helps to reduce biases and risks of underestimating or overestimating outcomes of the study.

Table 3.3: Quality assessment criteria for included studies.

Criteria	Indicators for assessment
1. Based on topic relevance	
Focus of the topic	<ul style="list-style-type: none"> Analyses microfinance services Report on smallholder farmers in Africa Adopts an experimental, survey, or any qualitative design.
Logical link between study aims and questions	<ul style="list-style-type: none"> Clear statement of the aims and questions to reflect the topic Discusses limitations
Clarity of assumptions/theories	<ul style="list-style-type: none"> Review underlying ideas and evidences Relate the researcher's own perspective
2. Based on methodological relevance	
Defensibility of the study design	<ul style="list-style-type: none"> Justification for the design and implications for the study Awareness and procedure for reducing risks or errors
Appropriateness of sample design and size	<ul style="list-style-type: none"> Composition of the target sample Procedures in selection and/or comparison Sampling profiles
Data collection	<ul style="list-style-type: none"> Data collection tools were piloted Comprehensiveness and sensitivity of the tools Richness of the data to revealed from the tools Details about participants and fieldwork experiences
3. Based on methodological quality	
Attention to ethical issues	<ul style="list-style-type: none"> Anonymity Confidentiality Ethical approval
Formulation of the analysis and interpretation	<ul style="list-style-type: none"> Evidence of how themes/codes/constructs were generated Details of the researcher's role Clear connection between the researchers' subjectivity and the original data Coherence of reporting Logical connection to the research aim and literature reviewed
Validity of findings	<ul style="list-style-type: none"> Conclusions are clearly deduced from the data Generalizability of the conclusions Conclusions resonate with related disciplines or body of knowledge Logical link between the study questions and the findings

Source: Author's Construct, May 2016

A variety of approaches suggested by researchers include triangulation of different sources, member checking, self-reflection, peer-debriefing, external auditor, cross-checking codes (Creswell et al., 2014; Gibbs, 2007). Criteria for judging the quality of studies identified and used for this review were based on a checklist outlined by Gough (2007). They include theoretical/topical relevance, methodological relevance and methodological quality. Table 3.3 shows the details of the quality assessment criteria for the included studies. For each study, the review checked for the focus of the study, its contribution to answering the review's research questions, as well as the basis of the conceptual and theoretical arguments. It considered the appropriateness of the selected research designs and techniques (such as the sampling size and sampling method used, robustness of the data collection and recording processes, originality of the inferences drawn for the analysis), in addition to credibility in applying the techniques for a reduction of biases and enhancement of quality.

3.1.4 Summarizing the evidences

By this step, Khan et al., (2003) refer to the synthesis of study characteristics, effects and quality in order to explore the difference and similarities of the identified studies and their combined effects. Different studies addressing the focus of this research were identified to answer the research questions. While the identified studies by different authors differ in the approaches adopted and results reported, efforts were made to clarify how the diverse findings from the numerous studies were synthesized, analyzed and interpreted. According to Higgins and Green (2011) in their book titled "Cochrane Handbook for Systematic Reviews of Interventions", findings from identified studies could be synthesized either through meta-analysis or narrative reporting. Narrative reporting approach was used in this review due to the diversity of the

microfinance interventions of focus as well as the diversity of the outcome measurements from the identified studies. This approach is purely qualitative than quantitative, and as such gives more detail into the individual study results considered in the systematic review – an advantage a quantitative approach hardly provides. Tables were used to illustrate the graphical summary of the methods and techniques, type of microfinance intervention considered, outcomes, indicators for measuring the outcomes, and the direction of impact on outcomes. It was accompanied by narrative descriptions of the aggregated findings in accordance with themes coded from the three research questions.

3.1.5 Interpreting the findings

A final stage in systematic review is the interpretation of findings, and involves the exploration of publication bias (Khan et al., 2003) and cautious reporting of review results. Generally, the interpretation stage of a research is where the researcher makes meanings from research results, relates meanings to the literature review and draws conclusions for future research, policy and practice (Creswell, 2014; Spiggle, 1994). The synthesized results were interpreted with inference from themes and constructs relating to the components of the sustainable livelihood framework explained in section 4.3 and some relevant ideas in the literature review chapter. This helped to examine the connection between the theoretical and empirical domains of the impact of microfinance on the livelihoods of the poor as reported by the synthesized studies. Conclusion and recommendations were connected to a tool for future research, policy and practice.

3.2 Validity and Reliability

An important process in research is the ability of the researcher to check for accuracy and consistency of the findings revealed from the study (Gibbs, 2007). Diverse techniques were used to enhance accuracy and reliability of findings from this systematic review. Detail narrative and contextual description of the identified studies were given to ensure external validity. The codes and themes for the analysis and interpretation of the findings were also triangulated with the literature review to enhance accuracy of the study outcomes. In terms of reliability, the various techniques for identification of the studies described in section 3.1.2 were helpful in ensuring better transparency and replicability of the review findings. The techniques include extensive use of the PICOT format to guide the inclusion and exclusion criteria, and a robust methodological quality checks.

3.3 Conclusion

This chapter provided details to the research design, methods and techniques used for the investigation on the impacts of microfinance on agricultural livelihoods in Sub-Saharan Africa. It indicates that the study adopted a systematic review design and synthesized findings from previous studies to reveal the direction of impact of microfinance services on the poor. Studies were identified from academic and non-academic databases, and the findings were synthesized through narrative descriptions and graphical displays. Details of the identified studies, the analysis and interpretation of the findings from those studies are explored in the next chapters.

CHAPTER FOUR

RESULTS AND SUMMARY OF FINDINGS

4.0 Introduction

In this chapter, the review presents the results and the processes involved in identifying all the included studies. It also provides a summary of the findings from the studies identified.

4.1 Studies Identification Processes

Table 4.1 below shows the number of hits produced from each data source. For instance, out of a total of 25929 hits from the initial search results, the search from 3ie impact evaluation database, Google scholar and AgEcon Search was only 10 hits, 24800 hits and 458 hits respectively. The details of how studies were retrieved from each database is also provided in Appendix 1 Table 1.

Table 4.1: Summary of initial search results

Source/Database	Number of Studies
AgEcon search	458
3ie Impact Evaluation Database	10
Consultative group to assist the poor (CGAP) Publications and website search	14
Eldis	13
EPPI-Center Publications/Evidence Library	4
Google scholar	24800
Innovations for Poverty Action	162
J-Pal Poverty Lab	95
Journal of Microfinance	31
Jstor	32
Practical Action Publishing database	259
References of systematic review papers	42
Scopus	9
Total	25929

Source: Author's Construct, May 2016

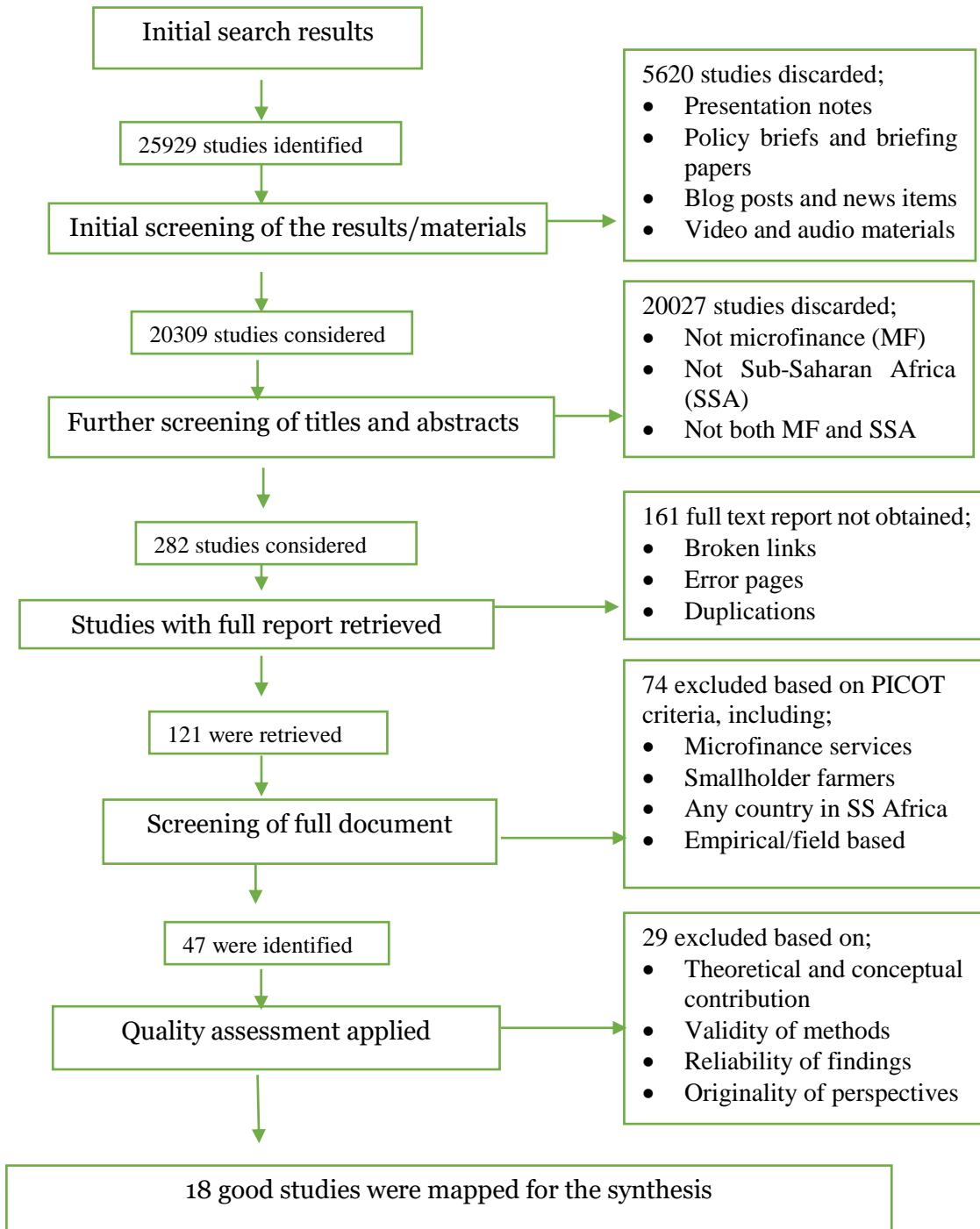
Figure 4.1 below also presents a systematic summary of how the total search hits of 25,929 was narrowed down to only 18 relevant hits/studies for the systematic review. At the initial stage,

irrelevant hits such as blogposts, news items, slideshows, and interviews were discarded since the research is intended to source data from well-researched and established findings with theoretical and methodological rigor, but not anecdotes. The titles and abstracts were screened and reviewed to ensure that the focus of each study matches the systematic review topic. Out of the 25,929 studies from the first hit, 5620 and additional 20027 studies were removed after the initial screening of the first hit and further screening of titles and abstract.

