

# Building inclusive smallholder agricultural finance

With evidence from coffee producers and  
financial institutions in Tanzania



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## **Abstract**

Despite the increasing liberalization and penetration of rural financial markets in the global South, small-scale agricultural producers' scarce access to formal financial services still constitutes a fundamental roadblock to improving financial inclusion and, thus, rural livelihoods. High transaction costs combined with covariant risks, a lack of financial literacy and the prevalence of moral hazard in agricultural lending impair the profitability and, hence, the availability of smallholder agricultural finance. Based on the theoretical concept of New Institutional Economics and underpinned by empirical evidence from small-scale coffee producers and financial institutions in Tanzania, this paper identifies major challenges of smallholder finance in the country and possible pathways through which financial inclusion can be elevated. The assessment of Tanzania's smallholder-based coffee sector and financial system reveals that while organizational development among small-scale producers is clearly insufficient, inclusive rural financial systems, above all, depend on cohesive, well-governed and -managed producer organizations which qualify and act as intermediation points between small-scale producers and financial institutions.

Keywords: agricultural finance, coffee, financial inclusion, microfinance, New Institutional Economics, rural development, smallholder, Tanzania

## **Zusammenfassung**

Trotz einer zunehmenden Privatisierung und Durchdringung ländlicher Finanzmärkte im globalen Süden bleibt der mangelnde Zugang zu kleinbäuerlicher Mikrofinanzierung ein wesentliches Hindernis für die Verbesserung finanzieller Inklusion und der Lebensbedingungen im ländlichen Raum. Hohe Transaktionskosten in Kombination mit kovarianten Risiken, mangelnde finanzielle Grundbildung sowie die Verbreitung von Opportunitätsrisiken mindern die Profitabilität und somit das Angebot kleinbäuerlicher Finanzdienstleistungen. Basierend auf dem theoretischen Konzept der Neuen Institutionenökonomie und unterstützt durch aus Interviews mit KaffeekleinproduzentInnen und Finanzinstitutionen gewonnener empirischer Evidenz identifiziert diese Arbeit grundsätzliche Herausforderungen kleinbäuerlicher Finanzierung sowie mögliche Handlungspfade, über die finanzielle Inklusion verbessert werden kann. Im Lichte mangelnder organisatorischer Entwicklung offenbart die Analyse des kleinbäuerlich geprägten tansanischen Kaffeesektors und des Finanzsystems, dass inklusive ländliche Finanzsysteme vor allem von bindungsstarken, gut regierten und erfolgreich gemanageten Produzentenorganisationen, die als Intermediationspunkte zwischen KleinproduzentInnen und Finanzinstitutionen agieren, abhängen.

Schlüsselwörter: finanzielle Inklusion, Kaffee, Kleinbauern, landwirtschaftliche Finanzierung, ländliche Entwicklung, Mikrofinanzierung, Neue Institutionenökonomie, Tansania



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# Abbreviations

ACU	Arusha Cooperative Union (1984) Ltd.
AKSCG	Association of Kilimanjaro Specialty Coffee Growers
AMCOS	Agricultural Marketing Cooperative Society
AGITF	Agricultural Inputs Trust Fund
CBA	Commercial Bank of Africa Ltd.
CPT	Coffee Partnership for Tanzania
CPU	Central (Coffee) Processing Unit
CRDB	CRDB Bank Ltd.
CSAF	Council on Smallholder Agricultural Finance
DEG	Deutsche Investitions- und Entwicklungsgesellschaft mbH
DTB	Diamond Trust Bank Ltd.
EXIM	EXIM Bank Ltd.
EFTA	Equity for Tanzania Ltd.
ICO	International Coffee Organization
ICT	Information and communication technology
ISF	Initiative for Smallholder Finance
FAST	Finance Alliance for Sustainable Trade
HRNS	Hanns R. Neumann Stiftung
KCBL	Kilimanjaro Cooperative Bank Ltd.
KNCU	Kilimanjaro Native Cooperative Union (1984) Ltd.
MECOB	Meru Community Bank
MFI	Microfinance Institution
NBC	National Bank of Commerce Ltd.
NFAD	National Microfinance Bank (NMB) Foundation for Agricultural Development
NGO	Non-Governmental Organization
NIE	New Institutional Economics
NMB	National Microfinance Bank Ltd.
PASS	Private Agricultural Sector Support Trust
PCG	Partial Credit Guarantee
PO	Producer Organization
RPCS	Rural Primary Cooperative Society



SACCO	Savings and Credit Cooperative
SME	Small and medium enterprise
SSA	Sub-Saharan Africa
TCB	Tanzania Coffee Board
TIB	Tanzania Investment Bank Ltd.
VICOBA	Village Community Bank
UCB	Uchumi Commercial Bank Ltd.

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The views expressed in this thesis are solely those of the author and should not be credited to any other person or organization.

# 1. Introduction

Over the last years, the academic debate has rediscovered the crucial role of smallholder farming systems for the improvement of rural livelihoods, poverty reduction and food security in the developing world. In academia, among donors, think tanks as well as public and private sector organizations it is widely acknowledged that there is an enormous potential of fostering rural development and contributing to the achievement of the *United Nations Millennium Development Goals* by facilitating the provision of financial services to those citizens who for the most part still lack access to credit, savings, insurance and mobile payment products (Cervantes-Godoy and Dewbre 2010; IFAD 2013; Wolz 2005).

Despite the remarkable growth of financial services in many developing countries over the last decades, lending in rural areas, most of all to those who engage in agriculture, remains a challenge. The unique systemic risks associated with agricultural production (e.g. weather hazards and commodity price fluctuation), lacking infrastructure and particularly high transaction costs in rural areas as well as a sub-optimal regulatory environment have caused many financial institutions to shy away from agricultural lending, and small- and medium-scale agricultural producers in particular, leaving most of the world's 450 million smallholders with no access to formal financial services. This has resulted in a finance gap for agricultural producers in rural areas in developing countries (IFC 2011: 17-18; IFC 2012: 14ff; Temu 2009).

Against this background, a major strand within the current debate on micro- and smallholder agricultural finance focusses on improving financial inclusion, mainly by reducing transaction costs and introducing innovative models of risk mitigation (IFC 2011: 61-69). However, possible strategies to improve the availability and success of smallholder agricultural finance not only need to be explored in more detail for specific commodities and country cases, but proven models must also be further utilized and scaled up to improve access to finance.

Tanzania, which is among Africa's leading countries in coffee production, displays a suitable a case for the exploration of the underlying challenges, feasible models and prospects of smallholder agricultural finance. The country's coffee sector is largely made up of about 450,000 smallholder farming households of whom the vast majority lacks access to formal financial services such as credit, saving and insurance facilities. Recent surveys show that the usage of financial services among small-scale farmers is not more than fractional (see AgFIMS 2011: 91-93; CPT 2012; Dalberg 2013). A preliminary report of a recent survey conducted by *FinScope* (2013: 13) measuring the demand for and access to financial services in Tanzania found that the coverage of formal financial services is still marginal with only 14 per cent of the population using formal bank products and that many, especially those living in rural areas, remain excluded.

On the background of the limited provision of financial services to Tanzanian small-scale coffee producers by the formal financial sector, this thesis further explores scalable models of smallholder agricultural credit using empirical evidence from Tanzania's financial industry and the coffee sector. The analysis addresses the following research question:

*How can smallholder coffee farmers gain access to agricultural credit products from formal financial institutions in Tanzania and through which measures can financial inclusion in agriculture-based rural economies be enhanced?*

It thereby aims to contribute to the ongoing debate by identifying scalable pathways to smallholder agricultural finance in Tanzania. This paper will not only study in-depth the preconditions and prevalent models of linking smallholder coffee farmers to credit (and other financial) facilities in Tanzania, but it will also contribute to the discussion whether and under which circumstances selected credit products are in fact profitable and desirable from a borrower's perspective. While access to financial services can certainly be considered a key to unlocking the potentials of smallholder systems thereby improving rural livelihoods, the prospects and the profitability of credit facilities need to be thoroughly assessed on a case by case basis, since costs for financial services may be considerable. The average interest rate charged by microfinance institutions (hereinafter MFI) for loans was more than 26 per cent per annum in 2010 (Mader 2013b). These cost combined with exposure to investment risk may drive low-income borrowers into vicious circles of default and indebtedness (Rosenberg 2010).

To explore the above research question from a practical perspective and to gain firsthand empirical evidence, a field study was conducted in Tanzania's financial sector in 2013 with a special emphasis on financial institutions' lending to the coffee sector. To shed light on the topic of smallholder agricultural finance from different angles, the study comprised interviews with both smallholder coffee farmers (potential borrowers) and representatives of financial institutions (anticipated providers of financial services) in some of Tanzania's major coffee growing areas, notably in the regions of Mbeya, Kilimanjaro and Arusha, and in the country's financial center Dar es Salaam. The survey provides a snapshot of both the demand for and formal financial institutions' operated models of smallholder agricultural finance, perceived risks from a lender's perspective as well as adopted strategies to deal with the major challenges of the provision of credit to small-scale coffee producers in Tanzania. The information drawn from the case study allows deriving conclusions which apply to the topic of agricultural microfinance in more general terms, i.e. other country contexts and non-coffee smallholder based commodity sectors.

The remainder of this thesis is structured as follows: *Chapter 2* lays out the research methodology used for the analysis of the underlying research question. *Chapter 3* provides background information and definitions, mainly integrating the topic of smallholder agricultural finance into the broader context and explaining its relevance for rural development. *Chapter 4* will present the institutional dynamics of transactions in credit markets as well as the specific challenges of providing credit to smallholder farmers drawing from the theoretical framework of *New Institutional Economics*.

*Chapter 5* gives an overview of the state of the research on smallholder agricultural finance including current risk mitigation and sharing strategies which are targeted at improving the availability and outreach of smallholder finance. This chapter also explores the paradigmatic shift which shaped the discourse on and the implementation of rural-, micro- and agricultural finance throughout the last decades as well as the recent critical academic discussions about the impact of microfinance. *Chapter 6* presents the rationale and the research methodology of the case study as well as an overview of Tanzania's coffee sector. Based on primary data derived from a ten-week field study, *Chapters 7 and 8* will explore coffee smallholders' demand for credit, formal financial institutions lending and the benefits of loan schemes from a smallholder farmer perspective, thereby addressing this paper's research question based on empirical evidence of Tanzania's coffee sector. The case study will illustrate both the critical role of farmer aggregation and producer organizations as financial intermediaries in facilitating access to financial facilities for smallholder coffee farmers in Tanzania as well as approaches through which financial service providers assess the bankability of agricultural producer groups. Based on the case study and key findings, *Chapter 9* will illustrate and summarize measures through which scalable and inclusive models of smallholder agricultural finance can be built – in Tanzania and beyond. A conclusion (*Chapter 10*) will be drawn thereupon indicating the main findings and further research areas.

## 2. Overall research methodology

To explore the research question guiding this thesis, the overall research approach is empirical-analytical mainly using qualitative instruments which help thoroughly understand the topic at hand. The analysis will be based on the theoretical framework of *New Institutional Economics* (hereinafter NIE), herein mainly referring to the transaction cost approach and the analysis of principal-agent relationships which both can be applied to the institutional dynamics of credit markets.

The terminology and definitions used in this analysis (*Chapter 3*), the introduction into the theoretical framework of NIE (*Chapter 4*), the presentation of the state of research on smallholder agricultural finance (*Chapter 5*) and the background information on Tanzania's coffee sector (*Chapter 6*) are all based on a review of secondary literature. Based on a primary document analysis and qualitative empirical data derived from face-to-face questionnaire-based interviews with smallholder coffee farmers and representatives of financial institutions, *Chapters 7 and 8* will present the findings of a field study of Tanzania's coffee sector and financial industry. The interviews with coffee small-scale producers and financial service providers were chosen as an instrument to reconstruct, understand and explain the full complexity of the topic of smallholder agricultural finance through qualitative primary data and anecdotal evidence from key Tanzanian stakeholders. The field study provides insights from a borrower's and lender's perspective on the topic of smallholder agricultural finance which allows exploring the underlying research question of this analysis based on first-hand information. Representatives of financial institutions have been interviewed

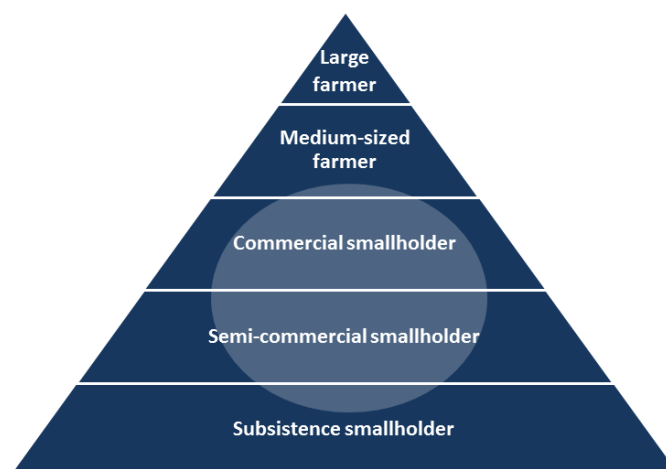
in their role as practitioners in smallholder agricultural finance providing information through their expertise and their personal perspectives on that topic. *Section 6.3.* presents the research methodology used for the conduct of the field study in more detail.

## 3. Definitions and terminology

### 3.1. Defining smallholder farmers

There is no clear definition of what constitutes a smallholder farmer. Rather than that, agricultural primary producer can be classified along a fluent spectrum from subsistence farming to the execution of farming as a purely commercial business whereas the income realized through farming activities and the size of land used for the cultivation of commodities both increase with the level of commercialization (see IFC 2011: 16). This thesis focusses on *commercial* smallholder farmers who shall be defined as small-scale producers cultivating at least one commercial cash-crop on a plot of one to ten hectares and consider this their (main) business activity while the cash-crop may be intercropped with other crops for purposes of income diversification, and subsistence farming.<sup>1</sup> There is a clear agreement that the vast majority of agricultural producers fall under the categories of semi-commercial or commercial smallholder farmers and that the gap in rural and agricultural finance (illustrated by the light blue ellipse in *Figure 3-1*) particularly applies and affects this group of small-scale producers (Doran et al. 2009; IFC 2011: 17). However, it is important to note that smallholder farmers who focus on subsistence farming may also require financial services while this group usually does not have any access to *formal* financial services.

*Figure 3-1 – Segmentation of smallholder farmers* (Own illustration based on IFC 2011)



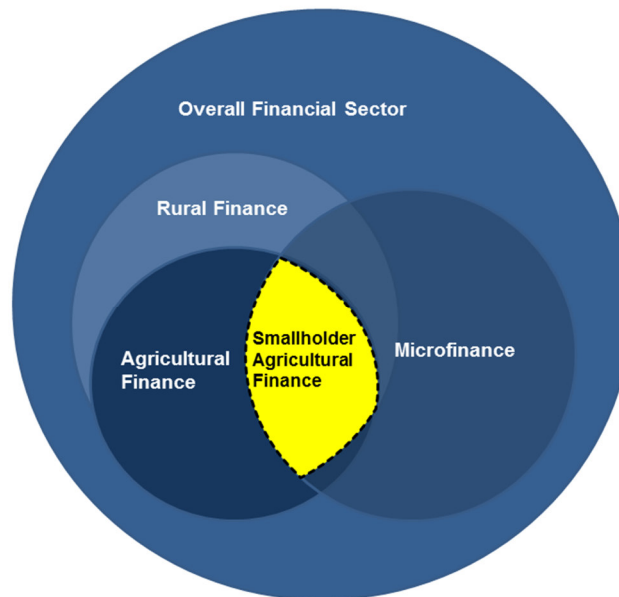
<sup>1</sup> See IFC (2011: 15-18) for a detailed segmentation of farmers. Categorizing smallholders by their income is another option but may be somewhat problematic, since revenues are often subject to fluctuating prices for commodities and may differ significantly from year to year and depending on the commodity at hand.

### 3.2. Contextualizing smallholder agricultural finance

*Schmidt and Tyrell (2003: 3)* define the *financial sector* as “that part – or sector – of an economy which offers and provides financial services to the other sectors of the economy.” It consists of the central bank, other banks, non-bank financial institutions, organised financial markets and the regulatory and supervisory institutions (*ibid.*). Within the overall financial sector, financial intermediation services, or the provision of financial products and services, to the rural population and low income households in developing countries can be subdivided into the following categories: *microfinance*, *rural finance* and *agricultural finance* (*Pearce 2003; see Figure 3-2*).

The term *microfinance* refers to the provision of financial services such as loans, savings, insurance and payment services to the specific target group of low-income individuals or groups who would have no other means of gaining access to these services. *Rural finance*, on the contrary, is not defined by the characteristics of its target audience but by the geographical location, in fact rural areas, where financial services are provided to the population at *all* income levels (*ibid.*).

*Figure 3-2 – Contextualizing smallholder agricultural finance* (Own illustration based on *Pearce 2003*)



*Agricultural finance*, on the other hand, is a sectoral concept and refers to financial services which are demanded to support the agricultural value addition from production to marketing. Agricultural finance can be primarily considered a subset of rural finance, since the vast majority of agricultural activities are carried out in rural areas. But agricultural finance is not necessarily limited to rural areas, e.g. in the case of urban farming or agricultural activities in the downstream value chain such as commodity processing and marketing which are sometimes located in urban areas. The major pillar of agricultural finance is made up by the provision of different credit facilities, ranging from short-term to long-term arrangements, along the entire

agricultural value chain to support agricultural input supply, production, harvesting, distribution, processing and marketing. However, by definition, the term also involves financial services other than credit, such as savings, insurance, payment services and other financial facilities that support agricultural activities (IFC 2011; MFW4A 2014). One of the key attributes of agricultural finance is its proneness to a set of unique risks such as weather hazards, pest and diseases as well as considerable price fluctuations which are frequently observed in agricultural commodity sectors. This paper will specifically address the provision of agriculture-related credit to the target group of smallholder coffee farmers (as defined in *Section 3.1.*), hereinafter referred to as *smallholder agricultural finance* which is the subset of agricultural microfinance rolled out to small-scale, low-income producers (see highlighted yellow intersection in *Figure 3-2*).

### 3.3. Smallholder agricultural finance and rural development

The large majority – an estimated two billion – of the global poor live in rural areas and depend on agriculture for their livelihood (Carroll et. al 2012). The world’s estimated 450 million smallholder farmers represent a large population that continues to struggle from underdevelopment and poverty (Farms to Firms 2014). This is one of the reasons why the academic discussion rediscovered the importance of smallholder farming systems over the last decade. The improvement of smallholder livelihoods is a key to achieving food security and poverty reduction in the developing world, most of all in Sub-Saharan Africa’s (SSA) rural areas where agricultural production is largely dominated by small-scale producers.<sup>2</sup>

Agriculture in SSA countries generates about 30 per cent of the GDP on average and employs roughly 60 per cent of the population (IAASTD 2009: 2). Thus, in the largely agriculture-based countries of SSA, agriculture is central to development and rural poverty alleviation as “farming has high potential to create jobs [and] to increase returns to the assets that the poor possess” (Hazell et al. 2007: vii). Agricultural development – promoted by improvements in crop productivity and quality, access to markets and food security – “is a vital development tool for achieving the Millennium Development Goal that calls for halving by 2015 the share of people suffering from extreme poverty and hunger” and will continue to be so (World Bank 2008: v).

However, while other developing regions have successfully transformed their agricultural sectors in the 1960s and 1970s, most prominently represented by Asia’s green revolution, agricultural productivity and development in many SSA countries largely stagnated over the same period and only gained momentum over the last decade. At the same time, productivity performance has varied widely within the SSA region and some counties continue to experience little or no productivity improvement (Fuglie and Rada 2013; Hazell et al. 2007: 2). As a result, accomplishments in transforming the agricultural sectors and lifting rural households out of poverty in the region have mostly been limited to date. While the share of the population classified as undernourished has decreased in SSA from 32.7 per cent between 1990 and 1992

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<sup>2</sup> There are varying reports of the share of agricultural production which derives from smallholder farming systems. Various studies suggest rates of up to 90 percent in some SSA countries (see Wiggins 2009).



to 24.8 per cent in the period 2011-2013, the absolute figure of people affected by hunger in the region (more than 220 million) has even increased and progress made has been considerably slower than in other regions such as South and South-East Asia (FAO 2013: 8-11). In addition, climate change has started to affect local production systems – e.g. through soil degradation as well as adverse weather patterns – and will continue to pose a challenge to the sustainability of agricultural production, also in the coffee sector (Baker 2010; Baker and Hagggar 2007; Hagggar and Schepp 2012). While much of SSA's production gains over the last years have resulted from land expansion, the intensification of agriculture represents a future challenge which can only be addressed through substantial capital and technology investments (Livingston et al. 2011: 12).

While the comparative prospects of smallholder production systems – the by far most prevalent model in Africa's agricultural sector – and larger farm estates continue to be highly controversial, smallholder production systems have proven to be competitive in theory and practice.<sup>3</sup> Yet, tens of millions of small-scale producers in rural Africa – most of them with less than two hectares of arable land and prone to poverty – heavily depend on comprehensive support to overcome low productivity, lack of access to markets, food insecurity as well as first effects of climate change (see Hazell et al. 2007; Wiggins 2009).

Since smallholders generally lack productive assets, adequate access to savings and credit, it is difficult for them to expand their already poor resource base. Thus, to improve livelihoods and rural development as well as the overall sustainability of production systems, "small farms [...] need access to improved technologies and knowledge to remain competitive, raise productivity and improve environmental stewardship" (Hazell 2011: 10). Without any doubt, providing access to capital and other financial products is a crucial factor of the overall strategy to enhance the productivity of smallholders, improve their livelihoods and build resilience against fluctuating input and commodity prices as well as natural hazards. Credit facilities and capital generated through savings can support farmers to gain access to much needed farm inputs (such as seeds, fertilizers or other agrochemicals) and new farming technologies (e.g. supporting the mechanization of production and processing). *Hazell et al.* (2007: 32) depict that "the case for smallholder development as one of the main ways to reduce poverty remains compelling [...]. The challenge is to improve the workings of markets for outputs, inputs, and financial services to overcome market failures".