The remaining 282 were to be retrieved for full screening, but 161 full texts could not be retrieved because some of the links were broken whilst others were inaccessible and only produced error pages. Efforts to obtain the materials could not resolve the problem. Duplicate studies across different sources were further deleted. 121 fully retrieved text/studies were screened against the PICOT format explained in section 3.1.2, but 74 of them were excluded for not meeting the criteria; some focused on microfinance institutions and not the products or services, others focused on the poor in Sub-Saharan Africa but not specifically to smallholder farmers. A further 28 studies were excluded based on the review checklist for quality assessment provided in Table 3.3 in the methodology section. At the end, 18 of the studies were earmarked for the systematic review because they meet all the review inclusion criteria.

To ensure that the review relied on reliable findings, the researcher further evaluated and ranked the methodological quality of all the 18 identified studies. Table 4.2 shows the methodological quality score of each study based of the level of risk. Of the 18 studies included in the review, 9 were judged to have low risks of bias, and the rest were of medium risk of bias.

Figure 4.1: Search results and the processes involved in selecting and screening studies



Source: Author's Construct, May 2016.

Table 4.2: Methodological relevance and quality of the included studies

Main Paper	Study design strategy	Notes on quality assessment	Quality assessment score
Morris and Barnes (2005)	Survey and interviews	<ul style="list-style-type: none"> Limited information on the relationship between micro-credit and income 	Medium risk of bias
Doocy et al. (2005)	Comparative survey	<ul style="list-style-type: none"> Robust check Defined indicators and constructs 	Low risk of bias
Gine and Yang (2008)	RCT	<ul style="list-style-type: none"> Limited checks on randomization and attrition biases No before-experiment data Design strategy not well explained 	Medium risk of bias
Berhane and Gardebroek (2009)	Longitudinal survey	<ul style="list-style-type: none"> Well defined indicators for measuring outcomes Long-term impact measurement Little information on unobservable biases 	Medium risk of bias
Shimamura and Lastarria-Cornhiel (2009)	Survey design.	<ul style="list-style-type: none"> Randomly sampled respondents to reduce program area and beneficiary selection biases usually induced by the MF agencies. Restricted claims on the data and findings Vivid explanation of findings with respect to previous researches. 	Low risk of bias
Asharf et al. (2009)	RCT	<ul style="list-style-type: none"> Assess treatment-on-the-treated impact and test for demographic similarity to reduce attrition. Conduct baseline and follow-up survey for enhanced validity 	Low risk of bias
Liverpool and Winter-Nelson (2010)	Survey data from ERHS, text information from secondary reports, and field interviews	<ul style="list-style-type: none"> Detail description of constructs Little information on hidden biases, especially from the secondary data used for the analysis 	Medium risk of bias
Kotir and Obeng-Odoom (2009)	Survey	<ul style="list-style-type: none"> Unclear definition of themes and construct Limited information on sampling and sampling bias check 	Medium risk of bias
Hill and Viceisza (2012)	Quasi experiment	<ul style="list-style-type: none"> Participant selection biases No before and after data for enhanced comparison 	Medium risk of bias
Nuhu et al. (2014)	Survey design questionnaires	<ul style="list-style-type: none"> Validity and reliability of the measurable indicator is questionable 	Medium risk of bias

Kirui et al. (2013)	Cross-sectional survey	<ul style="list-style-type: none"> • Little information on data scoring technique 	Medium risk of bias
Beaman et al. (2014a)	RCT	<ul style="list-style-type: none"> • Attrition check to reduce unobservable different between the experiment groups • Resonate the study results to previous models on entrepreneurship and liquidity constraints 	Low risk of bias
Beaman et al (2014b)	RCT, household survey, and key informant interviews	<ul style="list-style-type: none"> • Attrition check to reduce unobservable different between the experiment groups 	Low risk of bias
Fink et al. (2014)	RCT	<ul style="list-style-type: none"> • Validate attrition and selection biases • Compared before and after intervention 	Low risk of bias
Brune et al. (2014)	RCT	<ul style="list-style-type: none"> • Well-defined robust checks 	Low risk of bias
Karlan et al. (2014)	RCT	<ul style="list-style-type: none"> • Multiple year experiment for detail trends in the results • Limited before-experiment data 	Low risk of bias
Delavallade et al. (2015)	Quasi-experiment	<ul style="list-style-type: none"> • No before intervention data about the participant • Little information for assurance on treatment's contribution to outcome 	Medium risk of bias
Tarozzi et al. (2015)	RCT	Detailed baseline information Enormous checks on attrition biases	Low risk of bias

Source: Author's Construct, May 2016.

4.2 Description of the Identified Studies

A total of eighteen studies were found to meet the robust methodological quality and topic relevance criteria for this review. Table 4.3 summarises the population, study design, intervention and outcomes of the studies included in the review. The detailed narrative analysis of the included studies is given below;

4.2.1 The Population

From the Table 4.3 all of the identified studies meet the target population for the study, which is, small-holder farming households or groups in Sub-Saharan Africa. Typical characteristics of these groups of people include cultivation of small farm size, a high dependency on mutual self-help activities and a dominance of women. Most of the identified studies such as Asharf et al. (2009) focused on horticultural self-help groups in Kenya, Tarozzi et al. (2015) experimented with farmers from peasant associations in Ethiopia, Kotir and Obeng-Odoom (2009) purposively sampled household heads from predominantly small farming communities in northern Ghana, and Beaman et al (2014b) conducted a trial focusing on women farmers in Mali.

Table 4.3: Details of studies included in the review

Reference	Population (P)	Type of Intervention (I)	Comparative Intervention (C)	Outcomes (O)	Type of study design (T)
Morris and Barnes (2005)	Combined agricultural and non-agricultural households; Uganda	Micro-loan: FINCA, FOCCAS and PRIDE	None	Size of land cultivation Spending on agricultural inputs Income from crops Durable assets	Mixed method design
Doocy et al. (2005)	Combined agricultural and non-agricultural households; Ethiopia	Micro-lending: WISDOM	None	Wealth Income Home Land ownership	Survey
Gine and Yang (2008)	Ground nut and maize farmers; Malawi	Micro-credit	Micro-loans versus micro- insurance	Technology adoption; high yielding seedlings	Experimental design
Berhane and Gardebroek (2009)	Farmers; Ethiopia	Micro-credit	None	Consumption Housing	Survey
Shimamura and Lastarria-Cornhiel (2009)	Agriculture households; Malawi	Microcredit: Malawi Rural Finance Company (MRFC)	None	Educational progress for children Grade repetition in schooling Enrollment in school	Survey design
Asharf et al. (2009)	Horticultural self-help groups; Kenya	Micro-credit DrumNet programme	Credit with versus without export and transport supervision.	Productivity Marketing cost Income gains	Experimental design
Liverpool and Winter-Nelson (2009)	Peasant associations: Ethiopia;	Micro-credit	Always assets poor, never assets poor and transitory asset poor	Technology use Consumption	Mixed method design
Kotir and Obeng-Odoom (2009)	Households in predominantly small farming communities; Northern Ghana	Micro-credit	None	Profit and income Welfare-assets Social life	Survey design

Hill and Viceisza (2012)	Farmer groups; Kebele, Ethiopia	Micro-insurance (Iddirs)	None	Investment – fertilizer purchase	Experimental design
Nuhu et al. (2014)	Farmers; Northern Ghana	Micro-credit	None	Crop production	Survey
Kirui et al. (2013)	Farmers; Kenya	Mobile Money transfer	None	Agricultural input use Agricultural commercialization Farm income	Survey
Beaman et al. (2014a)	Farmers; Mali	Micro-lending: Soro Yiriwaso	Credit offers versus cash grants	Investments; fertilizer use and input expenditures Agricultural profits	Experimental design
Beaman et al (2014b)	Women farmers; Mali	Micro-savings Savings for Change	None	Food security and consumption Savings stock Agricultural expenditure Education, health, social capital Female decision-making power	Mixed method
Fink et al. (2014)	Small-scale farmers; Rural Zambia	Micro-loan		Consumption On-farm versus off-farm labor Local wages	Experimental design
Brune et al. (2014)	Tobacco farmers; Malawi	Micro-savings		Input spending Yield Per capita consumption	Experimental design
Karlan et al. (2014)	Small-scale farmers; Ghana	Micro-insurance	Cash grants versus micro-insurance	Input expenditure	Experimental design
Delavallade et al. (2015)	Farmers of Rotating Savings and Loans Associations (ROCSAs); Senegal and Burkina Faso	Micro-insurance and savings	Micro-insurance versus micro- savings	Average yield Food security and consumption Land cultivation Input spending Fertilizer use	Experimental design
Tarozzi et al. (2015)	Peasant associations; Rural western Ethiopia	Micro-loans	None	Income School attendance Health and Food adequacy Women involvement in decision-making	Experimental design

Source: Author's Construct, May 2016.

While about sixteen of the included studies clearly met the target population criteria for this review, as can be seen from Table 4.3, two were somewhat less focused. They are; Morris and Barnes (2005) and Doocy et al. (2005), which focused on overall households in rural or village settings without any priority to targeting small-holder farmers. These studies were however finally considered and included because the household characteristics depicted were not different from the remaining eighteen studies identified. For example, the sampled population in Morris and Barnes (2005) were popularly known to engage in subsistence crop production and animal rearing, which are common characteristics of smallholder farmers in Sub-Saharan Africa.

4.2.2 Intervention

Twelve studies assessed micro-credit interventions. Some of them were stand-alone interventions (Shimamura and Lastarria-Cornhiel 2009; Berhane and Gardebroek, 2009; Doocy et al. 2005) whilst others were combined microfinance and social transformation programmes (Asharf et al., 2009; Liverpool and Winter-Nelson, 2009).

For instance, Shimamura and Lastarria-Cornhiel (2009) assessed the impact of agriculture credit programme participation on children's school attendance in rural areas of Malawi. This is a typical stand-alone programme implemented by the Malawi Rural Finance Company (MRFC). It aimed to provide production credit to farmers who cultivate maize, tobacco, groundnut and cotton. The credit participation was in two forms; individual lending operation and group lending activities where small-holder farmers without land titles organize themselves to assume collective liability for the loans provided by the MRFC. On the other hand, Asharf et al. (2009) focused on a micro-credit programme delivered by DrumNet in Kenya. This intervention is not a stand-alone; DrumNet provided the credit services with supply chain connection by linking the farmers to

transportation facilitators and crop exporters. The paired services were pro-poor programmes to complement the credit facilities for enhanced progress of the poorer farmers.

Three studies evaluated micro-savings services (Beaman et al., 2014b; Brune et al., 2014; Delavallade et al., 2015). The first assessed the activities of a Savings for Change (SfC) programme in Mali developed by Oxfam America/Freedom from Hunger (OA/FFH). Under this programme, women from rural areas that are not within reach to institutional/formalized lenders are empowered to organize themselves, save and accumulate lump sum of money and then lend to members. The second considered formal savings packages provided by banks and private sector firms to tobacco farmers in Malawi. As part of the savings package, farmers were provided with an opportunity to channel their proceeds into the accounts opened for them in their own name in order to help them accumulate lump sum for future agricultural input purchases. The evaluation of the service focused on the impact of the savings on agricultural investments and farming households' well-being. The third involved an experimental assessment of different savings packages in West Africa, with cases drawn from Burkina Faso and Senegal. Forms of savings studied are; savings at home for agricultural inputs, savings into a treasury of a local group for emergencies, and savings into a treasury of the same local group for agricultural input.

With regard to micro-insurance, four studies were found; two typical micro-insurance studies (Viceisza and Hill, 2012; Karlan et al., 2014), and two others that compared studies with micro-savings (Delavallade et al., 2015) and micro-credit (Gine and Yang, 2008). In the case of Karlan et al. (2014), the micro-insurance package was initiated by the researchers for the purpose of the study which aimed to experiment whether a lack of insurance for farmers can limit investment in agricultural activities. The test consisted of an initial implementation of the packages to two groups

of randomization farmers (one receiving a cash grant and the other receiving insurance) and a follow-up analysis of the contribution of each package. This helped to ascertain the investment effects of micro-insurance packages on farmers with-and-without insurance as well as any binding financial constraints that may exist. Unlike Karlan et al. (2014), Gine and Yang (2008) experimented with an existing micro-insurance scheme implemented by the National Smallholder Farmers Association of Malawi (NASFAM). Under the scheme farmers were given the option to have a loan for improved groundnut and/or hybrid maize seed and fertilizer package with or without an insurance package on a fair premium. While one study focused on micro-fund transfers (Kirui et al., 2013), there were no studies on micro-leasing that qualified for inclusion in this review. Kirui et al. (2013) revealed that the level of awareness of micro-fund transfers among farmers is high; and the usage of the service was found to be 52 percent among sampled farmers.

4.2.3 The Study Design

Studies that qualify for inclusion in the review are not limited to a specific research design. Among the included studies, some adopted quantitative design (either survey or experiments), none used purely qualitative design but a few ones relied on a combined approach (see Table 4.3). A majority (9) of the studies adopted an experimental design specifically to test the influence/impact of microfinance treatment using a set of defined outcomes. Mostly, these studies tended to compare two groups (with and without microfinance intervention) using either baseline data and/or after (end-line) data (Gine and Yang (2008), Asharf et al. (2009), Hill and Viceisza (2012), and Beaman et al (2014a).

In their experimental evaluation of DrumNet's microfinance services to self-help groups (SHGs) in Kenya, Asharf et al. (2009) for instance randomly assigned members of the SHGs into two

treatment groups (those with all DrumNet services and those with the services except credit) and a control group (those without any form of DrumNet's services). After the randomization, the three groups were tested to make sure that they exhibited similar demographic characteristics. In April 2004, a baseline data was conducted on the total of 726 randomized farmers and a final one (end-line data) in May 2005. This helped the authors to test for the differences in livelihood outcomes which were considered as the attributable impact of the specific DrumNet's services received. Unlike Asharf et al. (2009), Hill and Viceisza (2012) randomized between two groups (a treatment and control group) and relied only on one set of data to test how a baseline environment for investment in agricultural livelihoods without insurance differs from an environment with insurance for farmers.

Six (6) other studies (Nuhu et al., 2014; Kirui et al., 2013; Shimamura and Lasterria-Cornhiel, 2009; Berhane and Gardebroek, 2009; Doocy et al., 2005; Kotir and Obeng-Odoom, 2009) adopted survey designs. Nuhu et al. (2014) purposively sampled 100 farmers in East Mamprusi District of Ghana for an oral questionnaire survey to gather data on agricultural household's demographics and crop production related activities. The questions were both closed and open-ended types. While the closed-ended ones were mainly a 5-point Likert scale typed, the open-ended question were opinion-based intended to solicit individual experiences on microcredit schemes. This enhanced the internal validity for the existing relationship between micro-credit and crop production.

The remaining three of the included studies adopted a mixed approach, combining a particular form of quantitative design with a qualitative one. They include; Liverpool and Winter-Nelson (2010), Morris and Barnes (2005) and Beaman et al. (2014b). In their explanatory mixed method

approach, Liverpool and Winter-Nelson (2009) combined survey data, text information and notes from the field to examine the impact of micro-credit on technology and well-being of smallholder farmers in Ethiopia. Notes were gathered from interviews conducted with key informants, to complement survey data and text information respectively sourced from the Ethiopian Rural Household Survey (ERHS) and governmental and non-governmental reports. The descriptive opinions from interviewed participants helped the authors present detailed interpretative explanations to the initial quantitative results and analysis.

4.2.4 Outcomes

In addition to describing the population, the type of study design and the intervention for the included studies, the review also explores the outcomes assessed and the direction of impact in relation to livelihood sustainability and poverty reduction among farming households. The range of outcomes that are presented are grouped into; income, human development, farm investment, assets accumulation and women empowerment.

4.2.4.1 Income

Overall, findings from the identified studies are summarised in Table 4.4. It indicates that microfinance products and services can have either a positive effect or no effect on the income levels of agricultural households. Evidences for the direction of impact were revealed mostly from micro-credit, micro-savings and micro-fund transfer evaluations. No studies were found reporting on micro-insurance, micro-savings and micro-leasing interventions.

Table 4.4: Direction of impact on income

Main Study	Microfinance Intervention	Outcome Indicators	Direction of impact
Morris and Barnes (2005)	Micro-credit/loans	Income from crops	+ ¹
Doocy et al. (2005)	Micro-credit/loans	Diversified income	+
Asharf et al. (2009)	Micro-credit/loans	Income gains	∓ ²
Kotir and Obeng-Odoom (2009)	Micro-credit/loans	Profit and income	+ (varied)
Tarozzi et al. (2015)	Micro-credit/loans	Income	+
Kirui et al. (2013)	Micro-fund transfer	Farm income	+
_____	Micro-insurance	_____	_____
_____	Micro-savings	_____	_____
_____	Micro-leasing	_____	_____

Source: Author's Construct, May 2016.