### 3.4. Primary uses of smallholder finance

While the demand for different financial services certainly varies with the level of commercialization and the size of small-scale farming systems, smallholders usually require a set of different financial services to support agricultural activities, thereby contributing to income security and enhanced quality of life. First of all, small-scale producers may need various short- and mid-term pre-harvest loan facilities, e.g. to

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<sup>3</sup> For a detailed analysis of the comparative advantage of small and large farms see *Hazell et al.* (2007) and *Wiggins* (2009).

pre-finance the supply of agricultural inputs<sup>4</sup> or to hire labor to work on the farm (especially during planting and harvesting periods of labor-intensive crops). Small-scale producers often also need larger amounts of capital to make investments into production systems and agricultural equipment (such as tractors, irrigation schemes, planting material for farm renovation, land purchases, processing facilities, animal traction etc). Finally, smallholder farmers often require post-harvest credit to facilitate the marketing of their produce. These loans are typically granted to crop collectors (such as producer groups, cooperatives, traders or other aggregators) who purchase the crops from small-scale producers. Smallholder farmers benefit inasmuch as they receive payment (either the full amount or a certain share of the expected proceeds as a first payment) right after harvest before the actual payment by the ultimate buyers is received. The different credit products can be distinguished by the length of the loan arrangement (short-, mid- to long-term) and the point in time during the crop cycle at which the funds are disbursed (pre-harvest or post-harvest). The following three main financing uses can be distinguished (Dalberg 2013; FAST 2014b):

- *Pre-harvest input finance* comprises loans (typically up to twelve months) used to generate pre-harvest capital which allows farmers to invest in their crop production, especially into agricultural inputs and (in the case of work-intensive crops) labor during production and harvest.
- *Pre-harvest equipment finance* comprises long-term credit facilities (usually up to 60 months) which are granted to finance larger investments into production systems and farm equipment.
- *Post-harvest marketing finance* refers to short-term loans (typically up to twelve months) which are usually demanded by producer groups and other aggregators to pre-finance the purchase and collection of the crop from small-scale farmers.

However, smallholders have financial needs which go beyond these pre- and post-harvest credit facilities. Additional requirements may involve savings schemes, insurance products, payment services but also loans for non-agricultural related purposes to meet costs such as school fees or emergency loans to cover expenditures for health services or other (social) occasions (e.g. funerals). In general, the abundance of the different loan schemes laid out above is subject to the perceived risks and expected profitability of the offered products by financial service providers. *Figure 3-3* lays out general risk patterns of different credit arrangements along the agricultural value chain.

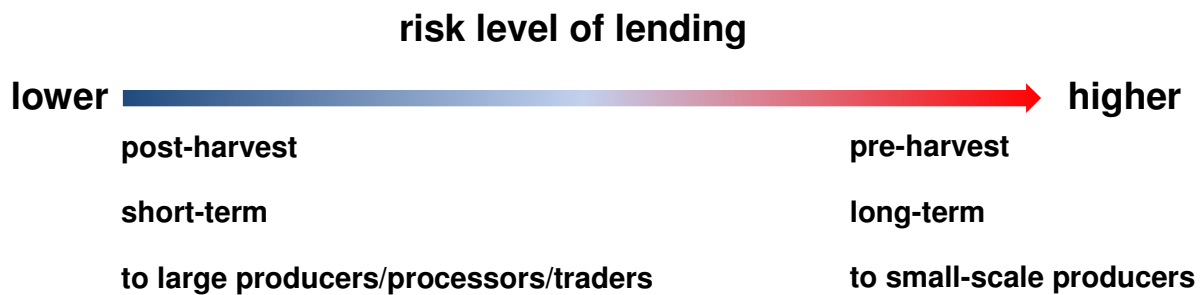
The supply of credit facilities for small-scale agricultural activities differs depending on the country and commodity at hand, e.g. based on the risk profile of agricultural production, prior experience with and track records of borrowers or different levels of commitment of financial and non-financial institutions to engage in smallholder agricultural finance as well as the specifics of the crop and its production cycle. Yet, there is a clear tendency in the coffee sector (and other agricultural commodity sectors) for financial service providers to associate higher risk with pre-harvest credit, which is exposed to a number of unique production risks, compared to post-harvest

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<sup>4</sup> Agricultural inputs – as defined here – comprise chemical inputs such as mineral fertilizer and herbicides, planting material such as seedlings or tree crops as well as working tools.

finance which is required for activities such as processing, exporting and marketing (ICO 2013: 8). Due to the different risk profiles along the agricultural value chain, access to agricultural finance is generally most difficult to obtain at the smallholder production level, especially for long-term investment loan schemes, since “[...] smallholders are [...] the main risk takers in the [...] value chain” and their “[...] revenues depend on increasingly volatile climatic conditions and erratic price developments, neither of which they control” (ibid: 6).<sup>5</sup> Processors, traders of commodities and agricultural producers with larger scale and higher levels of commercialization usually have easier access to financial services while smallholders typically face many constraints in meeting the eligibility criteria set by semi-formal or formal financial institutions.

Figure 3-3 – Risk patterns in agricultural finance (Own illustration based on ICO 2013)



### 3.5. Providers of smallholder agricultural finance

Agricultural finance can be provided by different suppliers of financial intermediation services with different levels of formality – ranging from formal, semi-formal to informal financial institutions – as well as through financial arrangements which involve non-financial institutions.

*Formal financial institutions* (or the *formal* financial sector) as referred to in this paper comprise the entirety of financial institutions legally introduced as well as formally approved and supervised by the respective government’s authority for the regulation of the financial sector (Ledgerwood 1999: 12-13). The term includes various types of banks, leasing and insurance companies as well as formally registered microfinance institutions. It is usually applied to distinguish the formal financial sector from informal financial institutions which are not regulated by the government (IFC 2011: 13).

*Semi-formal financial institutions* are not subject to regulations by government banking authorities but licensed and supervised by other government agencies, ministries or regulatory bodies. The term usually comprises credit unions, cooperative banks which are regulated by a bureau in charge of cooperatives, financial non-governmental organizations (NGOs), registered savings and loan cooperatives,

<sup>5</sup> For a detailed overview of main risks at different stages of the coffee value chain see *ICO* (2013: 11ff).

producer groups and other entities with a financial character (Ledgerwood 1999: 12-13).

*Informal financial institutions* rely on enforcement methods not supported by the government. They are rooted in the local communities and embedded with the existing customs, traditions, rules of conduct, and beliefs. The term includes grassroots institutions such as Savings and Credit Cooperatives (hereinafter SACCOs), non-registered self-help groups and personal arrangements (e.g. with local money lenders, family members etc.).

*Non-financial institutions* engaging in smallholder agricultural finance comprise all non-financial institutions which are involved in financing arrangements for smallholder farmers. These stakeholders comprise value chain actors such as agricultural service providers, traders, processors and exporters as well as public sector institutions, international donors and non-financial NGOs.

This paper primarily analyses the extension of financial services through formal (and to a certain degree semi-formal) financial institutions, since – compared to informal financial institutions – their capital resources are considerably higher and, thus, crucial to meet the substantial demand for smallholder agricultural finance. While there is no doubt that informal financial institutions have a critical and invaluable role to play in providing access to finance and saving schemes in areas where formal services are largely absent, their scope is and will continue to be limited. Moreover, some informal sources of credit, such as money lenders, typically offer their financial services at very unfavourable conditions resulting in extremely high costs (Armendáriz de Aghion and Murdoch 1995: 27ff).

## 4. The challenges of smallholder finance – a theoretical perspective

This analysis will be based on theoretical considerations derived from the school of thought of *New Institutional Economics* (NIE), most notably referring to the transaction cost approach and the analysis of principal-agent relationships which are particularly relevant for the underlying research question. This chapter first lays out the applicable concepts in theory (*Sections 4.1. and 4.2.*), followed by an application to the topic of smallholder credit (*Section 4.3.*). The perspective of NIE provides an important theoretical background to understand and analyze the transactions and relations between contracting parties which in turn also forms the basis of the dynamics within the credit market. This theoretical perspective furthermore allows for an exploration of particular challenges which specifically apply to smallholder agricultural finance, the subject of this thesis.

The theoretical strand of *New Institutional Economics* has its roots in a contribution by *Ronald Coase* (1937) who analyzed why certain economic transactions between individuals are not conducted bilaterally. Assuming certain imperfections in the market setup, *Coase* depicts that transaction costs such as costs for information, contracting, monitoring and implementation may incentivize individuals to form entities (e.g. firms) to reduce such costs and, thereby, to increase the overall efficiency of doing business. Following *Coase's* early works, subsequent academic contributions have explored the role of institutions for (the efficiency of) economic activity and formed the basis of an independent theoretical approach to analyze economic transactions. In that approach, transaction costs can be defined as the “costs of running the economic system” (Arrow 1969: 48; see North 1990). Institutions can be understood as “humanly devised constraints that structure political, economic and social interactions” (North 1991). *Davis* and *North* (1971) distinguish between two levels at which institutions shape transactions: the *institutional environment* at the macro level, which includes a set of fundamental political, social and legal ground rules, and the *institutional arrangement* at the micro level. *Williamson* refers to the latter as “institutions of governance [which] operate at the level of individual transactions” (1999: 5) and govern the ways in which economic units can cooperate within the institutional environment (1996: 325-326).

#### 4.1. Transaction Cost Approach

Building on the early works of NIE, *Williamson's* (1999: 55-56) transaction cost approach is based on two primary behavioral assumptions with regard to the interaction between human beings: bounded rationality and opportunistic behavior (see *Coase* 1984). Bounded rationality implies that the rationality of individuals is limited by the level of information, time and cognitive capacity available at decision-making (see *Voigt* 2002: 29). Opportunistic behavior results from a “self-interest-seeking assumption that makes allowance for guile” (*Williamson* 1999: 56) and human being's desire of individual utility maximization, also by taking recourse to deceit or fraudulent intent (see *Williamson* 1996: 6). Both behavioral assumptions result in information asymmetry and, thus, in transaction costs which incur in the form of information, contracting, monitoring and implementation costs to mitigate informational asymmetries and uncertainty. According to *Williamson* (1999: 59), transaction costs generally depend on three factors: (1) the frequency of a transaction, (2) the asset-specificity<sup>6</sup> of the investment involved in the transaction and (3) the complexity and uncertainty of the transaction (see *Wolff* 2000: 13).

#### 4.2. Principal-Agent Problems – Adverse Selection and Moral Hazard

Both behavioral assumptions of NIE, bounded rationality and opportunistic behavior, have also been the basis for the analysis of principal-agent problems, most notably the implications of informational asymmetries between a *principal* and an *agent* within an economic transaction whereas the agent is delegated to act on behalf of the principal.

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<sup>6</sup> Asset specificity is defined as the extent to which the investments made to support a particular transaction have a higher value to that transaction than they would have if they were redeployed for any other purpose. *Williamson* (1996: 13) argued that transaction-specific assets are non-redeployable physical and human investments that are specialized and unique to a task.

Principal-agent problems may occur either before a contract is signed or in the course of the transaction after a contract has been signed. According to the principal-agent approach, a lack of or asymmetrical information between the two contracting parties – the principal and the agent – decreases the likelihood of a successful transaction unless contractual features or mechanisms are established to improve mutual information or to sanction non-compliance since, in reality, information may be withheld by one party, agreements may not be complied with or services may not be provided (Heyd and Beyer 2011: 17-40).

The risks of *pre-contractual* (ex-ante) information asymmetries, caused by bounded rationality and opportunistic behavior, are subsumed under the term *adverse selection* (Wolff 2000: 41). Since principals may be unable to evaluate or anticipate the agent's performance and behavior, the selection of (suitable) agents becomes a delicate matter. *Moral hazard*, on the other hand, refers to *post-contractual* situations of informational asymmetry in which one party with more information about its actions or intentions has a tendency or incentive to behave inappropriately from the perspective of the party with less information, in particular if the party with more information is insulated from risk (Voigt 2002: 102 – 113). A distinction can be made between *ex-ante* moral hazard and *ex-post* moral hazard. The former refers to the fact that unobservable actions may be taken by the agent before the project's returns are realized while those actions affect the likelihood of a successful realization of the investments returns (also referred to as *hidden action*). The latter results from the idea that – even after all efforts have been taken by the agent to ensure a successful realization of the project – he may opportunistically decide to withhold information (e.g. the profits realized) from the principal and pretend the investment has failed (*hidden information*).

In a situation of asymmetric information where problems of moral hazard and adverse selection apply, monitoring is a crucial endeavor to improve the efficiency of contracts. Monitoring can take the form of *screening* of agents (or their projects) to avoid adverse selection, *preventing* opportunistic behavior and/or *punishing* a party who fails to comply with contract obligations to avoid moral hazard (Freixas and Rochet 1999: 29; Hellwig 1991).

### 4.3. The New Institutional Economics of credit markets

Credit markets and contractual loan agreements can be fruitfully analyzed from the perspective of New Institutional Economics, most notably exploring both the overall *institutional environment* and the *institutional arrangements* (Davis and North 1971) between contracting parties using the analytical concepts of both the transaction cost approach and the principal-agent relationship. The starting point is that a loan contract can be considered as an investment relation, the basic unit of analysis, in which an investor (the lender and principal) provides capital to a firm (the borrower and agent) which uses this capital for investment purposes and commits to pay back the capital, typically with interest, as agreed between the two parties. In a second step it can be assumed that flows of information between the borrower and the lender are not always perfect, e.g. that certain pieces of information are not available to either side or might

be deliberately withheld by one of the two parties due to individual cost-benefit considerations. If such informational asymmetries between the investor and the firm prevail, principal-agent problems are pronounced and the relation is precarious in so far as it creates mutual dependencies and offers occasions of opportunistic behavior (Dietl 1998: 4). In financial markets, informational asymmetries are particularly pronounced since “[b]orrowers typically know their collateral, industriousness, and moral rectitude better than do lenders” and “entrepreneurs possess ‘inside’ information about their own projects for which they seek financing” (Leland and Pyle 1977: 371).

Thus, within a loan contract, the lender (principal) faces agency problems which result from a lack of information with regard to the borrower’s characteristics (e.g. the risk associated with his investment), his effort and commitment to that investment as well as the expected returns of the investment. The three different agency problems – discussed in the previous section – may thus also occur in credit markets, in fact at three different stages of a transaction: First, adverse selection – before the contract is made –, second, ex-ante moral hazard – after the contract has been made but before the returns are realized – and, third, ex-post moral hazard – after the contract has been concluded and after the returns are realized (Datta 2003; Voigt 2002: 102 – 113; Wolff 2000).

From a lender’s perspective, the first challenge of *adverse selection* occurs prior to the disbursement of a loan, when the lender decides to which potential borrower(s) he allocates the available capital. Naturally, lenders aim to provide loans to the most viable projects and charge riskier borrowers higher interest than safer ones to compensate for the increased likelihood of loan default. However, the lender may have little or no reliable information, neither about the quality (i.e. commitment and integrity) of the borrower nor about the risk associated with the borrower’s project. However, options such as raising the interest rate or escalating the collateral requirements for all borrowers may easily crowd out the most viable, safer borrowers (this is referred to as the adverse selection effect) and might incentivize borrowers to invest into riskier projects with higher returns. As a result, a loan market characterized by asymmetrical information may easily suffer from credit rationing since banks will rather reduce the number of loans granted than increasing interest rates or collateral requirements (Stiglitz and Weiss 1981: 394). Credit rationing can only be avoided through in-depth screening and assessment of potential borrowers and their projects. However, making the necessary information available through background research on borrowers is often prohibitively costly and, thus, may also result in further credit rationing (Armendáriz de Aghion and Murdoch 1995: 35).

The second challenge in credit markets, *ex-ante moral hazard*, describes the idea that borrowers may take unobservable actions before the project’s returns are realized, while these actions affect the likelihood of the desired realization of returns. One such scenario could occur if a borrower does not invest the granted funds for the agreed purpose but rather spends the funds on other (possibly less profitable) activities. The problem evolves after the funds have been granted since the lender cannot control if the borrower will use the resources in such a way as to ensure that the investments are successful.

A third problem, *ex-post moral hazard*, refers to a situation when project returns have been realized but borrowers may withhold unobservable information (e.g. the amount of profits realized) from the lender or simply take the proceeds and run away with them. The situation arises if borrowers falsely claim a negative return or a default (especially if the lender cannot verify the actual returns realized) or/and if repayment – after actual profits have been secured by the borrower – cannot be ensured by the lender, e.g. as borrowers try to abscond with the lender’s money (Armendáriz de Aghion and Murdoch 1995: 8, 50).

#### **4.3.1. Agency problems, transaction cost and risk in smallholder agricultural finance**

The three problems of adverse selection, ex-ante and ex-post moral hazard are particularly pronounced in the context of smallholder agricultural finance. Adverse selection and moral hazard could be overcome by reducing pre- and post-contractual information asymmetries, e.g. via customer screening as well as rigid loan and business monitoring by the lender, or by adopting and enforcing contractual features that sanction non-compliance, notably non-repayment of the loan (Armendáriz de Aghion and Murdoch 1995: 8; Freixas and Rochet 1999: 29; Westercamp 2010).

However, such monitoring measures are typically not realizable or effective in the context of smallholder agricultural finance: transaction costs, such as the costs of gathering information on customers, as well as costs related to contract conclusion, monitoring and enforcement, are substantially higher in rural areas and for interactions with smallholder farmers. This is because in the case of smallholder agricultural finance services are demanded in areas with low population densities, larger distances between clients, lacking infrastructure, a sometimes insecure regulatory environment which exacerbates the enforcement of contracts and low educational levels of borrowers who often lack basic financial literacy. Especially larger financial institutions located in urban areas face difficulties and considerable costs in accessing the much needed field-level information. Informal grassroots institutions which are embedded in the local context and highly interspersed with the local population typically gain easier access to client information and have more effective enforcement mechanisms at their disposal (Dalberg 2014: 3).

In microfinance or smallholder agricultural finance transaction costs further increase since lenders need to manage many small transactions rather than servicing one large transaction for a larger borrower (see Armendáriz de Aghion and Murdoch 1995: 8). In addition, lenders usually cannot resort to effective sanctioning mechanisms since borrowers are often unable to pledge suitable collateral against which a loan can be secured and as, even if collateral can be provided, contracts can hardly be enforced in the context of weak judicial systems which are often found in developing countries and rural areas in particular. In summary, “agency problems [...] are accentuated when individuals cannot offer seizable collateral, transactions are costly, and when legal enforcement mechanisms are weak” (ibid: 39-40).

Besides the challenges of high transaction costs and limited liability in rural finance, *agricultural* finance is associated with additional challenges. First, production is subject



to a set of unique and (typically) covariant risks such as unpredictable weather patterns and market price volatility which may affect a large group of borrowers at the same time and increase the likelihood of default by a considerable margin. Second, seasonality of crops entails that borrowers do not receive a regular (e.g. weekly/monthly) income but that proceeds may be realized only once a year and sometimes only several months after the disbursement of the loan to the borrower. Thus, loan products need to be specifically tailored to agricultural crop cycles and repayment needs to be structured accordingly, usually involving a grace period. The amount of the lender's funds bound in the transaction as well as the need for monitoring of borrowers increases if repayment of loans does not occur regularly since the early-warning mechanism of frequent repayments starting soon after loan disbursement is not available (Dalberg 2014: 3).

#### 4.3.2. Explaining financial intermediation

The perspective of NIE and its assumptions of bounded rationality and opportunistic behavior also form the basis for the theoretical explanation of financial intermediaries within the financial system. A financial intermediary is an “economic agent who specializes in the activities of buying and selling [...] financial contracts and securities” (Freixas and Rochet 1999: 15). Financial intermediaries are entities that act as middlemen between two parties in a financial transaction. While there are different types of financial intermediaries, in its narrow sense the term typically describes entities which connect lenders with borrowers by collecting surpluses from one party and lending those funds to another party (Polster 2001: 46-51). The most fundamental theory of financial intermediation by *Diamond* (1984) explains the emergence of financial intermediaries by the fact that such intermediaries, usually financial institutions, minimize the costs of monitoring information which is used to resolve incentive problems, such as adverse selection and moral hazard, in situations of asymmetrical information between borrowers and lenders. Investors will delegate such information monitoring to financial intermediaries to reduce transaction costs and to avoid a duplication of effort. As a result, a financial intermediary's main role is that of a delegated monitor. In accordance with *Diamond* (1984), *Leland* and *Pyle* (1977: 383) depicted that “informational asymmetries [are] a primary reason that intermediaries exist”. Thus intermediaries play a fundamental role in economic growth and financial sector development by reducing the constraints of transaction costs and asymmetric information (Allen and Santomero 1998; Santomero 1984). While a (commercial) bank is a prototype of a financial intermediary, this category also includes various other types of financial institutions such as investment banks, smaller and locally embedded banks, insurance companies, broker-dealers, mutual funds and pension funds. However, the term applies to any organization which channels funds between lenders and borrowers.

As a matter of fact, within financial markets, agency theory and problems of asymmetrical information explain a commonly observed missing link of capital and abilities. On the one hand, large commercial banks have considerable funds to lend but they lack adequate information on clients in remote areas and cost-effective ways of reaching out to customers and enforcing contracts. On the other hand, locally-based

smaller financial institutions have a critical level of information and typically more effective enforcement mechanisms within grassroots communities but they lack adequate resources. One option for larger financial intermediaries is to interpose financial institutions (possibly semi-formal organizations) with easier access to remote clients and respective information (such as village or community banks or non-financial entities) as intermediaries (Westercamp 2010). As will be shown below and analyzed in more detail in *Chapter 8* based on empirical data collected in Tanzania's coffee sector, lenders can in fact interpose non-financial institutions such as agricultural producer organizations and cooperatives, more precisely the management of such organizations, as financial intermediaries through which financial services are channelled to individual smallholder farmers in order to reduce transaction costs and, thus, create access to financial services for otherwise non-bankable clients.

However, when interposing financial intermediaries the bank can end up circumventing one agency problem only to be faced with another even more difficult problem. If the bank has to closely assess and monitor the agent, the advantages of linking with the smaller, locally based financial institutions are undermined (Armendáriz de Aghion and Murdoch 1995: 55-56). Thus, the effective and cost-efficient assessment and monitoring of delegated financial intermediaries with regard to their financial and overall management performance becomes a crucial endeavour, most of all if the intermediary role is taken over by agricultural small-scale producer associations which in some cases struggle from low educational levels, intransparency as well as inefficient management and leadership (see Staatz 1987). In that light, *Chapter 8* will also analyse prevalent approaches to assessing the performance and credit readiness of coffee producer associations and groups.

## 5. Smallholder agricultural finance – state of research

This chapter gives an overview of the state of research of smallholder agricultural finance. *Section 5.1.* illustrates the historical paradigm shift in rural and agricultural finance in the developing world and international discourse. *Section 5.2.* gives an overview of strategies which are currently or could be deployed to improve access to smallholder agricultural finance, mainly targeted at mitigating moral hazard and adverse selection problems. The remainder of this chapter provides an overview of recent contributions which discuss the (limited) availability of smallholder credit (*Section 5.3.*) and the impact of microfinance in more general terms (*Section 5.4.*).