From table 4.4 above, the study by Morris and Barnes (2005) reveal that micro-credit services have a positive relationship with income from crops. Specifically, the authors show that FINCA³, FOCCAS⁴ and PRIDE⁵ micro-lending programs in Uganda enabled clients to expand the size of land cultivated by 25 percent and diversify the crops grown, leading to an increase in output and a higher likelihood for an increase in income. Similarly, the study by Doocy et al. (2005) found members of World Vision's affiliated lending program – WISDOM initiative – in Ethiopia to have more diversified income sources than non-members. Their data indicates that for each additional income source household's income increases by 23 percent on average. Further, it indicates that households with primarily non-agricultural income had on average 39 percent income increase than households with agricultural income; rural residents had 15 percent less income than urban residents; while literate clients also had on average 15 percent more than illiterate clients. The case

¹ + means positive relationship

² ∓ means neutral or no effect/relationship

³ Foundation for International Community Assistance

⁴ Foundation for Credit and Community Assistance

⁵ Promotion of Rural Initiatives and Development Enterprises

of Ethiopia suggests that the form of diversification, residency status (rural versus urban) and educational level among micro-credit clients played an important role in increasing income.

It is important to note however that, the direction of impact on income from micro-credit services seems to vary across different studies included in the review. Table 4.4 for instance reveals that a study by Asharf et al. (2009) reported no-effect of microfinance services on income results. From their experimental study assessing DrumNet services (micro-credit, export linkages and transport facilitation) in Kenya, they found a 32 percent increase in income for new clients, but did not find any significant income differences between the sampled treatment group (those receiving all DrumNet services) and the treatment without credit group (those receiving all except credit). They suggest that the credit component of DrumNet services did not have any impact on the farmers.

Data from the study conducted by Kotir and Obeng-Odoom (2009) reveals differing effects of micro-credit on income and profit levels of farmers in Ghana. They claim that 46.8 per cent of the sampled clients realized a ‘marginal improvement’, 29.5 percent saw ‘lots of improvement’ in their profit and income whilst 23.7 per cent indicated their profit and income ‘remained the same’. However, the reported profit and income are subject to measurement errors due to a lack of record keeping among the micro-credit clients.

In terms of micro-fund transfer, the table 4.4 indicates that the study by Kirui et al. (2013) suggest a significant positive effect on the income levels of small-scale farmers. The income levels of farmers using Mobile Money Transfer (MMT) were reported to have increased by \$224 compared to the non-users. The study claims that the use of MMT services enabled farmers them to make cheaper, affordable and easier agriculture-related purchases which eventually increased profit margins.

It is suggestive from the above study findings that microcredit and micro-fund transfer are mainly used by famers as opposed to micro-leasing, micro-savings and micro-insurance. This helps to improves farmers’ income and allows them to be able to make significant agricultural investments.

4.2.4.2 Asset Accumulation

Assets are critical for every aspect of poor people’s life. With respect to farming households, the availability of physical assets such as arable land and financial assets like savings stock enhance better investment into farming activities. There is evidence that microfinance has an effect on the accumulation of assets among the poor. Table 4.5 shows the studies identified and the direction of impact on diverse aspects of farming households’ assets. Evidences were gathered from the assessment of micro-credit, micro-savings and micro-insurance interventions. No studies were found reporting on the impact of micro-fund transfer and micro-leasing on asset accumulation.

Table 4.5 Direction of microfinance impact on asset accumulation

Main Study	Intervention	Outcome Indicators	Direction of impact
Doocy et al. (2005)	Micro-credit/loans	Household durables and Livestock value	≠
		Home and land ownership	+
Morris and Barnes (2005)	Micro-credit/loans	Household durable assets	+
Berhane and Gardebroek (2009)	Micro-credit/loans	Housing improvement	+
Nuhu et al. (2014)	Micro-credit/loans	Farm output/ crop production	+
Beaman et al (2014b)	Micro-savings	Livestock holdings	+
		Savings stock	+
		Access to loans	+
		Farm yield	+
Tarozzi et al. (2015)	Micro-savings	Livestock owned and value of sales	+
Brune et al. (2014)	Micro-savings	Farm yield/output	+
Delavallade et al. (2015)	Micro-savings	Farm yield	+ (Lower)*
	Micro-insurance	Average yield	+ (Higher)*
_____	Micro-fund transfer	_____	_____
_____	Micro-leasing	_____	_____

(*) = Outcomes from comparative microfinance services/interventions

Source: Author’s Construct, May 2016.

Table 4.5 above shows that a study by Doocy and colleagues (2005) found micro-credit to have a positive correlation with home and land ownership. In their study, the data showed an increased asset value for 69.9 percent of the clients, no change in asset value for 23.3 percent and a decrease in asset value for 6.8 percent of both the new and established clients participating in a lending program in two villages of Ethiopia – Sodo and Adama. But there was no effect on household durables and livestock value as their results suggest a similarity in the value of change observed among members of the lending programme and non-members.

In contrast to Doocy and colleagues (2005) in Ethiopia, Morris and Barnes (2005) found evidences of increased durable assets (including mattresses, TV, radio, bed and stove) in Uganda. The average value of assets owned by a micro-credit client was reported to be twice more than the non-clients. The difference was highly significant for households residing in urban Kampala – the capital of Uganda – than those in rural Mbale and Masaka. In the former, it could be suggested that the use of micro-credit services financially empowered the clients to make enough expenditures and acquire more television sets than non-clients. Compared to the case in Ethiopia (Doocy et al., 2005), the availability of baseline data for both clients and non-clients in Uganda (Morris and Barnes, 2005) was influential in arriving at the direction of impacts reported.

Evidences reported by Nuhu et al. (2014) also reveal possible cases of increased farm output (bags of maize, groundnut, beans, millet and yams) by more than one-third (0.314) for any GHC1.00 increase in credit used by farmers in Ghana. But the study did not provide enough data on how the

estimate were ascertained. The conclusion that micro-credit can contribute to farmers' assets in northern Ghana cannot therefore be said with considerable certainty.

As indicated in Table 4.5, micro-savings and micro-insurance positively enhance asset accumulation among women farmers. The evidences were reported from studies conducted in Mali, Malawi, Senegal and Burkina Faso. The study by Beaman et al., (2014b) suggests that in Mali, access to a Savings for Change program increases client savings stock by 30 percent, increases their likelihood of getting a loan by 3 percent, the value of their livestock holdings by 13 per cent and their average farm yield by 23 per cent more than non-members. Brune et al. (2014) also report cases of small-scale formal savings in Malawi contributing substantially to increasing farm output/yield of small-holder tobacco farmers by 21.4 percent. While micro-savings have positive effect on asset accumulation for farmers' livelihoods, there seem to be different contributive factors across cases. In Mali (Beaman et al., 2014) and Malawi (Brune et al., 2014) the amount of savings accumulated played a role on the direction of impacts. But it was rather the type of savings (commitment savings with group treasury rather than at home) that influenced asset accumulation in Senegal and Burkina Faso (Delavallade et al., 2015)

In comparing micro-savings to micro-insurance services, Delavallade et al., (2015) found micro-insurance to have a positive and significant correlation with increased farm yield for members of ROCSAs in Senegal and Burkina Faso than micro-savings services. This suggests that micro-insurance in all form is effective in enhancing assets accumulation due to its potential to encourage better input use among farmers in Sub-Saharan Africa, making it possible for them to manage post-harvest risks.

4.2.4.3 Farm Investment

In addition to income and assets accumulation, the review also considered studies reporting on the contributions of microfinance to farm investment with reference to the size of land cultivated, the amount spent on input, the level of technology adoption and the type of seedlings used. Table 4.6 shows the direction of impact of microfinance on farm investment as reported by the studies reviewed. The evidences identified came from all the targeted microfinance services except micro-leasing. Generally, the available evidences suggest a mixed impact of microfinance in enhancing investment in farming activities. Findings, from micro-saving, micro-insurance and micro-fund transfer show positive impacts whilst the impact of micro-credit were reported to be mixed.

Table 4.6: Direction of impact on farm investment

Main Study	Microfinance Intervention	Outcome Indicators	Direction of impact
Morris and Barnes (2005)	Micro-credit/loans	Inputs use	+
		Land cultivation	+
		No. of crops grown	+
Gine and Yang (2008)	Micro-credit/loans	Technology adoption	+ (Higher)*
	Micro-insurance	Technology adoption	+ (Lower)*
Liverpool and Winter-Nelson (2010)	Micro-credit/loans	Technology use	≠ (asset poor) + (non-asset poor)
Beaman et al (2014a)	Micro-credit/loans	Land cultivation	+
		Fertilizer use	+
		Input expenditures	+
Fink et al. (2014)	Micro-credit/loans	Labour allocation	-
Beaman et al (2014b)	Micro-savings	Input use	≠
Brune et al. (2014)	Micro-savings	Input expenditures	+
Delavallade et al. (2015)	Micro-savings	Input spending and use	+ (Less effective)*
	Micro-insurance	Input spending and use	+ (More effective)*
Hill and Viceisza (2012)	Micro-insurance	Fertilizer purchases	+
Karlan et al. (2014)	Micro-insurance	Input expenditure	+
Kirui et al. (2013)	Micro-fund transfer	Input use	+
		Commercialization	+
_____	Micro-leasing	_____	_____

(*) = Outcomes from comparative microfinance services/interventions

Source: Author's Construct, May 2016.

Table 4.6 indicates that some studies found micro-credit services to be significantly effective in enhancing farm investment (Morris and Barnes 2005; Gine and Yang, 2008; Beaman et al., 2014a). The studies suggest that at the household level, farmers in Uganda, Malawi and Mali were able to increase their input expenditures, use more fertilizer, adopt a lot of improved seedlings, cultivate more land and hired additional labour for farming activities.

Morris and Barnes (2005) specifically reported that members of three micro-lending schemes – FINCA, FOCCAS and PRIDE – in Uganda were able to increase the size of land cultivated by 25 percent and diversified the type of crops grown. In addition, the program enabled members to increase expenditures on agricultural inputs about four times more than the non-member farmers. Similarly, Beaman et al. (2014a) found a significant positive relationship between participation in the Soro Yiriwaso micro-credit program and farm investments in Southern Mali. The farmers were reported to have expanded their land size by 0.094 ha, increased fertilizer expenses by \$10.35 and chemical expenses including herbicides and insecticides by \$5.08.

The study by Liverpool and Winter-Nelson (2009) revealed no significant effect of micro-credit on technology adoption (fertilizer application, pesticides use and extension services) for asset-poor households in Ethiopia. Fink et al. (2014) also found a negative effect of micro-credit on labour allocations and wage distortions in some farming communities of Zambia. While this may be attributed to households' diversion of livelihoods from labour jobs to entrepreneurship-oriented activities, the case in Ethiopia was different. It became evident that reasons such as the lack of compatibility of micro-credit to farming activities of the poorest households, preference of the

poor to divert loans into other uses, and a lack of complementary resources to make technology adoption effective were contributory factors.

Findings from micro-savings, micro-insurance and micro-fund transfers suggest a positive correlation between microfinance services and farm investment. Gine and Yang (2008) reveal an overall increase in the rate of farm technology (high-yielding maize and ground nut) take-up among both insured and uninsured micro-credit clients in Malawi. The take up was reported to be higher, that is 33 percent, among clients who accessed uninsured packages compared to only 13 percent of those offered micro-insurance with loan. Perhaps, a potential explanation could be that agricultural households implicitly presume the limited liability inherent in the loans to be a form of insurance. Therefore, bundling a credit with formal insurance package (premium charged) is effectively an increase in the rate of interest on the loan.

Further from table 4.6, the study by Delavallade et al. (2015) tests the variation of impact between micro-savings and micro-insurance in Senegal and Burkina Faso. They found insurance treatment groups to be more effective in enhancing input spending and use than the savings treatment groups. In the end, it was concluded that the type of savings product influenced the direction of impact on farm investment than the amount of savings accumulated. In this case for instance, highly committed savings packages with groups or formal banks could be seen as influential than personal savings at home.

4.2.4.4 Human Development

Table 4.7 summarises the number of reviewed studies reporting the impact of different forms of microfinance products and services on various dimensions of human development, particularly

consumption, schooling, health, food security, social network and many other welfare needs. The studies reporting on this category of impact explored micro-credit services in Zambia, Ethiopia, Malawi and Ghana. Others also focused on micro-savings and micro-insurance in Mali, Senegal and Burkina Faso. There was no study on micro-fund transfers and micro-leasing.

Table 4.7 Direction of impact on human development

Main Study	Microfinance Intervention	Outcome Indicators	Direction of impact
Berhane and Gardebroek (2009)	Microcredit	Consumption and housing improvement	+
Shimamura and Lastarria-Cornhiel (2009)	Microcredit	Child schooling	-
Liverpool and Winter-Nelson (2009)	Microcredit	Consumption	∓ (poor) + (non-poor)
Fink et al (2014)	Microcredit	Consumption	+
Kotir and Obeng-Odoom (2009)	Microcredit	Welfare spending	+
Tarozzi et al. (2015)	Microcredit	School attendance	∓
	Microcredit	Food security	+
Beaman et al (2014b)	Micro-savings	Food security and consumption	+
		Housing quality	+
		Education and health	∓
Delavallade et al. (2015)	Micro-savings	Food security	+ (less)*
	Micro-insurance	Food security	+ (more)*
Brune et al. (2014)	Micro-insurance	Per capita consumption	+
_____	Micro-fund transfer	_____	_____
_____	Micro-leasing	_____	_____

(*) = Outcomes from comparative microfinance services/interventions

Source: Author's Construct, May 2016.

There exist wide variations in the direction of impacts reported from micro-credit assessments as shown in Table 4.7 above. Tarozzi et al. (2015) found micro-credit to have significant positive impact on food security but no effect on school attendance among children (6-15 years) or older cohorts (16-20 years) in western Ethiopia. Interestingly in Malawi, Shimamura and Lastarria-Cornhiel (2009) report that micro-credit uptake decreased school attendance for young girls from client households. As adult females get busy with farm activities financed by micro-credit, young

girls are made to take up household chores responsibilities thereby affecting performance at school. However, their data did not show any clear evidence of the girls dropping out of school or working on farms. Instead they found female children simultaneously attending school and taking up responsibility of domestic household chores. It is thus suggestive from the above that micro-credit could delay school enrollment and induce grade repetition, leading to interruptions in educational progress.

Another study by Berhane and Gardebroek (2009) found micro-credit to be effective in increasing annual per capita consumption and the probability of housing improvement among client households in northern Ethiopia. Similar results were reported by Fink et al. (2014) from an experiment in Zambia where they found credit treatment groups to consume more meals (about 11 percent), and had a 45 percent less probability of missing a meal than the control groups. Whilst evidences from northern Ethiopia and Zambia suggest positive effect of micro-credit on consumption growth, Liverpool and Winter-Nelson (2010) did not find any direct relationship with reference to poorest households in northern and central highland regions of Ethiopia. They suggest the insufficiency of assets (such as arable land, farm implements, livestock and education) among the poorest groups likely explains the findings above.

Table 4.7 also shows that micro-insurance services is more effective in enhancing food security than micro-savings. The study by Delavallade et al. (2015) reveal that insured farming households in Senegal and Burkina Faso have a higher consumption of luxury food items (like meat, fish, rice and onions) in both harvesting and lean seasons. Though the study found farming households with micro-saving to have increased consumption of luxury food items, it was not as higher as those with farming insurance. Similar to the study by Delavallade et al. (2015), Beaman et al. (2014b)

also found women farmers participating in a Savings for Change program in Mali to have higher levels of stable consumption throughout the year and improvement in food security than non-participants. There were also evidences of increased quality of housing (the roof, walls and floor) but no effect on educational (enrolment and expenses) and health outcomes (likelihood of illness and expenditures). From the narrative above, it could be assumed that restrictiveness of savings withdrawal played a key role in reducing micro-savings impacts on the consumption of luxury food items in Senegal and Burkina Faso. Similarly, the flexibility of savings structure contributed to achieving the above results reported in Mali.

4.2.4.5 Women Empowerment

One of the main objectives of microfinance is to economically empower women and make them active participants in reproductive and productive decision making within and beyond household level. There were two studies which considered the impact of microfinance on an aspect of women empowerment; one from micro-credit assessment in Ethiopia (Tarozzi et al., 2015) and the other on micro-savings in Mali (Beaman et al., 2014b), as shown in Table 4.8.

Table 4.8: Direction of impact on women empowerment

Main Study	Intervention	Outcome Indicators	Direction of impact
Tarozzi et al. (2015)	Micro-credit	Contraceptive use decision-making	≠
		Involvement in labour market	≠
Beaman et al (2014b)	Micro-savings	Female decision-making power	≠
_____	Micro-insurance	_____	_____
_____	Micro-fund transfer	_____	_____
_____	Micro-leasing	_____	_____

Source: Author's Construct, May 2016

As indicated in Table 4.8, the results from the two studies seem consistent. They confirm that micro-credit and micro-savings hardly have any effect on women empowerment. The study by

Tarozzi et al. (2015) asked women about their involvement in decision making relating to over 20 different aspects of their reproductive and productive life. Some the questions centered around the number of children to have, contraceptive use, woman's work outside the household, when daughters can marry, food eaten at home, purchases for household items, children's education, family health, gifts for special occasions, monthly savings among others. The data revealed that participation in credit schemes have done little to empower them in the above aspects of household decision-making. This result seems unsurprising because the study confirmed that the micro-credit provider did not provide the services exclusively to women. Also Beaman et al., 2014b experimented women farmers in a Savings for Change program in Mali, and found micro-savings not to have any effect on women's ability to decide on their own welfare and business expenses. The results above are perhaps indicative of the somewhat non-unitary/non-cooperative nature of intra-household bargaining/decision making common in most African homes.

4.3 Summary of findings

The review identified and synthesized the results of 18 studies in relation to agricultural livelihoods and poverty reduction in Sub-Saharan Africa. In this section, a narrative summary of the review findings is provided in the sections below and in a manner that respond to the research questions the study set out to answer. These findings are further summarised and presented in figure 4.2.

4.3.1 Microfinance services used for agricultural livelihoods

Most of the identified studies focused on micro-credit interventions, with a few reporting on micro-insurance and micro-savings. Only one study focused on micro-fund transfer and there was nothing on micro-leasing. The evidences further suggest that farming households in Sub-Saharan Africa

access microfinance services through formal (established bank) or informal (group-based activities) institutions. With formal banks, farmers are given the opportunity to use securable credit, savings or insurance services in individual's own name. On the other hand, in the informal case, services are secured through treasury of a local group. The review also found that in some cases microfinance services are rendered as stand-alone or market-based development interventions usually paired with schemes such as financial management training, market connection and transportation network linkages for the poor farmers.

The results presented in table 4.3 show many reported cases of micro-credit from all the studies identified than the other forms of microfinance services. This somewhat suggests that farmers seem to prefer micro-credit/loan packages for farm productive activities more than all the other services. A typical farmer considers the liability in loan contracts as a form of insurance thus, bundling loans with insurance would mean an additional cost (premium payment) to the interest rate payment. For this reason, a farmer prefers micro-credit package to micro-insurance. Also, smallholder farmers in Sub-Saharan Africa seem to have very low levels of commitment to micro-savings partly due to small-scale of production and limited earnings. Further, micro-fund transfers are mobile-based microfinance services to the poor. Even though they have the potential to positively benefit the poor, the review found few studies reporting on the level use of the service.