### 5.1. The paradigm shift in rural and agricultural finance

The approaches to providing financial services in rural areas and to the agricultural sector have undergone a profound transformation over the past decades. Governments and regulators in the developing world as well as international donors have largely changed their strategies and models to provide rural and agricultural

finance. In the post-colonial 1960s and 1970s, most governments in developing countries tried to secure access to agricultural finance through subsidized and directed credit, mainly facilitated by administratively set interest rates and compulsory lending quotas on banks. For that purpose, governments created state-owned (agricultural) development finance institutions, or, in some cases, farmer cooperatives, specifically mandated to finance agriculture. Subsidies were targeted at addressing market failures, especially by compensating banks for entering into high-risk markets with high transaction costs and by forcing interest rates for loans down to a low level for poor borrowers, thereby aiming to incentive agricultural producers to invest into their production systems (Yaron et al. 1998: 148f).

Toward the late 1970s and early 1980s, the poor results of this state-led and politically driven model of agricultural development and finance became increasingly visible. Lending programs directed at agricultural clients in rural areas were inefficiently managed, generally ineffective (often failing to reach the target low-income beneficiaries but rather larger borrowers who could be served at lower transaction costs) and unsustainable because of high delinquency (largely due to moral hazard) and considerable loan default (Yaron et al. 1997). The *Rural Finance Program* at the *Ohio State University*, one of the most prominent critical academic contributors at that time, launched a series of critiques of government-led development banks and rural finance programs. It was found that subsidized credit had distorted rural financial markets, undermined the emergence of sustainable, demand-driven financing models and, thus, the original goal of reducing rural poverty had largely been missed (Adams and Douglas 1981; Adams et al. 1983, 1984). According to the critics, subsidized credit and fixed interest rates had led to problems of adverse selection and distorted the rationing mechanism of interest rates according to which only those with lucrative projects would be willing to pay a certain interest. Rather than allocating funds to the most promising projects, the critics argued, loans were granted based on political considerations or social concerns. In addition, incentives for bankers to encourage savings and to enforce repayment were low due to a steady injection of government funds and politically-driven incentives of loan forgiveness, often prior to elections.

During the 1980s, in response to the failure of state-driven lending initiatives, donors and governments that had invested extensively in agricultural development banks and agricultural credit withdrew their support and anticipated that commercial banks would fill the gap and service rural and agricultural markets in the developing world. It was at the same time that most developing countries started to review their policies and to liberalize their financial sectors – often in the wake of *Structural Adjustment Programmes* – thereby also opening their financial markets to private financial institutions.

The 1970s have also seen the emergence of first microcredit schemes in some countries such as Bangladesh (e.g. Grameen Bank), some Latin American countries and India. These early models of microcredit usually resorted to the innovative models of group lending schemes, a mechanism which allowed borrowers to act as guarantors for each other – which resulted in a reduction of moral hazard through group pressure – while conventional loan contracts at that time had been concluded with individual

clients and required the submission of collateral in the form of immovable assets to secure repayment (Armendáriz de Aghion and Murdoch 1995: 13; Helms 2006: 4).

The paradigm shift – in the 1980s and 1990s – from the delivery of government- or donor-subsidized credit to the development of sustainable financial intermediaries manifested as microcredit programs spread throughout the world. The success of well-managed programs for low-income individuals (most of all women) which saw extremely low default rates demonstrated that microfinance institutions were economically viable and impact-driven. This in turn attracted funding from the commercial banking sector and investors and allowed microfinance institution to further scale up their operations, and in some cases, to pursue a strategy of commercialization and formalization within the financial sector. At the same time, the narrow focus on *microcredit* was expanded to a deeper understanding of *microfinance* while the latter concept comprises credit, savings, insurance and payment services (Ledgerwood 2013: 1).

However, microcredit typically originated in and even today still focusses on urban, densely-populated areas while rural areas with lower population densities and largely dependent on agricultural production were usually excluded from financial services. Thus, today's academic debate on microfinance explores opportunities to increase the scale, scope and efficiency (resulting in a decrease of the operating cost) of microfinance services, most of all through the inclusion of additional actors and by introducing innovative provision models that reduce costs or enable financial institutions to reach more remote or poorer borrowers. The overall rationale is that the deeper integration of the financial systems and the inclusion of commercial banks and other formal financial institutions will vastly increase the volume and quality of financial services available to rural low-income households (Helms 2006: 5; IFC 2011).

The new paradigm in rural and agricultural finance, by some publications referred to as the “financial systems approach” (Helms 2006; Schoombée 1998), is based on demand-driven, market-based and sustainable service provision (Jessop et al. 2012). It focusses on the role of efficient financial intermediation for economic development and poverty reduction and the delivery of financial services on a commercially viable basis in a liberalized financial sector (IFC 2011: 19-20). According to the financial systems approach, governments should refrain from directly providing financial services or intervening in financial markets as “[l]ending quotas, interest rate ceilings or subsidized funding to priority sectors [...] distort resource allocation and crowd out private financial institutions” (IFC 2011: 20).

The liberalization of financial markets and interest rates also opened the way to new initiatives by microfinance institutions. Attention increasingly shifted to the sustainable and cost-efficient provision of financial services to the poor and low-income individuals or groups. Although these concepts were pioneered by NGO-type microfinance institutions, they were soon embraced by governments, international development partners, and banks as well. The liberalization of financial markets also created space for a large variety of member-based and self-managed savings and credit associations, such as village and rural banks, or Savings and Credit Cooperatives (SACCOs).

## 5.2. Strategies to improve access to smallholder agricultural finance

With the changing paradigm and the privatization of the financial sectors in developing countries, the academic debate about sustainable microfinance, rural (micro-) finance and (smallholder) agricultural finance has gained considerable momentum over recent years. A major strand of the academic debate focusses on the challenges associated with the provision of rural and agricultural finance in developing countries and possible solutions to problems of moral hazard and adverse selection (Doran et al. 2009; IFC 2011, 2012; World Bank 2005). Many donor organizations, foundations, think tanks and other initiatives have identified access to financial services for low-income rural households as one of the key challenges of improving rural livelihoods and are thus promoting research on innovations within the financial sector and initiatives to help mobilize funding from formal financial institutions. In addition, with the rediscovery of smallholder farming systems as channels of rural development and poverty alleviation, numerous so called *social lenders* (socially and impact oriented suppliers of financial or advisory services) have evolved creating a dedicated network of expert institutions whereas these organizations are usually supported by donors or philanthropic foundations (CSAF 2014a; FAST 2014a; PlaNet Finance 2014; SCOPEinsight 2014). In the light of numerous challenges (including adverse selection and moral hazard) and associated risks of providing financial services in rural and agriculture-based markets (as presented in *Chapter 4*), existing initiatives which aim to improve financial inclusion and scale up the provision of financial services in rural areas that depend on agricultural production try to improve access to sustainable smallholder agricultural finance through strategies of both *risk mitigation* and *risk sharing* (Agrifin 2013; Carroll et al. 2012; ICO 2014d; IFC 2011, 2012; MFW4A 2014). Some of the existing measures and approaches developed to date to promote access to financial services are laid out in more detail below.

### 5.2.1. Risk mitigation

One channel through which smallholder agricultural finance can be scaled up is the promotion of farmer organization, namely the aggregation of smallholder farmers in producer groups with established organizational structures and roles (Dalberg 2013, 2014; IFC 2011: 58-60). *Carroll et al.* (2012: 1) depict that financing schemes which work through cooperatives or producer organizations (hereinafter POs) have proven as an efficient channel for supplying finance to smallholder farmers and to increase financial inclusion beyond formal institutions since transaction costs can be substantially reduced by engaging with such entities as financial intermediaries. At the same time, however, organizational development and the aggregation of smallholder farmers into POs remains a bottleneck as only about ten per cent of the world's smallholder farmers are organized in such collective entities and, thus, can be addressed by using POs as financial intermediaries while increasing aggregation of small-scale producers will also increase the addressable demand of smallholder agricultural finance (*ibid.*).

Recognizing this bottleneck, many mostly donor- or public funded organizations engage in organizational development of existing or the creation of new producer groups (FAO 2011). Additional technical assistance in financial literacy, including

capacity development on loan management and record keeping, helps smallholders to manage their businesses more efficiently and to become bankable from a financial service provider's perspective. Farmer organization has also been identified as a major bottleneck by the *International Coffee Organization* (hereinafter ICO). In 2011, the ICO has launched the "Consultative Forum on coffee sector finance", a committee which meets semi-annually to explore and address challenges related to finance and risk management in the coffee sector. The third meeting of the Consultative Forum focused on the topic of "farmer aggregation as a platform through which access to finance [...] could be achieved" (ICO 2013: 2) and on the role of "well-organised farmer groups [as] a vehicle for managing risk and access to finance" (ibid.).

As laid out in *Chapter 4*, one of the most important factors for smallholders' lack of access to credit is financial institutions' incomplete information about borrowers (Armendáriz de Aghion and Murdoch 1995: 7). Thus, an additional strategy of mobilizing smallholder agricultural finance comprises efforts to close the information gap between lenders and borrowers in the financial market. To avoid problems of adverse selection and to reduce the costs of borrower assessment, a number of philanthropic organizations, such as the *Financial Alliance for Sustainable Trade* and *SCOPEinsight* have developed agricultural assessment tools for small and medium enterprises (hereinafter SMEs) which can be used to rate the governance and management performance of agricultural producer groups and thereby address the information gap between agricultural SMEs and financial service providers (FAST 2014a; SCOPEinsight 2014).

Innovative information and communication technologies (hereinafter ICT) can also play a crucial role in closing the information gap between lenders and borrowers in credit markets. By improving the availability of reciprocal information between lenders and borrowers, ICT may easily improve and reduce the costs of borrower assessment and loan controlling in rural areas thereby reducing adverse selection and moral hazard risks (IFC 2011: 61-62). Cell phone based payments and mobile banking services already show impressive results in penetrating rural areas, thereby improving financial inclusion (IFPRI 2010: brief 8). More recently, the Kenyan mobile service providers Safaricom in cooperation with a local bank has started to offer savings accounts with competitive interest rates and tailored credit products to its clients. Both facilities are administered through mobile phone-based interfaces and the system uses historical user data to analyze the credit readiness of potential borrowers (see Rothe and Schmidt 2015).

Another important factor which impairs small-scale farmers' access to credit is lacking means of loan collateralization (Armendáriz de Aghion and Murdoch 1995: 7). If financial service providers have opportunities of sanctioning non-repayment of loans, most notably by confiscating collateral (typically immovable assets) of the borrowers, this will decrease the likelihood of moral hazard and, thus, the availability of credit. However, smallholder farmers in the global South often do not own immovable assets, such as land, or in other cases lack formal evidence of ownership of such assets. The introduction or formal recognition of land titles which could then be seized as collateral for loan contracts is certainly one important step in improving financial institutions' comfort in lending to smallholder farmers, since rather than actually seizing land or

houses, banks have a pressure mechanism to incentivize borrowers to pay back loans (IFC 2011:46f).

Warehouse receipt system financing, also referred to as collateralized commodity financing, is another promising channel of scaling up the provision of finance to agricultural small-scale producers. Unperishable commodities, such as coffee, are stored in licensed warehouses against receipts which can be redeemed at financial institutions against loans. The warehouse receipt system financing has proven as a successful tool in improving access to post-harvest finance through the collateralization of commodities, especially if borrowers are unable to provide any other form of hard collateral. More than that, the model provides a mechanism to mitigate market price volatility as the owners of the coffee have the choice to sell immediately after harvest or to store at the warehouse and sell the product at a later stage when commodity prices typically start to increase compared to the beginning of the harvesting season (IFC 2011: 66ff).

A very recent joint research project by the *International Finance Corporation* (IFC), the *International Trade Council* (ITC) and the *Financial Alliance for Sustainable Trade* (FAST) explores the role of sustainability standards, most of all certification schemes, in facilitating access to financial services. The basic assumption is that there are certain synergies between major pillars of sustainability standards' implementation (such as organizational development of farmers or improvement of agronomic practices) and financial institutions' eligibility criteria for their clients to qualify as borrowers (see Grigoryeva and von Hagen 2014). In addition, certification can help prevent moral hazard in the form of side-selling of coffee which is a major impediment to the extension of pre-harvest finance. Since producers have an interest to sell their commodities through established business relationships with trusted and certified buyers in order to profit from price premiums for certified products, they are less likely to sell their produce through other (non-certified) channels to bypass existing liabilities with regards to loan liquidations. As a result, certification could possibly facilitate access to financial services, e.g. by reducing the (perceived) risk on the side of the financial institution, while most financial service providers – to date – do not take such rationale into consideration. Since the debate about the economic benefit of certification is often very controversial – e.g. since premiums are sometimes not paid or very low while costs for certification are substantial – claims that certification should also help farmers gain access to financial services are becoming more frequent (KPMG 2013: 3).

Another rather recent innovation in agricultural credit markets is credit insurance. Financial institutions may mitigate risk by offering certain agriculture-related loan products in combination with crop insurance, e.g. insuring loans which default induced by weather hazards or pest and diseases. While crop insurance products have been successfully piloted and implemented in some countries (IFPRI 2010: brief 12; Syngenta Foundation For Sustainable Trade 2014), the individual assessment of on-site crop losses is associated with problems of moral hazard and high transaction costs, costs which are either passed on to the borrowers or need to be compensated through subsidies. Index-based insurance schemes which release payments in the case of deviations from a predetermined indicator, e.g. a certain threshold of rainfall which is not met, referred to as weather-index insurance (see Sina 2012), have the

potential to reduce assessment costs but, here too, the additional costs for these insurance arrangements are typically passed on to the borrowers or need to be borne by grants since market based approaches are still in their footsteps (IFC 2011: 41-43). However, crop insurance products can be a crucial factor to give small-scale producers more comfort to invest into their production systems, since in the case of crop failure, all funds invested for agricultural inputs such as seeds, fertilizer or herbicides will be lost without a crop insurance scheme.

### 5.2.2. Risk sharing

Among the strategies to improve lending to smallholder farmers are measures which aim to share the risk among different stakeholders rather than to reduce it. Value chain financing arrangements are one prominent model of risk sharing to promote the supply of financial services. The term value chain financing refers to financial arrangements and cash flows between different stakeholders within the agricultural value chain (*internal* value chain financing) and (optionally) financial institutions which are not part of the commodity chain (*external* value chain financing). The model assumes that “the exchange of goods for payment along the value chain creates opportunities for extending credit and other financial services to otherwise ‘unbankable’ populations“ (Milder 2008: 1). The overall rationale behind this form of financing is to use business relationships and commercial arrangements between trusted parties as soft collateral and to share risk between different parties, most of all producers, agricultural service providers, trader, exporters, buyers and financial institutions who all have an interest in extending the agricultural value chain (IFC 2011: 63-65; Milder 2008: 4; Miller and Jones 2010).

Finally, partial credit guarantees (hereinafter PCGs) and risk sharing facilities are instruments which distribute the risk of credit schemes provided by financial institutions to certain borrowers through an agreement with a third party, the credit guarantor who (partially) guarantees selected loan facilities within the financial institution’s portfolio. PCGs can help foster the comfort and commitment of financial institutions to provide credit, especially high-risk, medium- and long-term loan facilities which might not be offered without a credit guarantee in the first place. There is a wide range of credit guarantee schemes in Africa which are designed to foster lending to the agricultural sector and small-scale farmers (see Potts et al. 2011: 3-4 for an overview of PCGs). Credit guaranteeing schemes are most effective if financial institutions with a high risk perception are encouraged to test the feasibility of particular loan lines, e.g. to the agricultural sector, and, based on a possibly successful experience, are willing to continue their engagement, even on a purely commercial basis after the credit guaranteeing facility runs out. There is broad consensus that guaranteeing facilities need to be well designed, e.g. to gradually phase out, to promote financial sustainability (IFC 2011: 38f; see Zander et al. 2013). Credit guarantees should only comprise a partial guarantee of a loan facility to ensure commitment of both the lender and the borrower to avoid moral hazard and adverse selection. On the side of the borrower guaranteeing schemes should ideally not be disclosed to avoid expectations that delinquent loans will be liquidated by the PCG, once again, resulting in moral hazard.



### 5.3. Availability of agricultural finance for smallholders

Although these different measures of risk mitigation and sharing have helped to improve financial inclusion, at least to a certain degree, there is clear evidence of a large unmet demand for smallholder agricultural finance. Most notably, although many of the strategies and approaches presented above are worthwhile and promising in principal, the track record of their implementation to date clearly lacks behind ambitions since commercially-oriented financial institutions and value chain actors have not yet been able and willing to sufficiently address the challenges of smallholder agricultural finance. Many banks and microfinance institutions do not lend to the agricultural sector in the first place since “agriculture is perceived to be a high-risk sector especially with African agriculture dominated by smallholder farmers who quite often are not in a position to offer traditional securities” (Maritz 2011) or simply lack the expertise to develop tailored products for smallholder farmers. Those banks which engage in financing smallholders often have limited portfolios which they are willing to expose to the rather risky smallholder lending activities while other sectors of the economy promise a more stable or even higher return on investment. There is a clear agreement in the academic debate that

[...] neither commercial banks nor the emerging microfinance industry are willing or able to sufficiently meet the financial needs along agricultural value chains, leaving farmers and agricultural SMEs unserved in the so-called ‘missing middle’. [...] [E]xisting mechanisms for agricultural finance are not adequate and [...] we need to move to innovative and market-based approaches that are scalable and can reach a large number of beneficiaries (IFC 2011: 6).

Due to the demise of heavily subsidized agricultural and rural finance delivery systems, which has not been compensated by private financial institutions to date, many smallholder farmers have been left with inadequate and costly access to financial services (Hazell et al. 2007).<sup>7</sup> The liberalization of financial markets has only had a marginal impact on the availability of credit and additional financial services, such as mobile payment, saving or insurance schemes for smallholder farmers to date as the ongoing debate about the gap in rural and agricultural finance (Doran et al. 2009) and the unmet demand for credit in rural areas suggest (IFC 2011, 2012; FAST 2014b).

So far, [...] the private financial services industry has made limited progress in replacing the old paradigm by responding to the financial needs of small-scale agriculture and seeking out opportunities to improve existing services; develop new ones; and generate additional revenue. The gap in the financial landscape known as the missing middle remains a major challenge (Doran et al. 2009: 8).

While it is very cumbersome to specifically quantify the unmet demand of agricultural finance in more general, there is wide consensus that the focus on market-based and demand-driven financial systems has not (yet) provided the hoped for, and sustainable, sources of finance for the agricultural sector. Another reason is that many microfinance institutions still focus on urban settings, and those working in rural areas, prefer to

<sup>7</sup> As a reaction to the insufficient provision of financial services, some governments continue to support the agricultural (financial) markets through state and agricultural development banks and by various supply-side measures such as credit and agricultural input subsidization. While those initiatives might create impact in a short-term perspective, they are not only limited in scope but in some cases also ill-designed and thus undermining the development of economically viable, sustainable and demand-driven approaches (Adams et al. 1981, 1984; Meyer 2011).

finance non-agricultural projects (Jessop et al. 2012). Only recently have MFIs started to improve the inclusiveness of their financial services through the development of tailored products for the agricultural sector while many of those efforts are still in their initial phase and require long transition periods.

According to a recent report by *Dalberg Global Development Advisors* – a global development consultancy firm – the world’s 450 million smallholder farmers have funding requirements of an estimated 450 billion United States Dollars (hereinafter USD) for short- and long-term financing while a very large part of that demand refers to small-scale producers with no access to organized value chains and, thus, remains largely unmet by financial institutions (Carroll et al. 2012: 8-11). While the currently addressable demand in short-term financing amounts to about 22 billion USD (ibid: 10), a survey conducted by the *Initiative for Smallholder Finance* with 1,800 financial institutions revealed that the total volume of debt financing supplied by domestic banks to smallholder farmers in the developing world amounted to about nine billion USD in 2013. This represents a fractional share of only two per cent of the total demand for smallholder financing while the vast majority (80 per cent) of lending to smallholder farmer originates from partially or fully-privatized state and agricultural development banks and far less commitment can be credited to purely commercial banks and microfinance institutions (CSAF 2014b; ISF 2013).

In light of the insufficiency of the current financial market architecture to meet the demand for agricultural finance, further research is needed to analyze the demand and supply of financial services for smallholder farmers (IFC 2011: 5-7). Case studies at a country level may help assess opportunities of scaling up the provision and inclusiveness of agricultural finance, e.g. through the inclusion of additional suppliers, such as commercial banks or other formal financial institutions (who typically shy away from agricultural finance) and innovations in the finance industry which help cope with problems of information asymmetry and high transaction costs, and to identify bottlenecks that limit the expansion of the full range of financial services to agricultural small-scale producers.

#### 5.4. Impact of microfinance

In addition to analyzing patterns of financial inclusion of agricultural small-scale producers, this thesis also addresses the profitability and impact of loan schemes, especially from a borrower’s perspective. Robust evidence on the impact of smallholder agricultural finance is clearly limited. This diagnosis also applies to Tanzania and the country’s coffee sector since no systematic reviews on the impact of agricultural finance on coffee smallholder livelihoods can be found.<sup>8</sup> Thus, patterns of positive (or negative) impact on individual livelihoods clearly need to be further analyzed in detail.

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<sup>8</sup> One of the few studies on the impact of smallholder agricultural finance by *Girabi and Mwakaje* (2013) finds that access to microfinance improves the productivity of maize and sunflower production in Tanzania’s Singida region. However, the study does not take the costs related to microfinance services into consideration and, thus, cannot make any claims on net-profit or impact.

At the same time, it must be acknowledged that since the emergence of microfinance in the 1970s and its early success stories, the sector has undergone a profound transformation and seen immense growth. With the changing paradigms in micro-, rural- and agricultural finance, resulting in a focus on market-based and cost-effective approaches, the microfinance industry grew enormously, especially since 2000. Its total global volume of loans granted increased from close to three billion USD in 2001 to 72 billion USD in the year 2010, supported not only by private investment but also through governmental bodies and donors who increasingly channel their investments into larger and profit-oriented microfinance institutions (Mader 2013b: 4-5).

In the light of this growing “microfinance industry”<sup>9</sup> (Mader 2013a, b), a vivid and more general debate on the impact of microfinance has emerged recently, guided by a large quantitative meta-study of *Duvendack et al.* (2011: 2) which found that “rigorous quantitative evidence on the nature, magnitude and balance of microfinance impact is still scarce and inconclusive”. While some studies provide anecdotal examples of the improvement of livelihoods (such as Todd 1996), systematic reviews analyzing impacts of microfinance (see Gaile and Foster 1996; Goldberg 2005; Odell 2010; Sebstad and Chen 1996) conclude that there is little reliable evidence for the positive results of micro-financial services. In spite of the growth of the microfinance sector and a discourse which suggests its (apparent) success, it is widely acknowledged that no well-known study robustly shows any strong impact of microfinance (Armendáriz de Aghion and Morduch 1995: 199-230). Quite contrarily, *Schicks and Rosenberg* (2011) find indicative evidence that microcredit – under certain circumstances – may drive people into over-indebtedness with severe consequences for their livelihoods.

While evidence on the positive impact of microfinance from a borrower’s perspective is still lacking or at best remains highly disputed, *Mader* (2013b), in a critical study of the global microfinance sector, finds that the growing microfinance industry’s actual gross-profits amounted to nearly 20 billion USD in 2010 at a total loan portfolio of about 73 billion USD and an average interest rate of 26.6 per cent per annum.<sup>10</sup> The study further estimates that the gross-profits for all MFIs reporting at *MIXmarket* sum up to about 100 billion USD from 1996 to 2011 (ibid: 11). Based on that finding, *Mader* claims that the growing microfinance sector skims large volumes of funds from poor households in the global South, a process he refers to as “financialisation”<sup>11</sup> (ibid) and concludes that this process and the resulting depletion of capital in the developing world must clearly be seen with scepticism, whereas according to *Mader* the consequences would be less drastic, if a clear positive impact of financial services of MFIs could be reliably attested.<sup>12</sup>

<sup>9</sup> Translated from the original German term “Mikrofinanzindustrie”.

<sup>10</sup> Measured through the indicator “yield on gross loan portfolio” and other data retrieved from the online database *MIXmarket* (2014) which provides financial information on more than 2,000 MFI worldwide.

<sup>11</sup> Translated from the original German term “Finanzialisierung”.

<sup>12</sup> It is important to stress that the critical debate about the impact of microfinance which has been triggered by *Mader’s* contributions mainly refers to MFIs’ activities in non-agricultural business sectors in Asia. Since this thesis focusses on *agricultural* microfinance (and its impact) in SSA, the criticism does not directly apply to the specific topic of this thesis. Yet, *Mader’s* reflections call for deeper exploration of the profitability and impact of microcredit in more general and, thus, also in the sphere of smallholder agricultural finance.

In summary, the review of the state of research on smallholder agricultural finance demonstrates that the academic debate offers various strategies to improve the availability of financial services, but, at the same time, recent studies indicate that the provision of credit to smallholder farmers is still largely limited and cannot meet the increasing demand for financing by agricultural small-scale producers. Moreover, reliable evidence on the impact and profitability of microfinance (and smallholder agricultural finance) is lacking and remains unexplored. This thesis addresses these research gaps by analyzing pathways to increasing access to and patterns of the profitability of smallholder agricultural finance using empirical evidence from Tanzania's financial industry and the coffee sector.

## 6. Smallholder agricultural finance – the case of Tanzania's coffee sector

This chapter lays out the rationale for the selection of the case study (*Section 6.1.*) and provides background information on the history, organizational patterns and key stakeholders of Tanzania's coffee sector (*Section 6.2.*) before, finally, *Section 6.3.* presents the research methodology which was used for the conduct of the field study of agricultural finance for the country's small-scale coffee producers.

### 6.1. Rationale for a case study of Tanzania's coffee sector

Coffee is one of the most important export commodities and a key source of livelihoods for a large proportion of the population in many African countries. The vast majority of the world's ten million coffee producers are smallholder farmers who are directly dependent on coffee for their living. While according to estimates Africa is home to more than half of the world's coffee farmers, the continent's production of coffee accounts for only 12.8 per cent of the global supply (George 2014: 2; IDH 2014: 5-7). This discrepancy is owed to the fact that the majority of Sub-Saharan African coffee farmers are small-scale producers, many of them with low productivity and production levels compared to other developing regions such as Latin America (see ICO 2014b). Reasons for the low productivity are manifold and include over-aged, unproductive coffee trees, limited adoption of agronomic practices, insufficient or ineffective farmer organization, unfavorable land distribution arrangements and a lack of (affordable and accessible) financial services which would help farmers invest into agricultural inputs and equipment (see Hazell 2011; Jayne et al. 2010).

Low productivity levels propel poverty, limit the profitability of coffee farming, discourage investments into production systems and, hence, prevent farmers from taking on a more business-oriented approach. As a self-propelling dilemma, low productivity thus weakens the business case of both the coffee farming itself and intra-supply-chain support to small-scale producers by agricultural input suppliers, traders, processors and buyers, which in Africa remains grossly dependent on external funding.

A preliminary report of a survey conducted in 2013 by FinScope measuring the demand for and access to financial services in Tanzania found that the coverage of formal financial services is still only marginal (with only 14 per cent of the population using formal bank products) and that many, especially those living in rural areas, remain excluded (FinScope 2013: 13). These findings are also confirmed by other surveys which indicate that the vast majority of smallholder farmers in Tanzania are clearly lacking access to financial services (AgFIMS 2011: 91-93). Tanzania remains among the countries in Sub-Saharan Africa with the lowest level of access to the formal financial sector. As a result, those in need of credit products vastly resort to the informal sector in order to gain access to loans.

Tanzania's coffee sector and its small-scale producers show the same evidence of fractional financial inclusion. A baseline survey conducted in late 2012 within the scope of the Coffee Partnership for Tanzania, a development project in Tanzania's coffee sector implemented between 2012 and 2016, found that only 84 (five per cent) out of the 1690 interviewed coffee producing households were using any kind of loan product at the time of the survey. The report further suggests that only 18 per cent of these loans have been provided by formal financial service providers while more than 40 per cent of the 84 prevalent credit arrangements originated from informal credit sources, most notably SACCOs and rent-seeking local money lenders (CPT 2012).

A study conducted by the consultancy firm *Dalberg* in collaboration with the *Initiative for Smallholder Finance* in 2013 finds that the need for input finance, trade and equipment finance for producer groups in Tanzania amounts to about 270 million USD out of which an estimated 140 million USD remain unmet, while most of this finance gap (about 75 per cent) refers to the smallholder level primarily for the provision of inputs (Dalberg 2013: 22).

Tanzania's smallholder farmers have a longstanding coffee growing tradition and the sector is shaped by a distinct cooperative movement which has undergone various transformations in the past and currently finds itself under considerable stress in a competitive, privatized coffee market. These characteristics coupled with Tanzania's premature level of (formal) financial inclusion, an increasing interest by the private sector to invest in the country's coffee sector along with new opportunities and interest by formal financial institution to engage in financing the coffee sector and to link small-scale producers to financial services through innovative models such as warehouse receipt system financing, agricultural value chain financing and branchless banking offer an interesting and very dynamic environment to conduct research on smallholder agricultural finance, to analyze recent developments and to replicate learnings and best practice (CPT 2012).

On this background, the overall rationale of the field study was to analyze the demand for and abundance of financial services for small-scale coffee growers – taking both potential suppliers (especially formal financial institutions such as banks and microfinance institutions) and designated recipients of financial services (namely small-scale coffee producers) into account. In accordance with this paper’s research question, the envisioned goal was to thoroughly detect the existing financial services, most of all loan products, offered to smallholder coffee farmers and the prevalent provision models, and to identify major challenges, obstacles and best practices of the extension of agricultural credit to coffee producing households in some of Tanzania’s main coffee regions. Given that promotion of organizational development and aggregation of smallholder farmers into producer organizations or cooperatives is frequently discussed as a major bottleneck (Carroll et al. 2012), focus was laid on the role of and challenges associated with producer groups and their role as financial intermediaries in promoting financial inclusion.

## 6.2. The Tanzanian coffee sector

Agriculture is the backbone of the Tanzanian economy. Coffee is one of Tanzania’s main export commodities (after gold and tobacco), contributing about 20 per cent of its foreign exchange (Dalberg 2013: 22). With a total production of about 1.1 million 60 kilogram bags (ICO 2014b) coffee exports generated 183 million USD which accounted for about 5 to 6 per cent of Tanzania’s total export income in 2012.<sup>13</sup> With around 60,000 tons of coffee, Tanzania provides about 0.6 per cent of the global coffee production and retains its position as Africa’s third largest coffee producer (Rabobank International 2014: 1). While there is a clear ambition, as manifested in a strategy by the Tanzanian coffee sector’s *Task Force Committee* to double the amount of coffee exported by 2021 (TFC 2012: 1), and potential to increase the countries coffee production, actual growth still has to materialize: overall coffee production has stagnated over the last decades (at a level of about 50,000 tons per annum). The vast majority of Tanzania’s coffee – about 90 to 95 per cent – is produced by about 450,000 coffee farming households.<sup>14</sup> There is only a very limited number of larger farm estates, most of them in the North. Many of the Tanzanian small-scale coffee producers suffer from low levels of productivity, limited education, skills and knowledge as well as insufficient access to farm inputs and financial services (ibid: 14; 20ff). In addition, politically-driven interventions in the sector, an insecure regulatory environment, a lack of investment in the local coffee value chain, land pressure and first repercussions of climate change have undermined and continue to impair the further development of the Tanzanian coffee sector (Rabobank International 2014: 2).

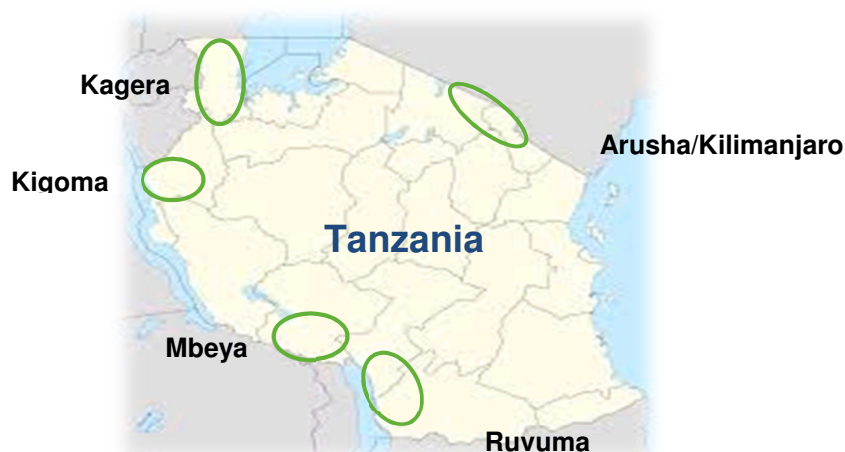
Tanzania’s coffee – both Arabica and increasingly important Robusta coffee beans – is largely produced in four major basins: Mbeya region, Mbinga district in the Ruvuma region, Arusha and Kilimanjaro regions in the North and Kagera region which is the major production area for Robusta coffee (see *Figure 6-1*).

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<sup>13</sup> Own calculations based on *Tanzanian Ministry of Finance* (2013: 44).

<sup>14</sup> Assuming an average household size of 6 members, coffee cultivation indirectly provides livelihoods for about 2.5 million Tanzanians.

Figure 6-1 – Main coffee growing regions in Tanzania (Own illustration)



While produced volumes decreased in some of the older coffee producing regions such as Arusha and Kilimanjaro, production of both Arabica in Tanzania's Southern Highlands (Mbeya and Ruvuma regions) and Robusta in the Kagera region has picked up in recent years. Mild arabicas are wet processed – either in large central wet-processing units (about 30 per cent of all Arabica beans processed) or home-processed at farm-level with hand pulpers (about 70 per cent of all coffee processed) – while robustas are dry-processed. In spite of recent efforts to increase domestic consumption, almost all of Tanzania's coffee production is exported, mainly to Europe, the United States and Japan (Baffes 2005: 1; Dalberg 2013; TCB 2014). Next to the cooperative structures, major institutions engaging with smallholder farmers include coffee trading companies, exporters and coffee roasters such as *Ecom Agroindustrial Ltd./Tutunze Kahawa Ltd.*, *Coffee Management Services Ltd.*, *the Hanns R. Neumann Stiftung* associated with the *Neumann Kaffee Gruppe*, *Volcafé*, *Taylor Winch Ltd.*, *Louis Dreyfus* and *Tembo Coffee Company Ltd.*, *Olam Tanzania Ltd.*, *Tchibo* plus a considerable number of smaller local organizations.

### 6.2.1. A brief history of Tanzania's coffee industry

Coffee might have been introduced to Tanzania from Ethiopia as early as in the 16<sup>th</sup> century. The first coffee cooperative was formed in the Kilimanjaro region in 1925 by Tanzanian coffee producers to market coffee directly to the United Kingdom and thus bypass Asian middlemen, later to become one of Africa's oldest cooperatives, the *Kilimanjaro Native Cooperative Union* (hereinafter KNCU). The first cooperative law was passed by the (at that time) colonial government to set the formation and monitoring of cooperatives under its control. Over the following decades, cooperatives grew in size and number. In 1961, when Tanzania's mainland Tanganyika gained independence, 857 agricultural cooperatives were registered nationwide (Nchimbi 1991: 160).

Following the country's independence in 1961, the Tanzanian government introduced a tripartite marketing system for all agricultural commodities. Within that model, national marketing boards were introduced to regulate pricing, storage, transportation and marketing of products while cooperative unions and their associated primary

societies purchased the crops from primary producers to sell them to the respective marketing board (Ponte 2002: 41). Although membership in cooperatives – formally – was voluntarily, farmers practically had no alternative since private buyers of agricultural commodities were not part of the state-controlled marketing system and cooperatives enjoyed a marketing monopoly.

The *Arusha Declaration* in 1967 manifested the *Ujamaa-Policy* as a national strategy which aimed to promote development through autonomy and socialism. As a result, key sectors of the Tanzanian economy were nationalized and cooperatives were subsequently considered as socialist institutions and vehicles of improving well-being of all farmers mainly through an increase of agricultural production. For that purpose, cooperatives were further expanded, also into areas that had no cooperative experience, culture, or even need. At the same time, a process of villagization, the replacement of smaller rural settlements by larger *Ujamaa-villages*, was implemented by the government affecting millions of Tanzanians and forcing them to move. In 1975, the *Ujamaa-villages* were institutionalized by law as multifunctional cooperatives with compulsory membership for all village members. The villages took over all post-harvest functions formerly managed by the voluntary cooperatives and the associated primary societies which both were officially dissolved in May 1976 (van Cranenburgh 1990: 140ff). The newly established system was inefficient and performed poorly in substituting the functions of the former cooperatives forcing the government – also reacting to increasing international pressure – to reinstate the tripartite cooperative system in 1984 (preceded by the *Cooperative Societies Act* in 1982) and to hand all functions back to the cooperative union and primary societies.

The *Tanzania Coffee Marketing Board* kept its monopoly in selling coffee and all its regulatory functions. Within the marketing model, producers delivered coffee to primary societies and received an initial payment (based on a previously announced fixed price by the Coffee Board). After curing, milling and grading of the coffee at a factory operated by the cooperative union, the coffee was delivered to the Tanzania Coffee Marketing Board, for purchase at auction by private exporters (Baffes 2005: 1). After the sale of the coffee at the auction, the Coffee Board deducted the handling fees and the revenue was sent to the cooperative unions, which deducted their own processing costs – e.g. for extension services, input pre-financing and operational costs – and sent the remaining amount to the primary societies. The primary societies, after making further deductions for their own costs of operation, made the final payments to farmers to cover the difference between the initial payments and the auction realizations. In that marketing system, it took at least a year for farmers to receive the second payment (Winter-Nelson and Temu 2002: 563).

Even after 1984, the government retained its control of the cooperative movement and viewed it as a vehicle to implement its policies. Although membership in cooperatives was officially voluntary, political pressure and a lack of alternative marketing channels clearly undermined the voluntary character of the cooperative structure. Partly as a result of substantial mismanagement prior to 1984, many of the cooperative unions had severe financial difficulties and insufficient capital to pay their members in advance before the actual revenues could be generated. Since prices were set by the Coffee Marketing Board (not factoring in inflation), the cooperative unions were exposed to a



high level of risk. Many unions could not make final payments to their members and most even incurred losses in the late 1980s and early 1990s as revenues from coffee could not compensate prior costs during the coffee season (Baffes 2005: 1-4).

In 1991, responding to the major financial difficulties of the cooperative unions and international pressure, the government passed the *Cooperatives Act* which is still operative to date. It formally liberalized the cooperative movement by recognizing cooperatives as private institutions owned and managed by the members through voluntary membership (Tallontire 1999: 186). However, farmers' perception of cooperatives as state-owned and parental organizations is still prevalent and cooperative structures in Tanzania remain subject to political interference (ibid: 193). There are many instances of cooperative unions which try to reintegrate producer groups which decided to detach from unions, e.g. by exerting political pressure (Cooksey 2003: 76).

Starting in 1992, the Tanzanian coffee sector has been extensively restructured. Comprehensive reforms in that year liberalized pricing policies of cooperatives, privatized markets for agricultural inputs and allowed exporters of coffee to retain their earnings. In the 1994/95 coffee season, private buyers were licensed to purchase and process coffee (the first time after decades of state-controlled marketing through cooperatives). Within the new coffee sector setup, the Tanzania Coffee Board (hereinafter TCB) has the role of a marketing agent and is in charge of grading coffee as well as regulating the coffee sector (Baffes 2005). Although Tanzania's coffee sector has been largely privatized, the increasing penetration of the coffee market by foreign actors, such as international traders and exporters, is partially being perceived within political spheres as a constraint to domestic ownership and economic development which continues to inspire efforts by decision-makers to protect local interests and causes a somewhat unstable regulatory environment (Cooksey 2003; Ponte 2004). The key stakeholders and decision makers in the Tanzanian coffee sector are presented in *Annex C*.

### **6.2.2. Patterns of coffee producer organization**

Tanzania's 450,000 smallholder coffee farmers show different patterns and levels of organization. For many of the small-scale producers present organizational structures are still shaped by the country's longstanding cooperative movement. Most of the farmers especially those in the Northern regions and Western regions are organized in a three partite cooperative structure which consists of *rural primary cooperative societies* (hereinafter RPCSs) at the primary level, *secondary cooperative societies* and the *cooperative union* as an umbrella organization. A considerable number of small-scale coffee producers in Tanzania, most of all in the Southern regions of Mbeya and Mbinga, are organized as independent *producer groups/organizations* operating outside the cooperative union structures. In some cases, these groups are organized around central coffee processing units, either coffee trader- or farmer group-owned, which serve as an aggregation point for coffee collections and wet-processing. It is important to note that a considerable share of Tanzania's smallholder coffee farmers is unorganized, operating on an individual basis and selling the produced coffee to

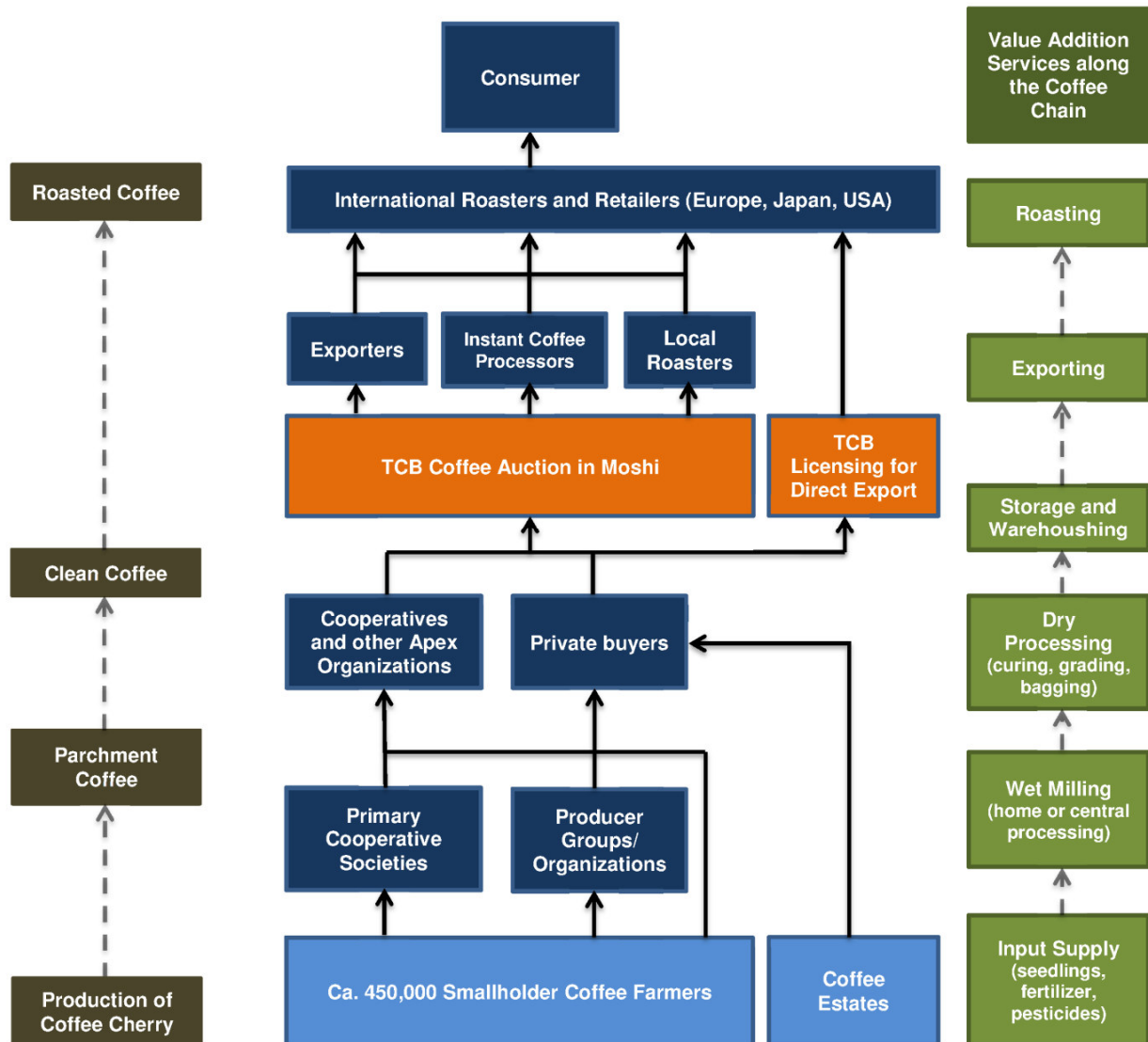
private buyers or other aggregators. For a more detailed overview of key organizational patterns in the Tanzanian coffee sector refer to *Annex D*.

### **6.2.3. The coffee marketing system in Tanzania**

With some few exemptions, all coffee produced in Tanzania for export must be marketed through a coffee auction, a statutory body managed and run by the Tanzania Coffee Board (see *Figure 6-2*). Coffee auctions are held every week during the coffee harvesting season. Licensed exporters purchase coffee from individual farmers, farmer groups, cooperatives or private buyers. For producers of premium grade and specialty coffee, there is a direct export window which bypasses the auction system with the rationale to build long-term business relationships with buyers and roasters of coffee (TCB 2014). In order to market coffee at the Moshi auction coffee producer groups need to be formally registered as any of the following entities: (1) as a *business entity* at the Business Registrations and Licensing Agency (BRELA); (2) as a *Rural Primary Cooperative Society* at the Registrar of Cooperatives at the Ministry of Agriculture or (3) as a *Community Based Organization (CBO)* at the Ministry of Home Affairs. As will be shown in the remainder of this thesis, registration is also a major criterion for producer groups to gain access to formal financial services.