4.3.2 Microfinance services and agricultural productivity

Evidences on farm investment in section 4.2.4.3 and table 4.6 show the level of farm productivity that is attributable to the use of microfinance services among farmers in Sub-Saharan Africa. The

review found that microfinance services have many positive influences on agricultural productivity (see left column of fig 4.2).

Micro-credit client farmers are able to increase the amount of input use, input expenditures, expand land size, use more fertilizers, adopt new crop technology and enhance commercialization (pay for additional farm hands and hire trucks to ease access to the market). In some cases, micro-credit neither increased nor decreased the level of technology use (fertilizer application, pesticides use and extension services) among asset-poor clients, but there was an increase for the never asset-poor clients. In some communities, it distorted labor allocation and wage rates. As more people used micro-credit to invest in their agricultural activities, the supply of additional hands on farms decreases consequently pushing the cost of labour up (distortion). In addition, micro-fund transfer was observed to increase the use of input and enhanced the commercialization of farm produce in some studies reviewed.

When comparing one type of microfinance services used to the others, the review found micro-credit to be more effective in increasing new crop technology adoption than micro-insurance. Compared with micro-savings however, micro-insurance despite its lack of popularity in increasing technology adoption is associated with increases in fertilizer purchases, and is also more effective in increasing input spending and use among farmers than micro-savings.

4.3.3 Microfinance services, agricultural livelihood sustainability and poverty reduction

The review considered income, asset accumulation, human development and women empowerment as key components for enhancing livelihood sustainability and poverty reduction

among farmers in Sub-Saharan Africa. Evidences were gathered from all the microfinance services, except micro-leasing (see fig 4.2) and the direction of impact were found to be mixed and inconsistent across the cases reviewed (see the right column of fig 4.2).

The cases reporting micro-credit and micro-fund transfer services for instance, indicate positive impact on the income levels of farmers in Sub-Saharan Africa. Micro-fund transfers enable farmers to enjoy lower cost agricultural input-output related services and thus, reduce production cost, and increases profits and incomes. Micro-credit services also increase income from crops, but sometimes vary in most cases. It increases income levels of all clients, but higher for the financially literate client than illiterate clients. It also has potentials to increase income when combined with other agricultural-based market-oriented services.

In relation to asset accumulation for poverty reduction among farming households in Sub-Saharan Africa, the review found an inconsistent effect from microfinance services; a positive effect in some cases and no effect in others. Evidence from micro-credit services shows increases in the value of farm yield, improvement in housing conditions and an increased ownership of land and homes. There are also cases of increased accumulation of household durable assets for clients in urban centers than rural areas, and a no effect on livestock holdings. Direction of impact from micro-savings services was mainly positive; it increased the value of livestock holdings, the amount of savings stock, access to loans and farm yield for members of savings groups or farmers within savings communities. Yet micro-insurance was found to be more effective in increasing farm yield than micro-savings.

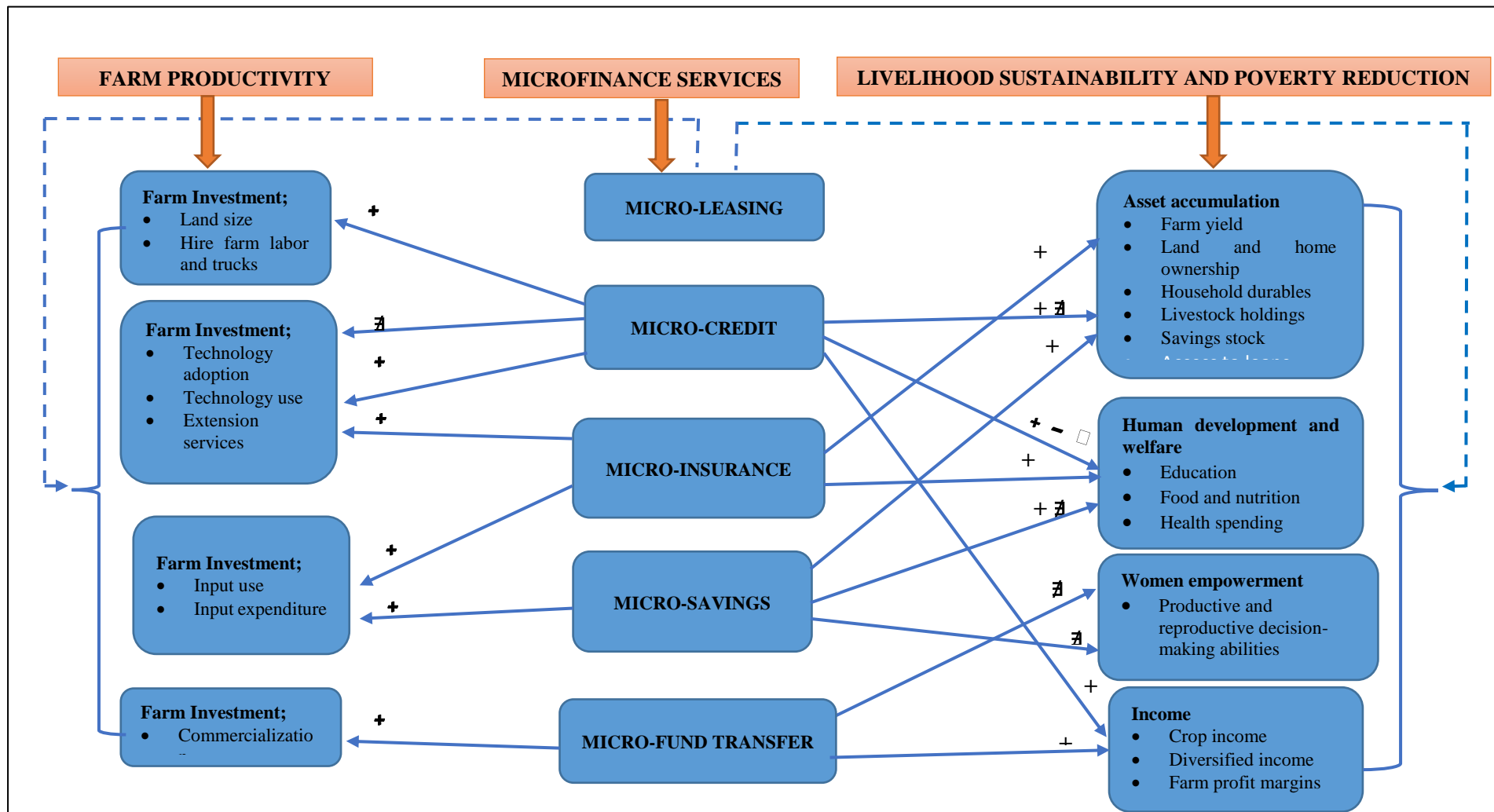
Microfinance services have a mixed effect on human development. Micro-credit was found to either have no effect or a negative effect on educational progress. The evidences suggest no effect on school attendance, but a delay in school enrollment and frequent grade repetition among the girl child, in some cases. It was found to have either a no effect or a positive effect on food security and nutrition. There were evidences of increases in the daily and annual per capita consumption, but a no effect on consumption growth and food security among poorest households. Micro-savings have a positive effect on food security, health and housing, but no effect on education and health. There are evidences of increases in the consumption of luxury food items, better consumption smoothing throughout the year, increased quality of housing, but no effect on either school enrollment or illness treatment expenses. Micro-insurance was also found to be effective in increasing food security, in some cases more than micro-savings.

There was not enough evidence to ascertain the impact of microfinance in empowering women farmers in Sub-Saharan Africa. Only two studies were found and the evidences suggest micro-credit and micro-savings do not have any effect on women empowerment. Both services did not either increase or decrease the involvement of women in decision-making concerning their reproductive and productive lives, such as contraceptive use, labor allocation and resources utilization, within the household and at the community level.

Figure 4.2 below is a graphical summary of findings on the direction of impact of microfinance services, farm productivity and poverty reduction as reported above. The central column of the diagram identifies the specific types of microfinance services and product, the right column indicates the poverty reduction and livelihood sustainability outcomes whereas the left column shows farm productivity measures.

Figure 4.2: Graphical summary of findings on the direction of impact of microfinance services, farm productivity and poverty reduction

Lacking Evidence (-----), Available Evidence (___), Positive Relationship (+), Negative Relationship (-) and No significant Relationship (#)



Source: Author's Construct, May 2016

4.4 Conclusion

Overall, eighteen studies were identified for the review. The evidences show variations in the direction of impact of microfinance on poverty reduction and livelihoods. The variations were also evidenced within and between countries of the Sub-Saharan Africa region. Discussions on the specific findings are given in the next chapter.

CHAPTER FIVE

DISCUSSION OF FINDINGS AND CONCLUSION

5.0 Introduction

Having synthesized the results from the identified studies and summarized the findings for this review, this section provides a discussion of the findings by revisiting the sustainable livelihood framework and some relevant analysis from the literature reviewed in chapter two. It also summarizes the strength and weakness of the review, and presents a tool to guide analysis of microfinance for livelihood sustainability and poverty reduction. The discussion below has been presented in accordance with the research questions.