A recent change of the coffee sector regulation, officially released at Tanzania's National Coffee Conference in May 2014, foresees that only volumes of at least 50 metric tons (MT) of coffee can be auctioned at the Moshi exchange which means that all producer groups with a volume below 50 metric tons need to either collect coffee from other farmers or groups or sell their production to another aggregator.

Figure 6-2 – The Tanzanian coffee value chain (Own illustration)



### 6.3. Research methodology of the field study

The overall rationale of the field study was to reconstruct, understand and explain the full complexity of the topic of agricultural finance for smallholder coffee farmers through qualitative primary data and anecdotal evidence generated through face-to-face interviews with representatives of financial institutions and coffee small-scale producers in Tanzania. Within the scope of the study, 26 semi-standardized interviews with small-scale coffee producers have been conducted in the regions of Mbeya and Arusha (demand side) and 30 semi-structured expert interviews with representatives of financial institutions in Mbeya, Moshi, Arusha, Usa River and Dar es Salaam were held.<sup>15</sup> All interviews have been conducted between July 9<sup>th</sup> and September 5<sup>th</sup>, 2013. In the light of the complexity of the topic, face-to-face interviews were chosen as the most effective method of collecting the data since open questions during the interviews

<sup>15</sup> Methodology and interview technique based on Gläser and Laudel (2010).

could be easily addressed. The following section provides more detailed information on the selection of interview partners, the execution of the interviews and the analysis of the generated information.

### ***Interviews with small-scale coffee producers***

On the demand side, the field study has been designed to include sub-groups of farmers that differ in terms of geographical location (Mbeya and Arusha region), their role within the producer organization (treasurer, chairman, secretary vs. no particular position in the PO) and their level of experience with loan schemes (no prior usage of loan schemes vs. usage and experience with loan schemes).

The sample of interviewed farmers has neither been randomly selected nor to represent the overall CPT farmer population or the entirety of Tanzanian smallholder coffee farmers but to provide *indicative* information based on both quantitative and qualitative primary data. Farmers interviewed have all been associated with and supported by one single organization, namely HRNS, and were based in two out of five major coffee producing regions in Tanzania. Nearly all of the farmers interviewed were members in a producer organization (and thus usually had access to a comprehensive set of services provided by their group), while only 56 per cent of CPT supported farmers reported membership in a producer organization in late 2012 and even fewer Tanzanian coffee farmers are organized outside the CPT project (CPT 2012). In summary, interview partners have been selected according to the following selection criteria which should be taken into consideration when drawing conclusions based on this study. Furthermore, the results presented in the remainder of this analysis must be considered with caution and caveats with regard to the representativeness of the findings apply.

- Availability of field staff of HRNS and logistical accessibility of the interview partners in the field (coffee farmers were frequently interviewed during farmer group meetings when they were not occupied with field work).
- To ensure the validity of the data, all interviewed farmers were literate, while a considerable share of Tanzanian smallholder farmers is illiterate.
- It was ensured that both farmers who are using loans schemes and those without access to credit facilities are interviewed, but the share of the two groups in the interview sample does not represent the actual ratio.
- A considerable over-proportional share (slightly more than 50 per cent) of the farmers interviewed had a special position in their producer organization (namely chairman, treasurer or secretary). It was expected that these farmers would be in a better position to comment on the loan application process with banks. At the same time these farmers can be expected to perform better in terms of coffee yield and income than other farmers.

The interviews were based on a printed questionnaire translated into Kiswahili. The farmers were interviewed in their homes, at their farms or at a central meeting point (e.g. farmer group buildings). The execution of the interviews with smallholder coffee farmers was supported – logistically and linguistically – by employees of HRNS, namely local Tanzanian agronomists engaging with and training smallholder coffee

farmers on a regular basis. In the survey, each interviewee was regarded as a coffee producer, if he considered the cultivation of coffee as his or her main business activity and source of income. As will be presented in more detail in *Chapter 7*, all of the interviewees complied with this criterion. The interviews focused on the following topics with the primary goal of understanding smallholder coffee farmers' business situation and the demand for financial services:

- Biographical data
- Information on the general business situation of producers (income from coffee, marketing, access to services related to coffee production, risks etc.)
- Farm level specifics (land ownership, plot size, crops etc.)
- Credit schemes and other financial services (prior experience, demand for and benefit of the different loan products, challenges etc.)
- Farmer organization (role of producer organizations and cooperatives in providing access to loans and other services)

*Annex B* provides a full list of smallholder coffee farmers interviewed in the scope of this research. The interview questionnaires have been quantitatively and qualitatively analyzed using *Microsoft Excel*.

### ***Interviews with representatives of financial institutions***

Interview partners who represented financial institutions have been chosen to represent the entirety of Tanzania's financial sector, including the full range from fully-commercial formal financial institutions to semi-formal and informal financial institutions while a clear focus was on commercial banks. Interviewees were also chosen based on the following criteria:

- Availability of the financial institution and willingness to provide information in an interview.
- Anticipated relevance of the respective financial institution in providing financial services to smallholder coffee farmers (based on prior research of lending to the coffee sector).
- Interview partners' anticipated ability and expertise to provide relevant information.<sup>16</sup>
- Logistical considerations.

Although the sample was selected to represent a broad range of different (potential) suppliers, the research design does not make any claim to be fully comprehensive or representative by any means. Here too, the rationale of the chosen sample was to provide *indicative* information on prospects and challenges associated with provision of financial services to small-scale coffee farmers in Tanzania and to gain a critical amount of information on the current and anticipated future supply of those services.

Interview partners representing financial institutions – depending on availability of staff at the time of the interview – were either portfolio managers for agribusiness/agriculture, loan officers or branch managers. In some cases, the

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<sup>16</sup> Interview partners were chosen based on the criteria set by *Gorden* (1975: 196-197).

interviews comprised multiple interview partners per financial institutions (group interviews). The interviews have been held as expert interviews<sup>17</sup> and focused on the following topics:

- Financial products
- Loan products
- Loan assessment
- Loan monitoring
- Risk management
- Prior experience and challenges in providing access to coffee small-scale producers

These interviews have been recorded with a recording device, summarized in results protocols directly after the interview and 15 out of 36 interviews have been chosen for transcription (using the software application *f4*) to assess the entirety of the data and to avoid any loss of information through less rigorous approaches.<sup>18</sup> The 15 interviews selected for transcription were chosen after an initial screening of the interviews in terms of their relevance for the analysis of the research question. Please see a list of all interviews (including those transcribed) in *Annex A* to this thesis. The transcripts have been analyzed through qualitative content analysis using the *MaxQDA* software application. The analysis of the interviews has been carried out based on an open and flexible category system which helped to structure the information into different cross-cutting topics which emerged during the interviews and were of relevance for the analysis of the research question of this paper. The relevant information has been aggregated, supplemented and further processed, thereby solidifying the analysis. All 21 interviews which have not been transcribed did provide background information on the financial sector's perception and its lending to the coffee sector. Most notably, those interviews gave important insights into the challenges faced by the commercial banking sector in offering financial services to smallholder coffee farmers.

## 7. The need for smallholder agricultural finance in Tanzania's coffee sector

Interviews with coffee small-scale producers have been conducted to receive indicative information on smallholder coffee farmers' overall business situation, their businesses' exposure to risks as well as the demand for and access to financial services. All interviewees considered coffee farming their main business activity and source of income while only 15 out of 26 farmers derived more than 50 per cent of their household income from coffee in the season prior to the survey. The following two

<sup>17</sup> According to the recommendations on expert interviews by *Gläser* and *Laudel* (2010: 111ff, 172ff).

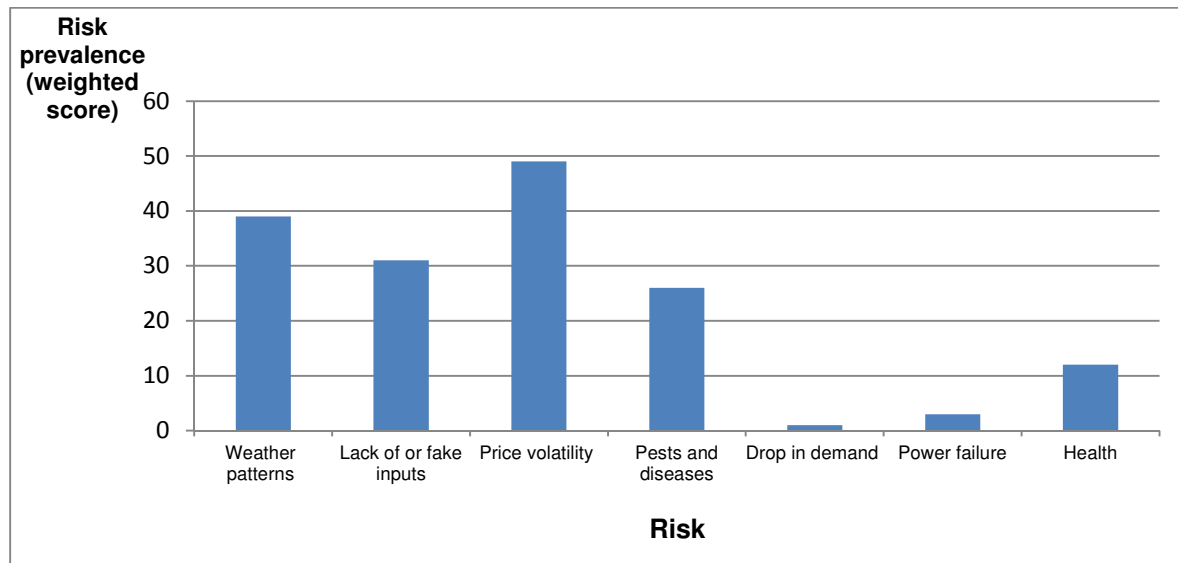
<sup>18</sup> According to the recommendations on expert interviews by *Gläser* and *Laudel* (2010: 194).

sections present some of the key findings and cross-cutting themes which emerged during the interviews with small-scale coffee producers.<sup>19</sup>

### 7.1. The situation of smallholder coffee farmers in Tanzania

The interviewed farmers were asked to name the three biggest risks that their businesses are exposed to and to prioritize them. Using a weighted score<sup>20</sup> the major risks within the interview regions at hand have been identified and are presented in *Figure 7-1*.

*Figure 7-1 – Risk exposure of smallholders' coffee businesses*



While there are considerable variations in risk exposure in the different coffee cultivation regions, overall 'market and input price fluctuations' are considered to be the biggest risk (score of 49), followed by 'weather risks' (score of 39), 'lack of, delayed access to or fake inputs' (score of 31) and 'pest and diseases' (score of 26). In the Mbeya Rural and the Mbozi districts in Southern Tanzania, exposure to weather conditions (especially drought) is perceived as the most severe risk, whereas farmers operating in the humid climate of Ileje district seem to struggle more with market price fluctuation, insufficient access to inputs and coffee pest and diseases. Unanticipated drops of coffee prices cause severe problems for small-scale producers who are in some cases not in a position to recover the coffee production costs and incur losses which further disincentives farmers to invest into their production systems. Strikingly, interviews in the North indicate that 'lack of access to or fake inputs' is the most severe risk (score of 24), closely followed by 'market price fluctuations' (score of 17) and 'pests and diseases' (score of seven) whereas weather risks seem to play a comparatively negligible role in the North.

<sup>19</sup> All results presented in this section should be seen against a possible selection bias of the interview sample (see *Section 6.3.*). See *Annex B* for a full list of the interviewed smallholder coffee farmers.

<sup>20</sup> Scoring has been done using the following calculation: 1<sup>st</sup> risk = three points; 2<sup>nd</sup> risk = two points; 3<sup>rd</sup> risk = one point.

To mitigate the before mentioned risks, farmers often diversify their income sources, e.g. by resorting to mixed farming systems intercropping coffee mostly with banana (North) or maize and beans (South) or by establishing complementary income sources (such as livestock). Overall, farmers seem to be highly exposed to market price volatility – 16 out of the total 26 surveyed farmers (eight out of ten farmers in the Arusha region) state that they have nothing in place to protect them against fluctuating prices while storage facilities or multiple buyers of the coffee seem to offer some limited potential for mitigation in Mbeya.

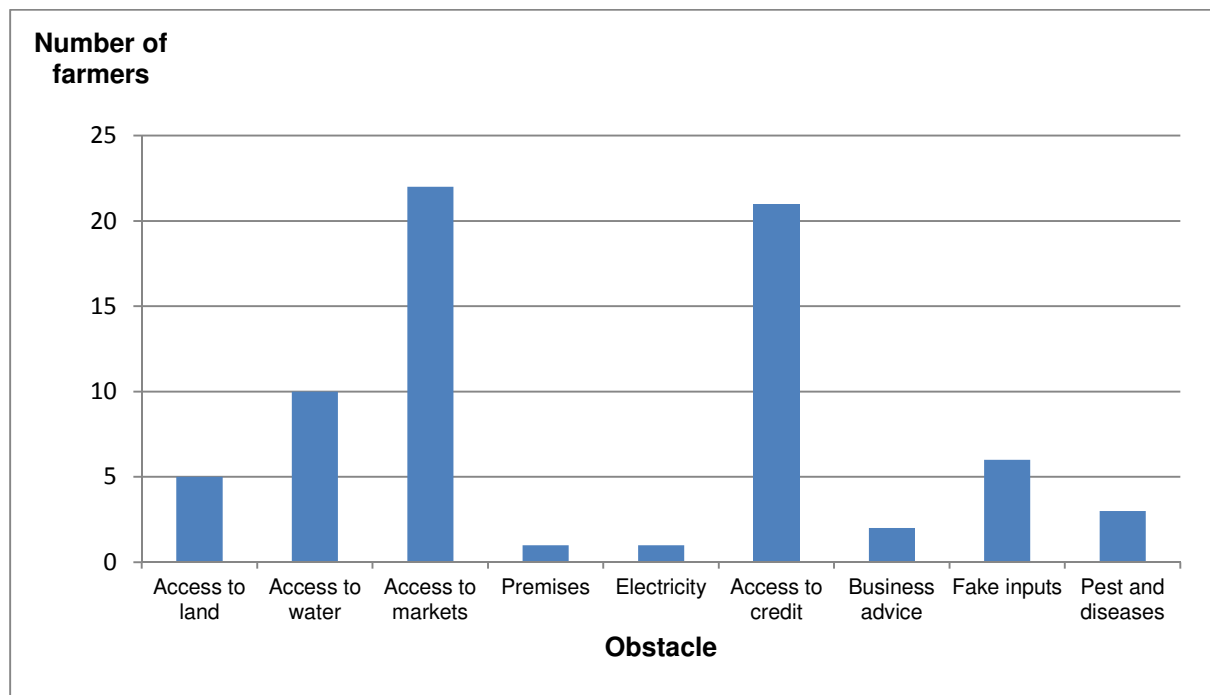
About 35 per cent of the farmers (nine out of 26) own a bank account. Yet, in general, the overall perception among them is that there is no need and benefit for their households from running bank accounts as the cash-income from coffee is too low. If there are cash surpluses, farmers mostly use other strategies such as saving in livestock, depositing money at SACCO and Village Community Bank (VICOBA) accounts, simply store the money at a secret place at home or use the cashless money service Vodafone M-Pesa which sometimes serves as a substitute for a traditional bank account.

Financial literacy, meaning farmers' knowledge of basic business skills and their awareness of financial institutions and (loan) products, in the respective regions differs significantly. Financial literacy clearly corresponds with prior capacity building in basic business skills, record keeping and with past experience with financial services in particular. While farmers usually state that they keep comprehensive records of expenses and sales, both their overall knowledge of the financial sector and their awareness of financial institutions and offered services are limited. As a result, farmers have sometimes been unable to make sophisticated statements on the comparative benefit of different financial institutions and financial products. They often lack knowledge of the different financial institutions and their products. Most farmers are only aware of CRDB and/or NMB. Farmers who have not borrowed for the purpose of their business usually state that either the costs/interest rates incurring for loans are too high and cannot be covered by their businesses or that they simply do not know where to borrow from.

The interviewed farmers' perceptions of the biggest obstacles of growing their coffee businesses are presented in *Figure 7-2*. 'Access to markets' (mentioned by 22 out of 26 farmers) and 'access to credit, loans and financial support' (21 mentions) rank among the decisive hindering factors to expand the production of coffee. While 'access to water' seems to be a severe obstacle in Mbeya (in particular in the Mbozi and Mbeya Rural districts), farmers' coffee businesses in the Arusha region seem to be hampered considerably by a lack of or the prevalence of counterfeit inputs.



Figure 7-2 – Obstacles to growing smallholders' coffee businesses



Within the sample of interviewed farmers yearly coffee net-incomes differ significantly between and within the regions. While coffee-related incomes in the Arusha region seem to be rather low, ranging from 300 to 560 USD, earnings from coffee production in the Mbeya region are larger on average ranging from less than 300 to up to 3,000 USD.<sup>21</sup>

## 7.2. The demand for smallholder agricultural credit

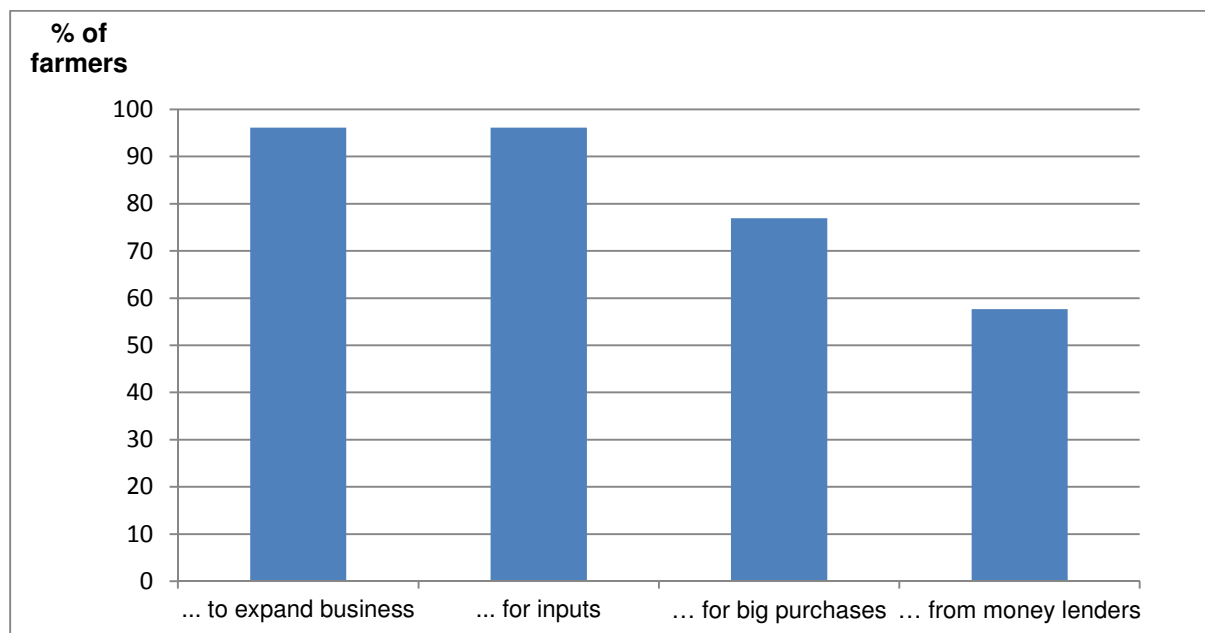
Unsurprisingly, given the perceived constraints on business expansion, the demand for credit seems to be considerable. 25 out of 26 interviewees state that they would borrow money to expand their business. The same amount of farmers (25) would take up a credit to purchase farm inputs and 20 farmers would also borrow for big purchases and investments (such as land acquisition or technical equipment). 15 farmers would also consider borrowing from local money lenders (see *Figure 7-3*). The farmers' willingness to take risks seems to be substantial. 21 out of 26 interviewees agreed that 'in business, it is necessary to take calculated risks'.

18 out of 26 farmers stated that they currently needed a loan at the time of the survey. While – according to the interviewees – most of these are required for the purpose of financing inputs for coffee production, there is also a considerable demand of finance for other non-coffee agricultural business activities (especially in the North). Only four out of 26 farmers answered that they currently need a loan for technical equipment. 20 out of 26 farmers had plans to take up a loan at some point in the future and 14 out of these 20 farmers would also do so if the price for coffee would drop. Market price fluctuation, though a big challenge in general, seemed to have a limited influence on

<sup>21</sup> Data validity caveats with regard to income-related data apply due to inaccuracy of farmer recall during the interviews.

farmers' decision to take up loans. The predominant perception was that with increasing volumes and quality of coffee (both facilitated by the availability of inputs) additional income could be generated, even with steadily decreasing market prices.

Figure 7-3 – Percentage of farmers who would borrow



All of the seven loans in the Mbeya region (most of them in Mbeya Rural district) were input loan schemes nearly all of which (six) were related to coffee production and provided by commercial banks. In the North, the picture differs significantly: all of the loans to farmers in the Arusha region were disbursed by informal institutions such as either SACCOs or VICOBA and none of these loans were related to coffee production but either to social expenses or other non-coffee agricultural businesses. Farmers' satisfaction with existing loan schemes was mostly very high but this should be seen against the backdrop of a low level of supply side information and limited awareness of alternative loan schemes. Complaints were usually related to the high costs incurring for loans and the administrative effort required (not only interest rates but also loan application process and required follow ups) and untimely loan disbursements of funds. While informal financial institutions lack sufficient funds and are constrained in terms of capital availability, farmers were discontent with the mostly bureaucratic processes of the formal banking sector (especially commercial banks) that make some of them turn to SACCOs or VICOBA instead.

Overall, the demand for loan products, especially for pre-harvest input loan schemes, seems to be substantial. Input loans might not only create access to inputs in the first place, but the quality of inputs (fertilizers and herbicides) provided by the trusted input suppliers is usually higher than low quality or counterfeit inputs that farmers frequently report to suffer from (especially in the North). In summary, the interviews with small-scale coffee producers clearly indicate that the need for the pre-financing of coffee production related activities but also coffee marketing activities in Tanzania is substantial. These results align with the findings of various large-scale quantitative

studies which diagnose a finance gap in the Tanzanian coffee sector (see Dalberg 2013).

## 8. The availability of smallholder agricultural finance in Tanzania

The following chapter – based on the interviews with representatives of financial institutions<sup>22</sup> – explores the prevalence, scope and models of semi-formal and formal financial institutions' lending to smallholder coffee farmers in Tanzania. The paragraphs below lay out the rationale of financial institutions to provide (or not to provide) credit schemes for small-scale coffee producers, the design and prevalence of pre- and post-harvest loan schemes as well as (perceived) challenges and best practices of offering agricultural credit to small-scale coffee producers.

### 8.1. Overview of financial market dynamics and lending to the coffee sector

Following Tanganyika's (today's Tanzania's mainland) independence in 1961, the Bank of Tanzania was formed in 1965 as the country's first central bank thereby succeeding the East African Currency Board which had been in charge of the management of monetary issues in East Africa from 1919 shortly after the, at that time, German colony of Tanganyika was taken over by the United Kingdom. With the nationalization of all private banks operating in Tanzania which came to effect with the enactment of the Arusha Declaration in 1967, the Bank of Tanzania in effect lost its control over monetary policy issues which was then fully exercised by the government of Tanzania through directives and plans (Bank of Tanzania 2011: 1ff). In 1978, through an amendment of the Bank of Tanzania Act of 1965, the Bank of Tanzania regained some of its original authorities and was empowered to execute the supervision of financial institutions in the country.

Starting in the 1980s, Tanzania's financial sector started to undergo a substantial transformation from a state-owned and politically driven system to a mainly privatized financial sector. Former government interventions in managing and implementing (rural) financial systems with subsidized loan programs and administratively fixed interest rates in disregard of actual creditworthiness of beneficiaries had resulted in high inefficiency, market distortion, poor performance and undermined the sustainability of financial institutions leading to a withdrawal of the government and other donors involved in the financial sector (IFC 2011: 19ff; Nord et al. 2009). With the privatization of the Tanzanian financial sector, manifested in the 1991 Banking and Financial Institutions Act which liberalized interest rates and legalized – both local and foreign – private financial institutions starting in 1998, Tanzania's financial sector grew rapidly with numerous (international) commercial banks entering the sector and thus

<sup>22</sup> See *Annex A* for a full list of the interviewed representatives of financial institutions.

creating a financial market in the economy (Nord et al. 2009). As per September 2014, according to the Bank of Tanzania, the financial sector comprised 34 approved commercial banks, 18 further non-commercial bank financial institutions (e.g. community banks) and several hundred SACCOs (Bank of Tanzania 2014a, b).

As will be shown below, in spite of Tanzania's rather recent privatization of the financial sector and the considerable challenges associated with lending to small-scale, low-income coffee producers as laid out in *Chapter 4*, there is a certain, yet moderate level of lending by the formal financial sector to coffee producing smallholder farmers in the surveyed regions. Besides semi-formal institutions, larger and commercial banks have developed mechanisms through which the typical challenges of smallholder agricultural finance such as high transaction costs, immanent risks of default and insufficient means of collateralization can be addressed in such a way that lending becomes a successful business if certain requirements are met. After the rather recent privatization of the financial sector, Tanzania remains a new market for banks and as finance is relatively recent and competition among financial institutions still rather limited in most of the country's coffee producing regions, high interest rates can be charged resulting in a high return on investment. Banks are also confronted with stagnating and increasingly regulated markets in the developed world and consider the financial markets of the developing world as a means of continuing growth.

Although many commercial financial institutions, especially the larger ones, consider agriculture as a high-risk industry, the Tanzanian coffee sector is credited a considerable level of opportunity. Coffee farmers are particularly attractive as they have a high proportion of cash crops resulting in more ready income to save or service credit. In addition, the coffee crop is quite demanding in terms of investments required during production and processing – e.g. for chemical inputs (mineral fertilizers, herbicides and pesticides), rejuvenation of old coffee trees, processing facilities (central processing units or smaller hand pulpers for home-processing) and in some cases additional equipment such as irrigation schemes – and marketing, for pre-financing of coffee collections, all of which creates a substantial demand for capital of a highly undercapitalized sector at the smallholder level. In addition to this, Tanzania's coffee marketing system implies that buyers and aggregators of coffee, upon purchase of coffee from smallholder farmers, provide de-facto pre-financing to small-scale producers through the provision of advanced payments before the coffee is actually marketed to and paid by the ultimate buyer. This helps farmers meet their day-to-day expenses. Since coffee as a cash crop has the potential to lift smallholders out of poverty, the sector is also supported through various philanthropic foundations which engage with different financial institutions (sometimes as their shareholders) and demand banks to engage with borrowers who hold a high developmental impact.

Yet, there is only a limited number of specialized financial institutions which engage in financing small-scale coffee producers and which operate specifically designed loan products for this group while many other commercial financiers are shying away from providing credit to the coffee sector and agriculture in general, especially to smallholder farmers at the upstream production level. At the time of the survey, suppliers of financial services to the Tanzanian coffee sector included *National Microfinance Bank Ltd.* (NMB), *CRDB Bank Plc Ltd.* (CRDB), *National Bank of Commerce Ltd.* (NBC),

*Root Capital, Equity for Tanzania (EFTA), Uchumi Commercial Bank Ltd. (UCB), Kilimanjaro Cooperative Bank Ltd. (KCBL), Meru Community Bank (MECOB), FINCA Tanzania (FINCA)* and semi- or informal institutions such as numerous Savings and Credit Cooperatives (SACCOs) or local money lenders. The commitment of these different formal financial service providers differs substantially. These formal financial institutions, their track record of providing financial services to smallholder coffee producers, loan portfolios and products are presented in *Annex E. Figure 8-1* provides an overview of the scope and type of their lending to the coffee sector.

*Figure 8-1 – Overview of financial institutions engaging in coffee sector financing*

Name of financial institution	Type of financial institution	Regions of operation	Gross lending portfolio in 2013 (in USD)	Gross lending to the coffee sector in 2013 (in USD)	Type of loans offered	Lending to
CRDB	Commercial Bank	All across Tanzania	1.25 bn	110 mio	pre-harvest, post-harvest and equipment finance	smallholder farmer groups and cooperative unions (KNCU)
NMB	Commercial Bank	All across Tanzania	1 bn	125 mio	pre-harvest, post-harvest and equipment finance	smallholder farmer groups
NBC	Commercial Bank	All across Tanzania	440 mio	not known	working capital finance	large coffee aggregators and processors
EXIM	Commercial Bank	All across Tanzania	300 mio	not known	working capital finance	cooperative unions (AKSCG)
TIB	Development Finance Institution	All across Tanzania	150 mio	not known	pre-harvest and equipment finance	individual medium-to large-scale farmers
Root Capital	Social Investment Fund	All across Tanzania	not known	not known	pre-harvest, post-harvest and equipment finance	smallholder farmer groups
UCB	Commercial Bank	Kilimanjaro	9.5 mio	800,000	pre-harvest, post-harvest and equipment finance	smallholder farmer groups
KCBL	Community Bank	Kilimanjaro	2.5 mio	ca. 940,000	pre-harvest, post-harvest and equipment finance	smallholder farmer groups
EFTA	Equipment Finance Company	Kilimanjaro, Arusha and Mwanza	500,000	marginal	equipment finance	individual medium-scale farmers and smallholder farmer groups
MECOB	Community Bank	Arusha	300,000	marginal	pre-harvest finance	smallholder farmer groups

Looking at Tanzania's overall financial sector and the local commercial banks in particular, it becomes apparent that NMB and CRDB are – by far – the largest commercial financiers of smallholder coffee farmers. Since the coffee sector is usually associated with a high level of opportunity, many of the interviewed local financial institutions expressed a desire to launch products or increase lending to agriculture and potentially to the primary coffee production level.

There is a strong culture for the [coffee] crop itself and a strong culture of working with banks as well. We have coffee clients for the sixth or seventh year now. And we have a much more educated sector than in other crops.

(Carol Nyangaro, NMB, Annex A)

Yet other commercial banks, such as *National Bank of Commerce* (NBC), *EXIM Bank* (EXIM), *Commercial Bank of Africa* (CBA), *Diamond Trust Bank* (DTB), *Kenya Commercial Bank*, *Azania Commercial Bank*, *Stanbic Bank Tanzania* and *African Banking Corporation* have not yet developed loan products specifically designed for smallholder coffee farmers and in some cases signaled an inability to do so due to a lack of commercially viable options. Two of the larger Tanzanian commercial banks – NBC and EXIM – offer working capital loans to large downstream coffee aggregators to finance their coffee purchasing and processing activities but do not offer any direct financial services to smaller coffee producer groups to date as the costs of interacting with and collecting information from individual small-scale producers are considered to be to high.<sup>23</sup>

At the time of the survey, some of the commercial banks had begun to develop plans of providing financial services to smallholder coffee producers. There seemed to be growing interest and even commitment in the sector as many banks have only opened branches in the Mbeya region and as many among them look into opportunities of lending to clients from the agricultural sector (e.g. DTB, FINCA, CBA). In 2013, DTB has published a bank internal paper on possible opportunities of lending to smallholder farmers, NBC established an ‘agriculture department’ at the bank’s head office in Dar es Salaam and CBA had first discussion with the Tanzania Coffee Board (TCB) and Private Agricultural Sector Support (PASS), a financial NGO offering credit guarantees for agricultural loans (see *Annex E*), in Mbeya to explore opportunities of offering financial services to the coffee sector. However, all these initiatives – at the time of the survey – were in their infancy and had an unforeseeable time horizon.

The microfinance institution FINCA provides loan schemes for groups without traditional collateral requirements using group liability mechanisms which (with some modifications) could also be applicable to small-scale coffee farmers. At the time of the survey, FINCA was not offering products with grace periods but loans required repayment on a regular basis which is not compatible with the coffee crop cycle. Yet, in both interviews conducted in the scope of this study, FINCA announced the launch of an agriculture-related loan with grace periods adapted to the respective crop cycles both for input and investment goods to both groups and individuals. Although FINCA focusses on financial services to individuals and groups in urban areas, the organization is committed to address the topic of smallholder agricultural finance and has begun to pilot coffee specific products in 2014.

In the light of many commercial banks’ reluctance or inability to provide smallholder agricultural credit, NMB, CRDB, Root Capital, EFTA, KCBL, UCB and MECOB were the only banks out of the surveyed financial institutions which provided loans specifically designed for smallholder coffee farmers. In Tanzania’s Southern Highlands

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<sup>23</sup> Interview with Christopher L. Mgani, EXIM, see *Annex A*.

(Mbeya and Ruvuma regions), CRDB and NMB have carved out their respective territories and do not face many competitors. In the North, though, competition seems to be a bit higher. Here, four additional financial institutions – KCBL, UCB, EFTA and MECOB – are also directly engaging with small-scale coffee producers. Although these banks are far smaller than the commercial banks and face constraints in terms of available capital, the size of their (still moderate) lending portfolios and geographical outreach, they built up considerable experience and a good reputation in their respective territories and, most notably, these banks are not as reserved to granting pre-harvest input and equipment finance as the larger commercial but are even committed to providing their clients (who are often the major shareholders) the much needed access to these loan facilities.

However, NMB's and CRDB's lending operations make up a very substantial part (presumably between 50 to 75 per cent) of the total financial sector's lending to smallholder coffee producers. Both banks have built up large portfolios and developed longstanding experience with lending to the agricultural sector (especially CRDB) while a major factor of triggering those coffee sector lending activities is the banks' ownership structure which comprises national development agencies (the Danish Development Agency's 30 per cent share of CRDB) or other philanthropic foundations (Rabobank Group's 35 per cent share and the involvement of Rabobank Foundation in the case of NMB). While CRDB has a longer experience in lending to coffee producer groups, the bank is stepping back a bit due to experienced group disintegration and subsequent loan default as well as increasing indebtedness of some groups as a result of the financial crisis in 2008/09.

The SMEs, they have shown some weaknesses over time, so we introduced our maximum volume to the coffee because most of the groups had decided to default, not repaying their loans in time. So, this is a strategy to minimize the risk. We reduced our lending only to groups that are smart in record keeping and meet their repayments of the loan. [...] At one point, we lent to over 41 groups, so the numbers have been decreasing due to the default rate [...], especially after the financial crisis.

**(Alpha Magubila, CRDB, Annex A)**

NMB is trying to compete with CRDB which is the largest financier of the agricultural sector in Tanzania but has only recently started to lend to small-scale coffee producers and is more conservative which results in higher requirements and very rigid eligibility criteria for farmers. Yet, after an analysis of the coffee sector, NMB has plans to intensify its lending operations (including long-term loans for farmer).

[N]ow with the new [coffee sector] regulation we see that there is potential to scale up [...]. We have discussed with the Director General [of the Tanzania Coffee Board] after the regulations. And they called all banks, we had a meeting in Moshi. There will be a need for larger financing in the coffee sector and the question was if commercial banks are ready to enhance that. We said: 'Yes, but - very big one - the sector itself needs to be well coordinated. [...] Regulators need to be on the ground, a lot of monitoring and supervision is needed.' So, there were a lot of things we discussed, but the appetite for commercial banks to continue financing the sector and its current need is there. [...] We have finished that level [of researching the sector]. Now, I tell you, we are ready to go out and finance farmers.

**(Robert Pascal, NMB, Annex A)**

In general, there is a very striking perception by the complete financial sector that NMB and CRDB are pioneers and expert institutions in charge and responsible of financing smallholder (coffee) farmers. Inquiring about their lending operations to smallholder coffee farmers, many of the commercial banks interviewed felt that NMB and CRDB were in a better position to provide answers and to engage in coffee smallholder financing. Many of the financial institutions interviewed do not have specialized agribusiness departments and the expertise of their staff in the area of (smallholder) agricultural finance often is limited. During an interview with a representative of NMB, it became apparent that the development of tailored credit products for smallholder farmers is a challenging and long-lasting process.

Every agro-financing in this bank started with first either having a contract-farming arrangement or a warehouse receipt financing. We wanted to start with the production and the people involved. And we did that for at least three years. Using the warehouse receipt financing and outgrower schemes. So, lessons learned from the past systems, we started learning on how to introduce complementary products. And that is when we came to hear about coffee group loans, we came to hear about CPU loans, truck loans. After studying production, sales turnover, ability of repayment and things like that. So it took us at least three years to introduce these three products we are talking about.

(**Robert Pascal**, NMB, Annex A)

In summary, while the demand for loans is high, the supply is clearly scarce. The few lenders with a presence in the coffee sector tend to allocate only a small percentage of their agriculture portfolio to primary producers, opting to finance agri-businesses in the downstream value chain or larger producers instead.<sup>24</sup> The largest Tanzanian financial service providers in spite of the level of opportunity they see in the Tanzania coffee sector are mostly reluctant to expand their portfolios or to launch products for smallholder farmers.

So, do you see more appetite? My response is: 'Yes, but!'. [...] Because it is not that banks do not want to finance agriculture, [...] because it is a very good sector in terms of the opportunities. But the enabling environment which we are in, it is not in such a way that investors feel comfortable.

(**Robert Pascal**, NMB, Annex A)

## 8.2. Typology of credit schemes offered to smallholder coffee farmers

As explained in *Section 3.4.*, there are three primary uses of financing for smallholder coffee farmers that could be addressed by a credit facility. The interviews with representatives of financial institutions have revealed that all three different loan products, pre-harvest, post-harvest and equipment finance are offered to eligible coffee producer organizations in the surveyed regions. Most of the financing is

<sup>24</sup> NMB and TIB are both offering an *agricultural window* in the scope of which input and equipment loans are granted to individual farmers. These loan products, however, are not designed for smallholder farmers but instead are intended to attract applications from individual medium-scaled producers and upward with traditional (immovable) collateral. Individual loans start from 100 million TSh at TIB and farmers should cultivate plot sizes of at least 50 acres which is clearly beyond the scope of the typical smallholder farming systems.



disbursed for post-harvest coffee purchasing activities<sup>25</sup>. The prevalent loan schemes are presented in more detail below.

- *Pre-harvest input finance* refers to short-term loans (with a tenure of six to twelve months) used to generate pre-harvest capital that allows farmers to invest in their crop production, especially into farm inputs, such as coffee seedlings, fertilizers and herbicides. These loans can be either provided in cash or in-kind in cooperation with input suppliers. Due to the comparatively high risk of loan default (e.g. due to side-selling or crop failure), abundance of pre-harvest finance is clearly limited in Tanzania. These loans are usually only provided against rigid collateral requirements and/or a guarantee by a third party.
- *Pre-harvest equipment finance* for larger farm implements and technologies refers to long-term credit facilities (with a loan term of up to 60 months) which are used to pre-finance investments into coffee production and processing systems. These loans can be either provided in cash or in-kind in cooperation with equipment and machinery suppliers. Investment asset loans can be considered to be the credit scheme with the highest transformational effect, allowing small-scale producers to rapidly expand their businesses – e.g. by land purchases – or improve technological aspects of the production – e.g. improved processing and/or irrigation – and, thereby, to drastically increase output and quality. However, long-term pre-harvest loans schemes are associated with the biggest risk of default and, thus, only offered to a very limited extent, usually requiring a loan guarantee by a third party.
- *Post-harvest marketing finance* comprises short-term crop collection loans (with a tenure of up to twelve months) that are usually demanded by coffee producer organizations and other coffee aggregators to pre-finance collections of coffee from individual small-scale farmers. In Tanzania, post-harvest crop collection loans are the most abundant form of credit (about 70 to 90 per cent of the overall lending portfolio to smallholder coffee farmers). In contrast to input or equipment loans that are regarded as very risky by suppliers, crop collection loans are easily manageable from a financial institution's perspective as purchases and profits earned from sales of coffee can be easily calculated and as the loans are only disbursed against deposits of coffee which can be used as collateral to secure the loan installments. As will be shown, the funds are usually disbursed against receipts issued and forwarded to the bank against deposits of coffee at registered warehouses (this is referred to as *warehouse receipt system financing* – see *Section 8.4.2.*).

### 8.3. Challenges of lending to smallholder coffee farmers

Before presenting the operated models of smallholder agricultural finance in Tanzania's coffee sector, it is important to understand the challenges which lenders face or perceive in providing credit to small-scale agricultural producers. The interviews have brought to light a number of roadblocks that financial service providers are confronted with when lending to smallholder coffee farmers resulting in a limited availability of credit, most of all of pre-harvest finance facilities. In fact, in Tanzania, the

<sup>25</sup> Interview with Ahmad Abubakar, CRDB, see *Annex A*.

risk of lending to coffee farmers is mainly attributed to instances of ex-post moral hazard, notably the mismanagement of loans due to the side-selling of coffee, weak producer group leadership or group disintegration, and low levels of financial literacy, as well as to covariant risks evoked by high exposure to weather hazards causing crop failures and coffee world market price volatility (both undermining the ability of smallholders to repay loans). Some of the cross-cutting and most discussed challenges are explored in more detail below.

### ***Diversification, side-selling and producer group disintegration***

Many banks referred to the specific challenge of ex-ante and ex-post moral hazard which – according to the interviews – both occur regularly in Tanzania. A comment of a financial institution representative demonstrates that ex-ante moral hazard also proves to be a challenge for banks' lending activities since smallholder coffee farmers might use funds granted for coffee-related investments for other important (but presumably less commercially viable) purposes, e.g. to support food security.

[...] [I]n Tanzania, the situation is a bit complex in rural areas because there is no specialization. Someone might have a coffee field here, maize field or something else. And the demand in agricultural finance is not specifically for coffee, they might be looking for financing their beans farm or maize farm. But these crops, other than coffee, are very difficult to finance because of the market and their proceeds.

(Alpha Magubila, CRDB, Annex A)

Most notably, farmer groups which have received credit prior to the harvest in many cases have shown instances of opportunistic behavior, namely selling their coffee to other buyers to bypass existing obligations to their lenders who plan to deduct the cost of the loan when the coffee is sold. Although loan monitoring is a substantial part of financial institutions' procedures, banks lack effective monitoring and sanctioning mechanisms to avoid ex-ante and ex-post moral hazard while the latter occurs frequently in the form of side-selling and clearly is an obstacle in further scaling up such loans.

[I]f you grant groups input loans and you are not aware of what is being done in the groups, you will find that this money is being misused. [...] They take the money and then they do what they want to do rather than to purchase the inputs and distribute them in their group. But sometimes, even if these inputs reach the individual farmers and they apply [them] at their farms, they run their own business and do not supply the coffee to the lender but sell to another buyer or they submit their coffee to another group. And when this group sells, they can receive money while the borrowing group needs to repay the money to the bank.

(Ahmad Abubakar, CRDB, Annex A)

Caused by such side-selling of coffee during periods of low coffee prices, many groups fail to fulfill their repayment obligations vis-à-vis their lender, in some cases fully disintegrate and, finally, struggle to repay their loans.

[...] [T]he few defaulters that we have, they date back to the experience in 2008. Because during that time, when the prices went low and the farmers failed to repay their loans, most of the groups disintegrated. They did not want to sell their coffee to the collection center which is to their groups. [...] These members decided to go to other groups and finally the group which had borrowed was left with no one or left with few members.

(Ally Mwajasho, PASS, Annex A)

### ***Producer group mismanagement and weak leadership***

The school of thought of New Institutional Economics not only offers theoretical perspectives on the modalities within credit markets. Principal-agent theory can also be applied to the relationship between farmers (principals) and managing group leaders (agents) who are chosen to act in the interest of their principal, namely the coffee farmers who form the producer association. Both cooperative unions and smaller coffee producer groups – according to their by-laws – are governed through a democratic decision-making system in which group members elect a group management – in the case of small producer organizations usually comprising a chairman, a secretary and a treasurer – which in its representative role administers the business of the group. However, the constituent coffee producers (principals) who form POs or cooperative unions might be unable to control, monitor and sanction their elected leadership (agent) due to a lack of transparency of economic transactions and ineffective governance mechanisms (see Shaffer 1987; Staatz 1987; Szabó 2002). As discussed in *Section 6.2.1.*, Tanzania's cooperative movement has not only undergone various transformations but it has also been (and continues to be) shaped through politically-motivated intervention while, at the same time, perceptions of cooperatives as parental organizations prevail as a legacy of *Ujamaa* socialism.

We know for sure that cooperatives in Tanzania have been weakened [...] through changes in policies, government policies. [...] In those years, cooperatives were member based. But when Ujamaa Socialism came to Tanzania, then we started another system which basically said that everyone should be involved in the cooperatives. When it came that way that affected their [member] structure and strength. So, that is how it happened that the cooperatives became weak.

(Alfred Chonya, NFAD, Annex A)

This legacy and the weakening of organizational structures has caused numerous cases of farmer association mismanagement and corruption which, during the interviews, was a cross-cutting and one of the most discussed challenges faced by financial institutions in lending to smallholder farmers through producer organizations as financial intermediaries.

You know, when we talk about groups or cooperative societies, it is not an individual issue, it is a group issue. It is a governance issue and the governance is a problem. I do not know other countries, but in Tanzania there is a huge problem when it comes to cooperative societies and their organization. [...] Someone can make a group or cooperative society a personalized enterprise. [...] The problem is that the leaders use organizational properties for personal aims.

(Asanterabi Msigomba, KCBL, Annex A)

When you are elected as a leader, you might think it is kind of an employment now. So you take every opportunity you can to benefit from anything in your sphere of influence within the

cooperative as an individual. Because leadership in cooperatives is not an employment, it is voluntary. There is no salary. [...] So, the chairman is their boss, but the secretary is the salaried person. So you will find that, sometimes, the boss is poor but the person employed by the boss becomes rich through the salary he or she gets. So, sometimes, when the chairman is not strong enough, there is collaboration with the secretary trying to benefit, to steal money from the cooperative.