5.1 Discussions

5.1.1 Which microfinance services are used for Agricultural activities?

Poor households, including smallholder farmers in Sub-Saharan Africa pursue diverse livelihood strategies in order to meet livelihood needs and graduate out of poverty. In addition to the commonest portfolios such as crop production, animal rearing, fishing and others, farmers also secure different forms of microfinance services to support their livelihood investment decisions. Most of the identified studies reported on micro-credit, followed by micro-savings and micro-insurance. Micro-fund transfer was the least reported. Efforts were made to search and identify studies on micro-leasing for poor households such as smallholder farmers in Sub-Saharan Africa, but little was found. This is not quite surprising as White Clarke Group (2010) found the market for micro-leasing in Africa to be only 9 percent of the world. Potential reasons are that either micro-leasing services are not available for the poor to use or institutional procedures and cultural

preferences prevent poor farmers from using the service for their livelihood investments, where they are available. This confirms analysis from the SLF (section 2.4.3) that livelihood activities may be influenced by specific structures, processes or institutions within which livelihoods are pursued.

5.1.2 Do microfinance services enhance farm productivity?

Assets are critical for all livelihoods, and in the case of poor farmers in Africa, various forms of assets were observed to be necessarily importance when using microfinance for enhance farm productivity. Particularly, micro-credit clients who were never-asset poor farmers increased their level of technology use for farming investment and productivity but the asset-poor farmers were not. Besides, micro-fund transfers increase input use and enhance commercialization for farm productivity. But the service is a mobile-phone based activity and can only be used by poor farming households who have money to buy mobile-phones and pay for telecommunication charges. This means that even where microfinance services are widely available, asset limitations may hinder the ability of the poorest of the poor to take advantage of the services or products for livelihood investment and productivity outcomes.

The above inference supports SLF analysis (section 2.4.3) concerning the influences of asset capabilities of the poor on livelihood strategies, such as microfinance services acquisition. It also confirms conclusions that the poorest of the poor might be restrained or excluded from access to small-scale finance services purposely designed to suit their livelihoods, as expressed by Mar (2004). This is because they lack the assets needed to be used as collateral or to be accumulated into lump sum. However, it refutes the underlying proposition of BoP that there is untapped market potential from the poor (Prahalad, 2004), and corroborates the counter argument that BoP service

providers cannot make any fortunate benefit/profit from the BoP market (Karnani, 2007) as the poor do not have much to spend.

5.1.3 Do microfinance services enhance livelihood sustainability and poverty reduction?

Interesting explanations were gathered from the findings on microfinance services and poverty reduction. Income levels were found to increase when the length of participation in microfinance schemes, education and financial literacy levels of clients are higher. These factors seem worrying in the case of developing regions like Sub-Saharan Africa where a greater percentage of the poor households are mostly illiterate and lack financial knowledge. While no case of decreased income was found, it is assumed that microfinance institutions, government and donors are delivering financial literacy programmes for the poor to advance their knowledge in using microfinance services.

In addition, the finding that microfinance enhances asset accumulation for the poor is very relevant for poverty reduction. However, in some cases of durable assets, the direction of impact seems more significant for farmers residing in urban areas than those in rural areas. This rural-urban trend common in some African countries represents a vulnerability context, which affects farmers' potential to benefits from microfinance services. While the finding offers an opportunity to the urban farmer, it may act as a potential threat/cost to the rural farmers. One possible explanation is that most financial institutions do not operate in rural areas due to high cost and low profit in serving the people in dispersed and remote settlements, as earlier examined by Cull et al. (2007). The effect falls on the rural poor who decide to travel to access and use microfinance services available in urban areas. Alternatively, they might rely on informal group-based microfinance activities, some of which may be unsecure, thus reducing the benefit gains compared to their

counterparts in the urban areas. This exposition attests to the sustainable livelihood analysis that, sources of vulnerability may threaten or provide opportunities in the livelihoods of the poor. It also confirms claims of Twigg (2001) and Ghimire et al. (2010) about the SLF analysis that vulnerability context may redirect the livelihood strategies of the poor in different ways.

Ultimately, microfinance aims at improving the lives of poor people, including women and girls. The review noted a deviated outcome of microfinance on girl-child's education and an insufficient impact on women empowerment. It might not seem surprising to researchers like Ngo et al. (2012), Johnson (2004) and Kabeer (2005) who are of the view that microfinance is not really a panacea for women empowerment because men may take over decisions concerning the use of the funds. This suggests that the institution of male dominance and female subordination, as well as cultural stereotype of limiting the role of a girl-child to household chores common in many developing regions including Sub-Saharan Africa are key obstacles in realizing the full potential of microfinance services for poor farming households. There is the need for both the government and microfinance institutions to undertake more gender awareness and women-in-development campaigns.

In cases of compared microfinance services, the evidences revealed that micro-insurance is more effective in increasing some forms of assets and enhancing human development than micro-savings. This could be explained by the limited farm incomes and the lack of a commitment to save in the midst of meeting immediate welfare needs. While the farming environment in Sub-Saharan Africa is more vulnerable to climatic threats, the importance of micro-insurance cannot be overemphasized. It is clearly a good form of microfinance services that provides security for the poor farmers.

5.2 Strengths and Limitations

Microfinance as a development tool has been a contested issue for quite some time now. Many research outcomes on its impacts on diverse aspect of poor people's lives have been inconclusive. This review synthesized findings of 18 identified studies into a comprehensive research report. The review acknowledges that three of the identified studies did not solely represent rural farmers who are the main target for the review question. Rather, they focused on rural households in general. For this reason, the review considered farming to mean the occupation of all rural households in Sub-Saharan Africa but this might not be the real case.

Similarly, some of the identified studies were not really microfinance intervention evaluations but rather, experimentations undertaken by researchers to test the outcome of microfinance or to provide evidence for conceptual and policy supports. Experimentations are usually short-lived studies, and this raises some concerns on the reality of the conclusions deduced.

Besides, the review aimed at focusing on studies undertaken within the African sub region but due to limited number of robust researches, there were no data from some of the countries. Findings from the review were deduced with references to countries where data was found but not the whole of Africa. They include Uganda, Kenya, Ethiopia, Malawi, Zambia, Ghana, Senegal, Burkina Faso and Mali. The direction of impact of microfinance services on agricultural livelihoods were found to be similar in some countries but not all, depending on the situations.

It is worth noting that the review relied on a thorough study identification technique, searching through many relevant databases and websites as well as bibliography snow balling to identify all potential studies pertaining to the research questions. This illustrates the up-to-date nature of the

evidences underlying the review. In spite of the search efforts, no study was found regarding the impact of micro-leasing on agricultural livelihoods in Africa. It is expected that the micro-leasing is probably a very costly microfinance service which is feasibly not effective for both the institutions responsible for providing the services or the poor targeted to use the service.

Equally important, the review adopted a series of quality assessment checks, including topic relevance, methodological relevance and methodological application quality. This represents an important robust check for the review findings and the review report in general. In addition, the review followed a lot of systematic analysis of various dimensions of poverty and livelihood sustainability, including income, asset, human development, women empowerment, and investment and productivity. This provided a sound series of assessments to answer the review question.

5.3 Conclusion

This research set out to systematically review how the various micro-finance services including micro-credit, micro-savings, micro-insurance, micro-fund transfer and micro-leasing impacts agricultural livelihoods in Africa. While the services are accessed either through formal banks, informal activities and mobile phone-based platforms, the use of the services varies widely across cases. For instance, micro-credit is popularly used by the farming households in Sub-Saharan Africa than the other services. On whether micro-finance services enhance agricultural productivity, the review found mixed impacts from the different cases examined. The impacts of the services on poverty reduction and agricultural livelihood sustainability were mixed and ranged from positive to negative and no-effect in some cases. It is important to acknowledge that the productive use of microfinance is key in realizing the positive outcomes on livelihoods. Similarly,

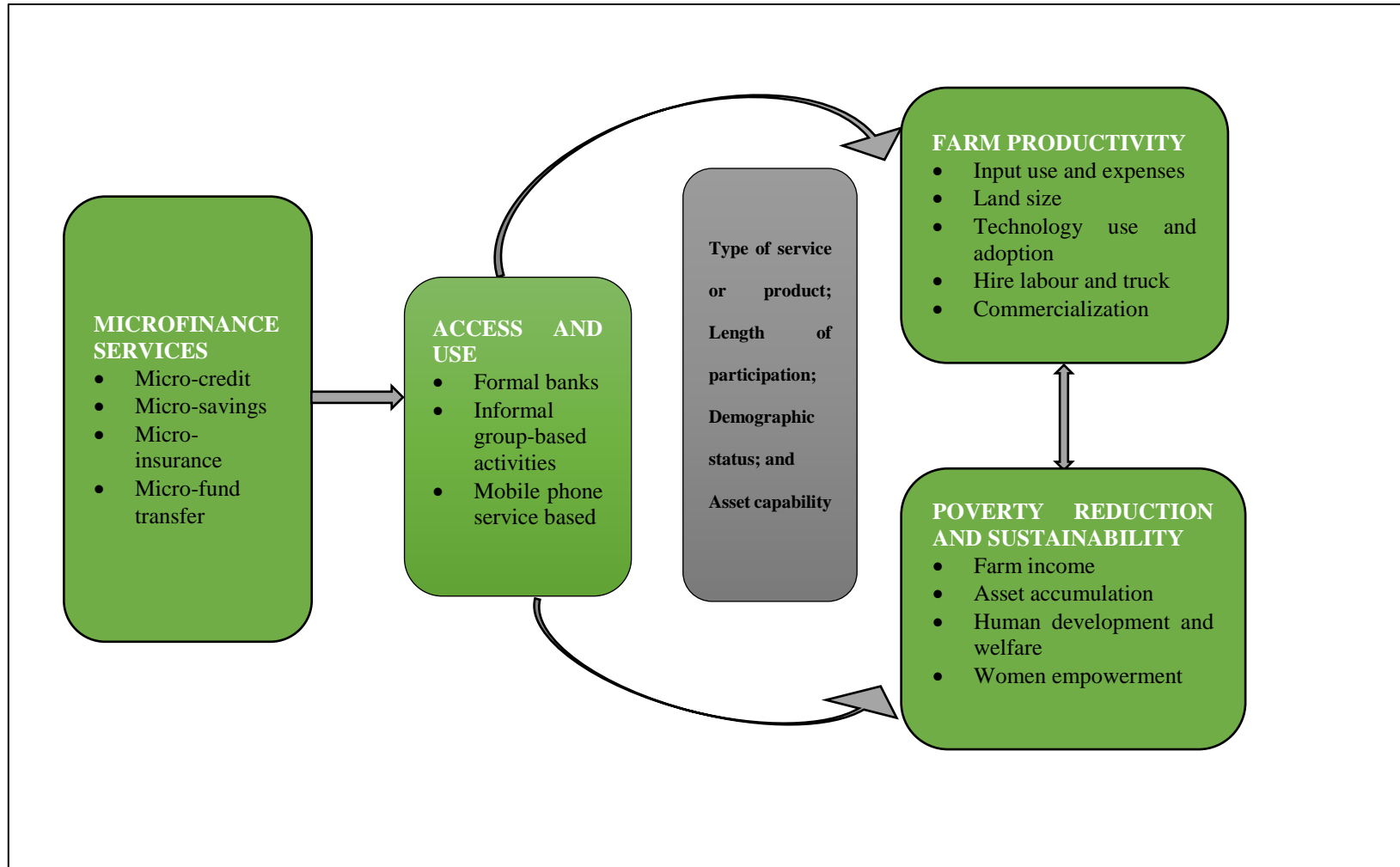
the direction of impact on various outcomes such as increased income, asset accumulation, farm investment, human development and women empowerment is largely dependent on the type of service, demographics of the client group, the length of participation, literacy level and asset capabilities of the poor.