(Alfred Chonya, NFAD, Annex A)

However, the prevalence of such challenges at the time of the survey varied considerably over the different survey regions and seems to depend largely on the existing organizational structures in the respective coffee growing region. Interestingly, the interviews with coffee producers revealed that farmers do have a significant level of trust in the leadership of their POs (smaller groups of up to 300 farmers). This picture changes dramatically with regard to the cooperative structures in the Kilimanjaro and Arusha regions where the leadership of larger RPCSs (with often more than 1,000 members) related to KNCU were frequently criticized for weak governance, corruption and mismanagement. Surveyed farmers who were members of cooperative structures have frequently shown a considerable level of mistrust vis-à-vis the cooperative union structures and discontent with ineffective input provision and marketing services seemed to be growing.

You know, in the North, the cooperatives are managed by very old people. But if you go to the South, you can see young people in the organizations. And you see, young people are very stubborn and idealistic, so they pace. But these people here [in the North], they have been in cooperatives for such a long time, now they do not bother anymore [...]. In those days, the cooperatives in Kilimanjaro were very strong, but nowadays they are no longer strong. We see stronger cooperatives in the South like the cashew cooperatives in Lindi and Mtwara or coffee cooperatives in Mbeya or Mbinga. Even the cooperative[s] [...] are managed better than coffee farmer groups in Kilimanjaro.

(Alfred Chonya, NFAD, Annex A)

Mismanagement and misuse of funds also emerges and according to one interviewee is particularly pronounced in the case of SACCOs which are also frequently used by formal financial institutions as intermediaries for the channeling of funds.

We face a problem of management within SACCOs and groups. You find that for most of the SACCOs and groups, if you grant the funds directly to SACCOs, some leaders they create their own members. Therefore, they took a big amount of loans, pretending that this is for a particular client but this client does not even exist. They tend to go further, by colluding with village leaders who even verify the [fictitious] clients using those loans.

(Israel Lyatuu, UCB, Annex A)

Even if governance structures are established, the capacities, skills and the integrity of groups are sometimes insufficient to enable effective checks and balances by the members and thus ensure an effective management of the group.

The primary societies only [meet] once in a year. So a member participates in the cooperative one day in a year. If he misses at the Annual General Meeting, then he will have to wait for another 12 months to ask a question. And sometimes, they [the group leaders] do not want questions, they are stubborn people, they do not give them a chance. [...] Another governance issue is that the attendance in these Annual General Meetings is very bad. [...] Even if you know they have an Annual General Meeting, but the kind of reports they make are very

sophisticated and include mathematical things and most of the members they simply do not understand.

(Alfred Chonya, NFAD, Annex A)

In general, the reported problems of producer group mismanagement which are usually rooted in a lack of control of farmers over the leadership of their organization pose a severe challenge to the ability of producer organizations and cooperatives to fulfill their role as effective service providers and, herewith, their prospects of being considered as bankable financial intermediaries and viable borrowers by financial institutions. Many of the representatives of financial institutions agreed that the absence of strong cooperatives in Tanzania makes financing difficult to provide.

In the specific case of the Moshi based KNCU, various interview partners claimed that continuous mismanagement and a poor financial situation had caused a lack of effective service delivery to smallholder coffee farmers, e.g. delayed or revoked payments and a lack of agricultural input provision. In 2007, a joint venture of 32 RPCSs which had been marketing their coffee through KNCU, detached from the union and was formally recognized as the *G32 Kilimanjaro New Co-operative Initiative*, an umbrella organization which now autonomously markets the coffee of its members. To date, it seems that KNCU has not recovered and continues to suffer from severe financial difficulties, also since many other local banks refused to provide credit to the union.

In a recent initiative, KNCU was forced to release some of its members to which it could no longer offer marketing services. In May 2014, six RPCSs in the Kilimanjaro and Arusha regions which were formerly members of KNCU and the *Arusha Cooperative Union*, as a reaction to the failure of the unions to pre-finance their coffee buying operations from individual farmers, formed another new apex organization, the Tanzania Coffee Farmers Alliance (hereinafter TCFA). When KNCU lost its marketing monopoly after the privatization of the Tanzanian coffee market, the existing business models came increasingly under pressure, as a representative of KNCU explained in an interview:

KNCU used to provide these inputs for free [...]. Then, after the privatization, things have changed. From there, we entered into an alternative model. [...] We just procure those inputs and distribute them to the farmers. At the end of the day, we shall deduct the costs for the inputs from the final payment to the farmers. What happened is that those farmers - after receiving those inputs - used it at their field and gained a substantial yield. They took the coffee and then sold it to private buyers and not to the Rural Primary Cooperative [Society]. That is where the mission failed. It was a total loss to KNCU, a loss of 100 per cent. [...] Once, you make that treaty, you will not receive any coffee from the farmers, because they know that once they send it to us, we will deduct the costs at the end of the day.

(Gerald Msilanga, KNCU, Annex A)

While KNCU's inability to persist in a free market setup against its competitors is certainly a major driver of its demise, the interviews have also clearly revealed that the union lacks transparent and efficient financial management and due to its poor financial situation has recurring difficulties to fulfill its role as a marketing agent for the farmers. The union also suffers from drastically decreasing coffee collections from its members (partly as a result of sub-optimal land distribution patterns in the Kilimanjaro region)

and lower coffee world market prices. With RPCSs increasingly detaching from KNCU and given that many banks clearly rejected requests to provide credit to the union, the future of KNCU is highly ambiguous and one of the oldest cooperative unions in Africa does not face a bright future. It remains to be seen if KNCU can recover from recent events and regain the trust of its members and financial institutions.

### ***Covariant risks***

Another major challenge of extending finance to smallholder farmers in Tanzania is the exposure of smallholder production systems to covariant risks such as volatile coffee prices, weather hazards such as floods or droughts as well as exposure of coffee to pest and diseases. As presented in *Section 7.1.*, coffee smallholders in Tanzania often lack the financial means to invest into risk mitigation measures, such as irrigation schemes, coffee storage facilities or herbicides (to prevent the spread of coffee pests and diseases) which would protect them against these major perils.

We don't have a say: when the price goes down, we have to dance to that music. When Brazilian or Vietnamese coffee is harvested, you don't have a choice, you have to dance accordingly. That is the complexity of lending to the coffee business, unreliable prices. Today they're good, tomorrow they're worse and you have already injected a lot of money into that segment. At the end of the day, you don't even think of getting back 50 per cent of what you lent. Another challenge is weather, which we cannot influence either. The big estates are fine, because they're using irrigation and drilling more wells. But for smallholders it's more difficult.

(Francis Morel, CRDB, Annex A)

As you can see, the price is sometimes a real headache to the banks and of course also to the farmers to repay their loans. The price of the coffee is fluctuating, it is not stable. [...] Once you disburse money, and the groups have collected the coffee, the coffee goes to the auction, the price at the auction is very low as compared to the purchasing price, we have already lost.

(Ahmad Abubakar, CRDB, Annex A)

### ***Limited means of collateralizing loans***

Tanzanian smallholder coffee farmers have low incomes and due to their undercapitalization there is usually no immovable assets which financial institutions could pledge as collateral to secure loans, whereas such securities are often a precondition for financial institutions to extend credit, especially in the case of pre-harvest finance. Even if there are such assets, formal evidence of ownership, e.g. land titles, are typically not available.

There are a lot of people who are engaging in very viable businesses but they do not have enough collateral to be supported by financial institutions. [...] [P]eople might have their securities but they do not have the official documents to prove their ownership. There are some areas where they do not have title deeds, so it is very difficult. People can have very good securities but no proper documentation so that the bank cannot lend to them.

(Ally Mwajasho, PASS, Annex A)

Interestingly, even if financial institutions have pledged a borrower's specific property, they lack effective mechanism to enforce repayment and often banks have difficulties

finding buyers who have an interest in buying the assets (such as houses or land) which have been seized. Thus, the provision of collateral is mainly seen as an incentive mechanism to reduce moral hazard rather than a reliable financial compensation in the case of default:

So for me, to ask for additional collateral, asking for additional guarantees from their members is just to support the commitment from their members to the business. And you can go out to all the lenders and ask them what they get out of the guarantees by their members: nothing. It does not make a big difference.

(Ally Jamal, Root Capital, Annex A)

If someone defaults, it takes time to recover our money even if we have the security in place. [...] The laws are there, if you default. But during implementation, we end up being in court cases. [...] And people, [...] they think, if they default, the court will intervene and such things.

(Shadrack Mtunja, CRDB, Annex A)

### ***The legacy of government intervention in rural markets***

Tanzania historically has the highest level of donor funding per head of any East African country across the last fifty years (see World Bank 2014b). This coupled with a former socialist economic model and low educational levels in rural areas has created a situation in which many Tanzanians have not yet fully internalized the modalities of credit schemes but rather expect the government to intervene in the case of loan default. The era of *Ujamaa Socialism* in Tanzania has left a legacy that even today can be observed in a poor repayment culture, high delinquency and a lack of knowledge of commercial financial arrangements.

Another challenge is how bring people to understand how to manage the loans. We, in Tanzania, have just liberalized our economy in 1991, that is when the private sector came in. The timing is quite different also when you compare it to Kenya which has started in 1962 straight to private sector. So, the awareness [...] [of] the loan management is very high when you compare that [to Tanzania].

(Alpha Magubila, CRDB, Annex A)

In summary, the interviews have displayed many of the typical challenges that apply to rural and agricultural microfinance. However, some of the cross-cutting issues discussed, such as weak producer group and cooperative leadership structures as well as a still strong legacy of the *Ujamaa* socialist era in the minds of (mostly rural) citizens, are rather country-specific challenges which further increase the prevalence of moral hazard among smallholders in Tanzanian coffee sector and, thus, impair the comfort that financial institutions have in lending to them.

## **8.4. Prevalent models and features of coffee smallholder credit schemes**

In spite of these substantial challenges, a number of banks have found feasible mechanisms to provide agricultural credit, yet mostly *post*-harvest financing, to small-scale coffee farmers in Tanzania on an economically viable basis. This section will present the general modalities and the distribution models which formal financial

institutions use to provide smallholder agricultural credit. Two sub-sections will analyse and present the operated models of pre-harvest input and equipment finance (*Section 8.4.1.*) and post-harvest credit (*Section 8.4.2.*) in more detail. *Section 8.4.3.* explores recent initiatives in the Tanzanian coffee sector which promote savings which are specifically dedicated to agriculture-related investments.

For those financial institutions which provide credit facilities for smallholder coffee farmers, there is in fact no lending to individual borrowers. All loan provision models identified in the course of the field survey rely on intermediaries who in turn channel funds to individual farmers. The reason for this is simple: transaction costs associated with the management of a loan in the rural context are high. Since loan volumes requested by a single small-scale farming business (with some few acres of cultivated land) are marginal, the cost incurred by a financial institutions would be substantially higher than the actual proceeds which could be generated by the interest paid for such a loan facility granted to an individual farmer:

[I]t is very expensive to go to individual farmers, unless they are big ones. For the big farms it's fine, they are well-managed, we can get their financials, you can meet their management at all times. But for individuals it is a little bit expensive and we cannot, to be sincere, manage individuals. If you visit them, they are not there, and then you have already wasted your time, fuel and operating expenses. [...] They don't have title deeds, they are not surveyed, so you don't have a good security. Once they default, there's nothing you can do.

(Francis Morel, CRDB, Annex A)

As laid out in *Section 6.2.2.*, there are different models of coffee producer organization in Tanzania while a major determinant for organizational patterns is whether cooperative union structures have been established in the region at hand in the past. Coffee producer groups range in size – from 30 members for smaller producer organizations to up to multiple thousands of members in the case of the RPCSs which constitute the cooperative unions. In general, three different producer or community organizations can act as intermediaries through which larger financial institutions reach out to individual smallholder coffee farmers in Tanzania: (1) Producer groups and organizations, (2) cooperative unions and (3) SACCOs.

All three intermediaries have in common that they are member-based and -owned organizations, usually lead by an elected management. However the different entities differ in size, modes of organization and organizational development, governance, management and membership rules. While coffee producer groups and most cooperative unions are only dealing with coffee producers, SACCOs are community-based semi-formal financial institutions which are open to all community members and – on an individual and group basis – provide financial services which must not be necessarily related to coffee production or agriculture in general but are frequently granted for other purposes such as social or health expenditures. Since SACCOs play a crucial role in providing loan and saving schemes in the local and communal context, some of the interviewed financial institutions (among them CRDB, TIB, UCB and KCBL) lend considerably to these semi-formal financial institutions and use them as financial intermediaries, thereby reaching out to individuals that would not be bankable otherwise. Although financial intermediation via SACCOs is a viable option to improve financial inclusion, their financial services are often not adapted to agriculture, largely



limited in scope and (timely) availability since borrowers need to save at least one third of the loan volume in a SACCO account before a loan is granted. Moreover, as discussed above, SACCOs, especially larger organizations, often have severe management problems. For these reasons, this paper will focus on formal financial institutions – such as commercial bank and formalized microfinance institutions – and their lending to small-scale coffee producers groups.

Some banks chose to lend to the large apex organizations and unions since, naturally, their overall production capacity and the respective demanded loan volume is substantially higher and can be secured more easily than loans requested by smaller producer groups. This is why some of the financial institutions prefer to lend through the management of cooperative unions which thereby pre-finance their day-to-day operations, most of all, purchases of coffee from their members.

I know how challenging it is, they [individual smallholder farmers] are scattered, no particular addresses, no particular businesses. [...] We extend the loan to the union and the union extends it to the cooperative society [...]. And then the cooperative societies assist their members by purchasing their coffee. And the main cooperative union purchases from the cooperative societies and then they go to the market.

(Francis Morel, CRDB, Annex A)

Yet, as has been shown in *Section 8.3.*, larger cooperative unions operating in Tanzania are prone to mismanagement and corruption caused by weak leadership and political interference combined with ineffective checks and balances by their members. In the light of the struggling union structures and limitations of working with individual smallholder farmers, many financial institutions have decided to engage with small producer groups which are not associated with any of the large cooperative unions. Recently, in the Kilimanjaro region where the large KNCU has been operating for decades, financial institutions have even started to enter pre-financing arrangements with RPCSs which have formerly been associated and used to market their coffee through KNCU, but now detached from the union to market their members' coffee autonomously.

Loan facilities of formal financial institutions to smallholder producer groups are typically transacted with organized groups of small-scale agricultural producers, that is by means of leading representatives – the management – of these groups who act as intermediaries brokering and administering the loan between financial institutions and its ultimate beneficiaries, the smallholder farmers who constitute the respective groups. By interacting with smallholders via the farmer group management, banks only engage with some few group representatives in charge of preparing the loan application of the whole group and transaction costs are kept at a supportable level. The group leadership acts as a contact person and typically as a guarantor for the loan. At the same time, the loan volume – and the potential return for the lender – increases with the number of group members who request capital on a loan basis from the financial institution at hand.

We do it through groups, because those people [do] not have security and as one farmer would not qualify for that loan. Through the group lending, it is easier for us to administer the loan. So, those groups are registered, they are official, and then we lend through them. Leaders do

guarantee their members and they administer the whole loan system.

**(Alpha Magubila, CRDB, Annex A)**

By engaging with the group as a whole and managing the loan through one single bank account for the entire group, individual default of a single group member indirectly affects the financial performance of the entire group which creates interdependence among group members and incentivizes them to ensure repayment, also by their fellow farmers. Thus, by lending to groups, banks try to create liability between the group members. Intra-group guarantorship can be an effective mechanism of enforcing loan repayment, especially if borrowers in the case of failure to repay the loan or entire loan default cannot be sanctioned by other means, e.g. if the prevalence of suitable collateral to be seized by the financial institutions is limited. In many cases, group leaders act as guarantors for a loan and often have to provide immovable assets which shall incentivize them to ensure the performance and repayment of a loan.

[...] [T]he leader of the groups signs the guarantee. And assets of the board members are also taken, the legal assets so that they have the incentive to ensure the loan performance. Otherwise, the assets will be confiscated. But for input loans, we take the collateral, maybe the farms of the members of the Board of Trustees. And also when they sign, they have liability to their group since they sign the agreement with the bank.

**(Ahmad Abubakar, CRDB, Annex A)**

The fact that by far most of the coffee grown in Tanzania is channeled through the Moshi based coffee auction has provided a unique opportunity for banks (and farmers) to establish arrangements as part of which farmers open accounts for deposits of proceeds from the auction. The banks are therefore able to deduct the costs of the loan when the sales proceeds from the auction enter the farmer group account.

[...] The group leaders act as guarantors between the bank and the member of the group. So, they keep on watching following one another within the group, village or community that they have. But in case, a person struggles [...] these are the group members who bear the burden to pay the loan. Because what we do, we just deduct that source after the sales proceeds come from the auction, they pay the money to the CRDB account and we deduct the loan. [...] [T]he villagers, they know each other, they know who is selling where. So, once they see you are selling somewhere which you did not agree before, they will just be at your neck. Because, if someone defaults [...], they use the group power to make him or her pay. The chairman and the other people, if you are a defaulter, they come to you, they want you to pay and they will make sure that they are there when you sell your coffee.

**(Shadrack Mtunja, CRDB, Annex A)**

As a reaction to the prevalence of mismanagement and weak leadership of coffee producer groups, some of the financial institutions have incorporated capacity building initiatives, in most cases funded by external donor funds, as an integral part of their engagement with coffee producer groups in order to elevate financial literacy, transparency and the governance performance of their clients.

NMB, assisted by the Dutch Rabobank, has formed the NMB Foundation for Agricultural Development (NFAD) which is providing capacity development of producer organizations in the areas of leadership, good governance, (loan) management, entrepreneurship and business plan preparation. Farmer groups are trained by NFAD in two-day seminars including a follow-up six months after the initial seminar. The

trainings originally focused on financial literacy training of group leaders, but additional seminars on governance questions have been introduced.

This program was designed for leaders, a leader training. But we have seen in the program that if we train the leaders [...], they do not have capacity to convene meetings with their members to give them feedback. It is only at the Annual General Meetings where they can announce a few things of the training. It is not possible for members to get exactly what has been delivered in those trainings. So that is why we decided to create another program, members training. [...] We developed another module for members training in governance.

(**Alfred Chonya**, NFAD, Annex A)

But also other banks having realized the critical role of capacity development in Tanzania, either through their own field officers or assisted and financially supported by third parties, provide in training activities for smallholder farmers, most of all in the area of basic financial literacy which, in Tanzania, is a precondition for banks to enter into credit arrangements with coffee producer groups.

We are teaching them on good governance, keeping their books well, transparency. [...] We just empower the cooperative society leaders, the secretaries and managers how to keep their books, so things go well.

(**Ombeni Masaidi**, KCBL, Annex A)

#### **8.4.1. Pre-harvest input and equipment finance**

Pre-harvest finance – both short- and long-term – is crucial for smallholder coffee farmers to acquire much needed agricultural inputs and farm equipment to improve productivity and production systems. As discussed, these pre-harvest facilities are associated with substantial risks, most of all crop failure and moral hazard problems such as side-selling. In order to reduce the risk of ex-ante moral hazard, the banks cooperate with suppliers of agricultural inputs and farm equipment products and transfers the loaned funds directly to these suppliers who then provide the agricultural inputs or the equipment in-kind to the farmers to avoid the misuse of cash-funds for other purposes.

For example, if you have a company supplying fertilizer, chemicals or agronomic and extension services and the bank, then we team together. [...] Then we calculate what is the input requirement based on the crop valued. And then, we give valid financing to these suppliers and the farmer receives the inputs.

(**Robert Pascal**, NMB, Annex A)

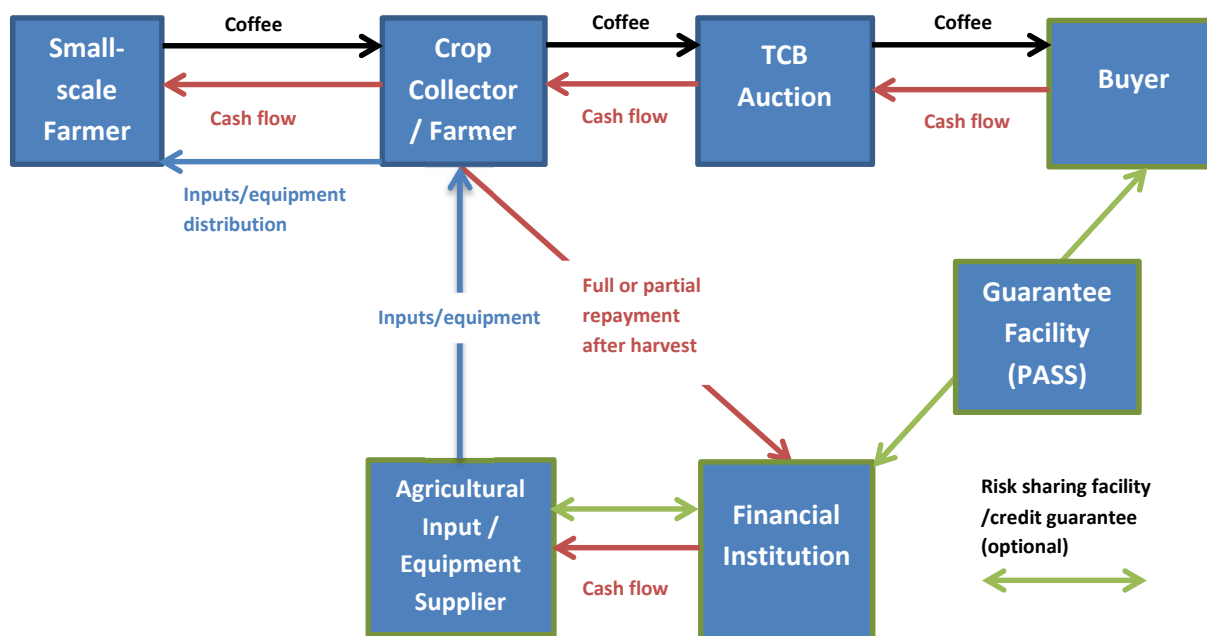
Although farmers can sell agricultural inputs or apply them to other crops than coffee, the likelihood of a misallocation of the assets decreases if the agricultural inputs are provided in-kind rather than in cash.<sup>26</sup> It is also worth noting, that, by cooperating with trusted suppliers, financial institutions also ensure that the products provided to farmer groups are genuine and no counterfeit products which many interviewed farmers

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<sup>26</sup> In other words and using the terminology of NIE, the asset specificity of agricultural inputs (provided in-kind) is higher than for cash-funds, and, thus the likelihood of moral hazard decreases.

reported to suffer from with when purchasing their inputs from smaller, local dealers.<sup>27</sup> Figure 8-2 presents a classical model of value chain input or equipment finance in Tanzania.