5.4 Implications

Figure 5.1 presents a framework for the analysis of microfinance services based on the findings of this study. It represents important analytical implications from the systematic review for development practitioners, policy makers and researchers. Specifically, it portrays that when designing microfinance services or interventions for poverty reduction and livelihood sustainability;

Practitioners could critically assess the ease of access and feasibility of use by the poor, whether formal, informal or mobile phone-based. Ease of access would enhance the poor to frequently use the services, while feasibility may keep the service or the intervention operating. Productive use of the services and products of microfinance is critically important. For this reason, the poor beneficiaries need to have certain opportunities that enable them to take advantage of microfinance services. In cases where the poor are asset-deprived (that is a lack of financial knowledge), effective monitoring and pre-client services would be beneficial. Such a service may take the form of investment counseling and business savings commitment to enhance their potential for productive uses and better repayment of microfinance services.

Figure 5. 1: A Framework for Analysis on Microfinance, Poverty Reduction and Agricultural Livelihoods



Source: Author's Construct, May 2016

Further, the institutional environment within which poor people live their lives ought to be given equal importance as the microfinance services provision. Rural areas might be disadvantaged to have microfinance services compared to the urban centers because of limited infrastructure and social services to keep providers in operation. In the same way, women may be marginalized to put microfinance into economically productive investments due to a lack of control over decision making. In such cases, more campaigns and policies are needed to ameliorate unfavorable social service policies and cultural norms that disadvantage rural people and women from accruing the potential benefit of microfinance services.

Asset constraints are among the greatest challenges to realizing the impacts of microfinance and poverty reduction. This means that micro-leasing of assets represents a potential opportunity for the poor to not only build assets, but also to be in a better position to achieve the benefits associated with all the other microfinance services. Yet, the review did not find any study on micro-leasing, suggesting perhaps that the service may not be feasible for poor farmers who are the clients or microfinance institutions who are the service providers. Future researchers could look into the feasibility of micro-leasing, and how the service could be made accessible for the poor to use. Findings from the research could be shared with asset market officials and concerned stakeholders so that the potential associated challenges and opportunities could be addressed for poverty reduction and livelihood sustainability.

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APPENDIX 1

Table 1: Details of the search results from each database

Search Source	Initial search results	Final text considered
3ie Impact Evaluation http://www.3ieimpact.org/en/evidence/impact-evaluations/?q=Microfinance+and+agriculture+in+Africa&title=&author=&published_from=&published_to=&publication_status	10	4
Consultative group to assist the poor (CGAP) Publications and website search Round 1: http://www.cgap.org/publications/all?topic%5B%5D=1276&topic%5B%5D=31&topic%5B%5D=33&topic%5B%5D=26&topic%5B%5D=34&topic%5B%5D=38&topic%5B%5D=35&topic%5B%5D=36&topic%5B%5D=37&topic%5B%5D=1606&topic%5B%5D=53&topic%5B%5D=40&topic%5B%5D=52&country%5B%5D=196&country%5B%5D=197&country%5B%5D=200&country%5B%5D=202&country%5B%5D=65&year%5B%5D=value%5D%5Byear%5D= Round 2: http://www.cgap.org/site-search/microfinance%20and%20agriculture%20in%20africa?f[0]=search_api_combined_1%3A52&f[1]=search_api_combined_1%3A1276&f[2]=search_api_combined_1%3A31&f[3]=search_api_combined_1%3A53&f[4]=type%3Apublication	14	0
Eldis http://www.eldis.org/go.cfm?path=/go/topics/resource-guides/agriculture-and-food/agricultural-markets-and-food-prices&&search_type=0&Search_string=microfinance+services%2C+poverty+and+agriculture+in+afri ca&go.x=16&go.v=9&search_topic_id=0&pg=2#panel	13	0
EPPI-Center Publications/Evidence Library http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=3207	4	0

<p>Google scholar https://scholar.google.ca/scholar?start=10&q=+impact+of+microfinance+services+on+agriculture++in+africa&hl=en&as_sdt=0,5</p>	24800	
<p>Innovations for Poverty Action (IPA) Round 1 http://www.poverty-action.org/publications Round 2 http://www.poverty-action.org/search-studies?tid%5B%5D=156&tid%5B%5D=166&tid%5B%5D=5461&field_status_value=Results&title=</p>	162	3
<p>J-Pal Poverty Lab https://www.povertyactionlab.org/evaluations?f[0]=field_themes%3A55&f[1]=field_region%3AAfrica https://www.povertyactionlab.org/evaluations?f[0]=field_research_initiative%3Aagricultural%20technology%20adoption%20initiative&f[1]=field_region%3AAfrica&f[2]=field_themes%3A3</p>	95	3
<p>Journal of Microfinance http://scholarsarchive.byu.edu/do/search/?q=microfinance%20and%20agriculture%20in%20Africa&start=25&context=6586397#query-results</p>	31	2
<p>Jstor http://www.jstor.org.proxy.lib.uwaterloo.ca/action/doAdvancedResults?f1=all&Search=&q5=&q1=agriculture+in+Africa&f0=all&acc=on&sd=&f4=all&dc.developmentstudies-discipline=on&ed=&q2=&c2=AND&dc.finance-discipline=on&dc.economics-discipline=on&pt=&q0=microfinance+&q6=&c3=AND&la=&f3=all&c4=AND&dc.africanstudies-discipline=on&dc.africanamericanstudies-discipline=on&f6=all&q4=&isbn=&q3=&f2=all&c6=AND&c5=AND&group=none&f5=all&c1=AND&si=26</p>	32	0
<p>Practical Action Publishing database http://www.developmentbookshelf.com/action/doSearch?AllField=microfinance+services+and+agriculture+in+africa</p>	259	0

References of systematic review papers	42	3
Scopus http://www-scopus-com.proxy.lib.uwaterloo.ca/results/results.uri?numberOfFields=0&src=s&clickedLink=&edit=t&editSaveSearch=&origin=searchbasic&authorTab=&affiliationTab=&advancedTab=&scint=1&menu=search&tablin=&searchterm1=microfinance+and+agriculture+in+africa&field1=TITLE_ABS_KEY&dateType=Publication Date Type&yearFrom=Before+1960&yearTo=Present&loadDate=7&documenttype=All&subjects=LFSC& subjects=on&subjects=HLSC& subjects=on&subjects=PHSC& subjects=on&subjects=SOSC& subjects=on&st1=microfinance+and+agriculture+in+africa&st2=&sot=b&sdt=b&sl=53&s=TITLE-ABS-KEY%28microfinance+and+agriculture+in+africa%29&sid=5F89D218FDBF9B6CB022A5C7395D46F9.ZmAySxCHIBxxTXbnsoe5w%3A360&searchId=5F89D218FDBF9B6CB022A5C7395D46F9.ZmAySxCHIBxxTXbnsoe5w%3A360&txGid=5F89D218FDBF9B6CB022A5C7395D46F9.ZmAySxCHIBxxTXbnsoe5w%3A360&sort=plf-f&originationType=b&rr=	9	0
AgEcon search Round 1 http://ageconsearch.umn.edu/simple-search?sort=date&SortDirection=descending&query=%28%28keyword%3Afinancial+keyword%3Aservices%29+AND+%28keyword%3AAgriculture%29%29&start=60 Round 2 http://ageconsearch.umn.edu/simple-search?sort=date&query=%28%28microfinance%29+AND+%28keyword%3AAgriculture%29%29&from_advanced=true&conjunction2=AND&field3=ANY&field2=keyword&conjunction1=AND&field1=ANY&query1=microfinance&query2=agriculture&query3=&SortDirection=descending	458	3
Total	25347	18