Figure 8-2 – Pre-harvest value chain financing (Own illustration)



For pre-harvest input and equipment finance, financial institutions usually require 125 per cent of the loan volume as a collateral equivalent (typically in the form of immovable assets). For farm equipment finance, the assets which are provided in-kind by trusted suppliers are branded and the option of confiscating the assets in the case of loan non-performance allows financial institutions to use the financed asset itself as collateral. In some instances, such as in the case of tractors provided by EFTA, the assets are tracked via GPS to avoid misuse.

Since only very few producer groups are able to fulfill the substantial collateral requirements, many banks rely on guarantee facilities as a complementary measure to secure loans and to facilitate pre-harvest lending. The Private Agricultural Sector Support Trust (PASS) and in some cases bank-own foundations, such as Rabobank Foundation in the case of NMB, provide partial loan guarantees to eligible coffee producer groups and thereby facilitate the provision of pre-harvest finance for agricultural inputs and equipment substantially.

For PASS operating in Tanzania, it makes banks comfortable. Because if you guarantee 50 per cent of the loan that means you are telling the bank that you take 50 per cent of their risk. So, most of the banks they are now comfortable with lending to producers and that is

<sup>27</sup> Not only do counterfeit products not create the expected benefits (such as yield increases), but – quite the opposite – they might even have a negative impact by damaging the crop. Both effects result in high cost for farmers.

because of PASS or other institutions with a similar business. Previously, most of the banks shied away from lending to agriculture, especially to small-scale agricultural production.

(Ally Mwajasho, PASS, Annex A)

PASS, at the time of the survey, was collaborating with a number of local financial institutions which engage in coffee sector financing, namely NMB, CRDB, TIB, EXIM, and KCBL besides some few others. A representative of PASS stated that the organization had to adjust its guaranteeing model slightly to recurring problems of moral hazard with some of the clients who misinterpreted the guarantee:

The challenge that we have been facing is that some of the entrepreneurs thought that as there is guarantee from PASS that they are not supposed to pay. We are [still] facilitating [...] loans but we now ask our clients [to pledge] his or her own collateral for security.

(Ally Mwajasho, PASS, Annex A)

In addition to partial credit guarantees, a complementary option to facilitate the provision of pre-harvest finance is to enter into risk-sharing agreements between different value chain actors, namely the buyer, the agricultural input supplier and the financial institution (see *Figure 8-2*). However, such agreements rarely exist in Tanzania's coffee sector since the different stakeholders usually lack the willingness to take a part of the associated loan default risk. That is why, in the context of persistent moral hazard, the provision of pre-harvest finance largely depends on guaranteeing facilities and, therefore, is largely limited to date. Pre-harvest loan facilities are only granted to loyal producer groups with a good financial record and trusted business relationships (e.g. with certified coffee buyers). Based on the findings of the expert interviews with representatives of financial institutions, *Figures 8-3* and *8-4* present the modalities and features of pre-harvest input and equipment finance offered to coffee producer groups in the survey regions broken down to the different financial institutions.

*Figure 8-3 – Features of pre-harvest input finance*

Name of financial institution	Type of financial institution	Loan offered to group or individual	Quoted interest rate as a percentage of the loan volume (per annum, in local currency)	Additional costs* as a percentage of the loan volume (if applicable)	Loan range (in USD)	In-kind / cash	Terms of repayment	Lending term	Collateral requirements**	Complementary Guarantee (by PASS)	additional features
CRDB	Commercial Bank	Group	17-20%	1.5%	3,000 to 30,000	in-kind	after grace period	12 months	hard collateral (group leaders) + group liability	yes	Loan products starting from 50MT group coffee production
NMB	Commercial Bank	Group	15%	2%	6,000 to 600,000	in-kind	after grace period	12 months	hard collateral (group leaders) + group liability	yes	Loan products starting from 50MT group coffee production
KCBL	Community Bank	Group	15%	1.5%	3,000 to 30,000	in-kind	monthly with option of grace period depending on type of input	12 to 24 months	hard collateral + group liability	yes	guaranteed by Agricultural Inputs Trust Fund
UCB	Commercial Bank	Group	10% 15-19%	3%	125 to 60,000	in-kind	monthly after harvest	12 to 24 months	hard collateral + group liability	no	Interest rate depends on the availability of a specific "agricultural" product line offered at favourable conditions
Root Capital	Social Investment Fund	Group	17 - 22%		35,000 to 1 mio		after grace period	up to 18 months	marketing agreement with buyer	no	Loan products starting from 50MT group coffee production
TIB	Development Finance Institution	Individual/Group	5-8%		starting from 60,000		monthly	12 months	hard collateral	yes	
MECOB	Community Bank	Group	20%	1%	up to 12,500	cash	after grace period of 6 months	up to 12 months	group liability; one third of loan in savings; no additional hard collateral requirements	no	

\* Comprises fees and compulsory charges for loan application, commitment fees, bank accounts, loan administration, transportation, credit life or funeral insurance or collateral insurance.

\*\* Hard collateral in the form of immovable assets at a value of 125% of the loan volume; group liability typically comprises guarantees signed by and loan covers seized from group leaders.

Figure 8-4 – Features of pre-harvest equipment finance

Name of financial institution	Type of financial institution	Loan offered to group or individual	Quoted interest rate as a percentage of the loan volume (per annum, in local currency)	Additional costs* as a percentage of the loan volume (if applicable)	Loan range (in USD)	In-kind / cash	Terms of repayment	Lending term	Collateral requirements**	Complementary Guarantee (by PASS)	additional features
CRDB	Commercial Bank	Group	20%	1.5%	3,000 to 300,000	in-kind	monthly after grace period	up to 60 months	hard collateral; pre-financed equipment is seized as collateral	yes	loan products starting from 50MT group coffee production; product in portfolio but not offered at the time of the survey
NMB	Commercial Bank	Group	20%	2%	10,000 to 150,000	in-kind	after grace period	up to 60 months	hard collateral; pre-financed equipment is seized as collateral	yes	loan products starting from 50MT group coffee production; product in portfolio but not offered at the time of the survey
KCBL	Community Bank	Group	15%	1.5%	17,000 to 35,000	in-kind	quarterly after 6 months grace period	up to 36 months	24% payment of equipment cost by group; 80% PASS guarantee	yes	
UCB	Commercial Bank	Group	10% 15-19%	3%	125 to 60,000	in-kind	monthly after harvest	up to 24 months	hard collateral for individuals; group liability for groups	no	Interest rate depends on the availability of a specific 'agricultural' product line offered at favourable conditions
Root Capital	Social Investment Fund	Group	17 - 22%		35,000 to 1 mio		monthly after grace period of one year	up to 60 months	investment asset can be seized as collateral; marketing agreement with buyer	no	Loan products starting from 50MT group coffee production
TIB	Development Finance Institution	Individual/Group	5-8%		starting from 60,000	in-kind	monthly	up to 60 months	hard collateral	yes	
MECOB	Community Bank	Group	20%	1%	up to 12,500	cash		up to 24 months	group liability; one third of loan in savings	no	
EFTA	Equipment Finance Firm	Individual/Group	18%		2,000 to 50,000	in-kind	monthly after grace period of two months	36 months	5% upfront payment of loan volume; pre-financed equipment is seized as collateral	no	

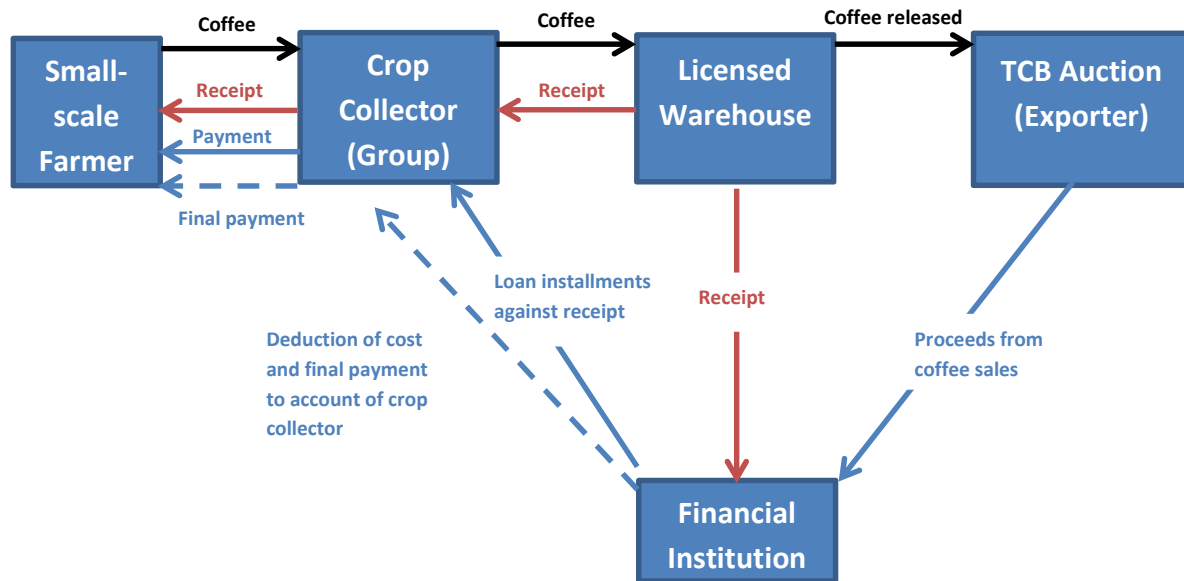
\* Comprises fees and compulsory charges for loan application, commitment fees, bank accounts, loan administration, transportation, credit life or funeral insurance or collateral insurance.

\*\* Hard collateral in the form of immovable assets at a value of 125% of the loan volume; group liability typically comprises guarantees signed by and loan covers seized from group leaders.

#### 8.4.2 Post-harvest finance

Post-harvest finance in Tanzania is demanded by coffee aggregators and collectors in order to facilitate the collection, purchase and marketing of coffee from individual small-scale producers. Due to the marketing process of coffee it often takes several months until payments of the ultimate buyers (mostly international coffee roasters) are transferred to the exporting companies who purchase the coffee from producer groups at the Tanzanian coffee auction. Smallholder coffee farmers who are highly undercapitalized and have low incomes rely heavily on post-harvest credit facilities to bridge the period until the payments for coffee sales are received. Thus, post-harvest financing either through the cooperative union structures or POs is an inherent element of the marketing process of coffee in Tanzania. Such loans are largely granted through a collateralized commodity financing system. In this model, referred to as warehouse receipt system, finance is provided against physical deliveries of coffee by the aggregator to a warehouse. The model has first been introduced by NMB after extensive piloting with technical assistance from Rabobank International in 2007 and is now used by other financial institutions in Tanzania. *Figure 8-5* presents a classical warehouse receipt financing model for the extension of post-harvest finance as it is typically operated by financial institutions in Tanzania's coffee sector.

Figure 8-5 – Post-harvest financing through warehouse receipts (Own illustration)



The system has proven to be a very solid post-harvest loan distribution model in which the coffee deposited at the warehouse serves as a cover for loan installments to crop collectors who deliver coffee to the warehouse. Loan installments are only extended against deposits of coffee in the financial institution's controlled and authorized warehouse after submission of a receipt by the warehouse operator to the financial institution. Loans can be easily monitored and repayment of loans can be assured as the costs of the loan are deducted by the financial institution at the receipt of the sales proceeds at the TCB coffee auction. Financial institutions usually only disburse a certain share of the collected coffee's value (typically 60 to 70 per cent of the coffee's market price equivalent) to ensure that the disbursed funds can be paid back through the sales of coffee (even if world market coffee prices decrease while the coffee is stored at the warehouse). At the beginning of the harvesting season, financial institutions also provide initial (unsecured) loans to crop collectors to start the coffee collection process.

No, we do not disburse this in total. [...] We set a limit of overdraft. Then, they deposit their coffee to the warehouse, maybe 100kg, and then we give 70 per cent of 100kg in cash. We are financing them until they exhaust the overdraft facilities. But we also give them initial funds for buying coffee which is 10 per cent for which [...] we require the client to submit collateral.

(Pharseko Said, NMB, Annex A)

After the collections, the crop remains in the warehouse until buyers purchase the coffee and pay, thus enabling the financial supplier to provide working capital to farmers while the commodities are still stored. After the release of coffee to the TCB auction and sale of coffee to the exporter, the proceeds are transferred to the crop collector's bank account. As discussed, there is usually a specific agreement in place between the financial institution, the producer group and the TCB to ensure that the auction proceeds are transferred to the financial institution's authorized bank account

and costs for the repayment of the loan can be deducted. Only after the loan liquidations are made, are the remaining funds disbursed to the crop collector through a final payment and then forwarded to the individual farmers. The warehouse receipt system also provides a mechanism of mitigating commodity price volatility by giving farmers flexibility to sell their product when the market offers favorable prices, usually resulting in higher proceeds for the farmers.

The issue here is that at the beginning of the coffee collection season the prices are very low. So, after delivering the coffee to the warehouse and curing the coffee starts and transporting it to the auction where it is sold, there is an increase in prices compared to what the farmer would have been paid at the beginning.

(Pharseko Said, NMB, Annex A)

An analysis by NMB (2013) explores the economic benefits of warehouse receipt financing for small-scale producers of different commodities based on field data collected in a study in 2012. The report depicts that Tanzanian coffee farmers selling through the warehouse receipt system do benefit through considerably higher prices for coffee sales compared to farmers with no access to the model while the economic benefits clearly outweigh the costs of operating the warehouse receipt system. However, according to the report, an oligopoly of a limited number of dominant buyers in the Tanzanian coffee sector, the still existing buying monopoly of cooperative unions and a lack of capacity of the Warehouse Licensing Board operating under the Tanzanian Ministry of Industry and Trade, limit the economic benefits and further roll out of the financing model. Based on the findings of the expert interviews with representatives of financial institution, *Figure 8-6* presents the modalities and features of post-harvest marketing finance offered to coffee producer groups in the survey regions broken down to the different financial institutions.

*Figure 8-6 – Features of post-harvest marketing finan*

Name of financial institution	Type of financial institution	Loan offered to group or individual	Quoted interest rate as a percentage of the loan volume (per annum, in local currency)	Additional costs* as a percentage of the loan volume (if applicable)	Loan range (in USD)	Terms of repayment	Lending term	Collateral requirements	Complementary guarantee (by PASS)
CRDB	Commercial Bank	Group	19-20%	1.5%	6,000 to 300,000	Warehouse Receipt System	12 months	None	no
NMB	Commercial Bank	Group	19%	2%	44,000 to 180,000	Warehouse Receipt System	3 to 12 months	None	no
KCBL	Community Bank	Group	15%	1.5%	12,000 to 350,000	Warehouse Receipt System	12 months	None	no
Root Capital	Social Investment Fund	Group	17 - 22%		35,000 to 1 mio	Warehouse Receipt System	up to 24 months	Marketing agreement with buyer	no
UCB	Commercial Bank	Group	10% 15-19%	3%		Warehouse Receipt System		None	no

\* Comprises fees and compulsory charges for loan application, commitment fees, bank accounts, loan administration, transportation, credit life or funeral insurance.



### 8.4.3 Agriculture-focused commitment savings

As previously discussed, pre-harvest loans are still perceived as a high-risk endeavour and, thus, largely limited. At the same time, low incomes combined with a sub-optimal financial management and a low saving mentality of farmers have created an environment in which investments into coffee production systems are scarce and insufficient. Empirical data derived from a survey conducted by the *Kilimanjaro Project Initiative* in 2012 suggest that farmers in the Kilimanjaro region only reinvest slightly more than one 25 per cent of their coffee-income into coffee production.<sup>28</sup> This aligns with financial institutions' experience with smallholder coffee farmers:

[T]hey [smallholder farmers] use the money for private activities like paying school fees, improving their lives, repairing their houses. What we normally do is to advise them to have savings. For example, at the time they receive the funds, they do not work on coffee and it is not the season. And in the end, they lack the funds. So, usually, during the picking season we advise them to save, to save a little money for the time when the season is over and have some leftovers for the coming season.

(Ombeni Masaidi, KCBL, Annex A)

Mostly, you will find that they use all of their money right after getting it and when the season comes you might find that some of them they do not have money for inputs so that they need another assistance from outside to give them inputs.

(Pharseko Said, NMB, Annex A)

In the light of low saving rates and the challenge associated with pre-harvest finance, some initiatives aim to incentivize farmers to re-invest proceeds generated from sales of coffee into their production systems. With agriculture-focused commitment savings products, both financial institutions and value chain actors have started to develop alternate models of providing agricultural inputs (rather than actually pre-financing such products), typically handing out agricultural inputs (often at favorable terms through bulk purchases) against warehouse receipts of coffee or savings dedicated for reinvestment into coffee production, thereby bypassing the risk associated with pre-harvest financing.

NMB is promoting savings of farmers trying to integrate crop collection and input loans using the so called *Kilimo Account Package* for farmers (semi-commercial businesses of 50 acres of coffee and above). After sales of coffee, farmers are sensitized to save a part of the generated income in a personal account, which is then used as collateral for the pre-financing of inputs in the following season. While the product is designed for medium-size farmers, the general approach could also be conferred to small-scale coffee grower groups.

HRNS is operating a similar model for coffee smallholder producer organizations in cooperation with NMB and CRDB in the Mbeya region. Coffee is delivered to the warehouse by farmer groups who receive a receipt-note which is then used to apply for a loan at a bank (NMB or CRDB). The bank translates the amount of coffee

<sup>28</sup> Data based on a non-published farmer survey conducted by the *Kilimanjaro Project Initiative* in Machare in 2012.

delivered into cash based on an average price for coffee in the preceding season. Once the loan is confirmed, the bank requests an invoice from a genuine input supplier selected by the farmer group and pays the supplier directly. The input supplier gives the paid inputs to the groups who are distributing them among their members. Since coffee is delivered to the warehouses between May up to mid of August, the inputs for the following season can be procured in time since they are only needed in November/December of a year. Quite similarly, Tutunze Kahawa Ltd., a large coffee trader in the Tanzanian market, is planning to extend input vouchers to farmers which can be obtained by farmers against coffee deliveries at buying post or warehouses. The vouchers can then be redeemed against inputs at discount rates (through bulk purchases).

It is important to note, however, that none of the presented input provision models constitute pre-harvest financing in a classical sense: although these financial models facilitate the provision of inputs – either against warehouse receipts or against existing income (savings) –, the agricultural inputs are not granted prior to the harvest but only based on the realized crop of the previous season (secured in warehouses), and thus not subject to the typical risks of crop failure and/or moral hazard. These measures merely aim to promote savings and the financial management by farmers thereby making (existing) funds available for investments in the following coffee season. While the encouragement of savings and improved financial management is certainly an important (complementary) intervention, the expansion of pre-harvest finance facilities is crucial to effectively address the Tanzanian coffee sector's demand for credit since the coffee sector is generally under-financed at the smallholder production level and as due to low incomes the opportunities to accumulate savings are typically low.

## 8.5 Loan assessment and eligibility criteria

Due to the challenges of servicing and pre-financing smallholder coffee farmers and the banks' overall perception that the coffee business is a high-risk industry, commercial banks are very cautious when it comes to granting loans to smallholder farmers and in some cases unwilling to provide smallholder agricultural credit in the first place. To manage risk banks limit the exposure of their portfolio to the agricultural sector, especially to pre-harvest smallholder finance, and at the same time have established very rigid lending parameters, sometimes burdensome, administrative loan assessment procedures and high costs which – as will be shown below – limit access to loans by coffee producer groups considerably.

The main condition is to have the group registration. [...] And the group should do the business before. Maybe, last year, they have sold their coffee to the auction and then we can have the status report from the Tanzania Coffee Board [...]. And the third [condition] is to have a memorandum of understanding between all the parties, the groups, the bank, the coffee curing companies and the TCB. The idea is that - as soon as the money has been received by TCB - they ensure that the money is credited to our accounts for loan liquidations.

**(Ahmad Abubakar, CRDB, Annex A)**

In a nutshell, to gain access to loan facilities of formal financial institutions, producer organizations have to be formally registered before an authorized authority, need to meet a minimum coffee production capacity of 50 metric tons (MT), establish business

plans (including records of past coffee seasons), a loan application letter approved by the whole group (including individual farmers' loan demands), enter specific arrangements with the bank and the TCB to ensure that loans are paid back upon sale of coffee at the coffee auction and, in the case of pre-harvest credit, need to provide collateral, usually through proof of formal ownership of immovable assets at a value of 125 per cent of the loan volume while the collateral requirements are lowered substantially if a loan guarantee by third parties is complemented to the loan arrangement.

One thing that is key [...] is the crop volume. How much for the last three seasons, how much has the group been able to mobilize of the crop? It gives you a very good indication of a good cooperative. Second one, we would require registration, formal registration [...] and we also need to get the [management] board [of the group/cooperative] resolution to borrow. [...] And we also need a resolution drafted at the Annual General Meeting that gives mandate to the board to borrow. And that should include signatures of the attendees as well. And another thing: we want to see a business plan as well as audited accounts. And if it is a company, we would like to get tax payer certificates. [...] And we would also like to have returns of confidence from the registrar as well to make sure that the company is also alive and we are not dealing with a dead company. That is very basic stuff and once we have that we look at the [title] deeds.

(**Carol Nyangaro**, NMB, Annex A)

Many of these bureaucratic and conservative requirements are difficult to meet for coffee producers groups or individual farmers. Most notably, many small-scale producers in Tanzania are not organized in producer organizations in the first place. To become eligible to a loan producer groups can either register as a business entity, as a RPCS or as a community based organization. However, many of the existing groups are often not formally registered since the registration before any of the relevant authorities may be tedious. Moreover, since financial literacy is still underdeveloped, book keeping of business activities and records of past coffee season, which banks typically require, are rarely in place, and if, only for those groups which have already been working with financial institutions.

As another major limiting factor, most of the larger financial institutions require production thresholds or minimum loan volumes which many groups cannot meet. In addition to obvious cost-benefit calculations from a financial service provider perspective, the requested minimum production volume also stems from the current coffee sector regulation in Tanzania which demands producer groups to provide at least 50 MT which is the minimum volume of coffee which may be sold at the auction.

Since the largest financiers in Tanzania, CRDB and NMB, deduct their cost upon sale at the auction, and thus require their clients to sell through this channel, those banks have introduced a minimum volume of 50 MT as a requirement which is hardly negotiable whereas most of the groups cannot produce such a large amount of coffee at the moment.

For me, if a group is producing less than 50 tons, it is difficult. Even for them, if they are producing less than that, it is difficult to break even and they will make no profit out of it. We are not helping them then.

(**Ally Jamal**, Root Capital, Annex A)

According to a report by Rabobank International (2014: 2) only about 70 out of 300 coffee producer groups in Tanzania's coffee sector collect a minimum of 50 MT per coffee season. This limitation also became evident in an interview with a representative of NMB:

You can calculate that 50 MT multiplied by 1,400 TSh which is our current disbursement price for coffee, that will be the minimum loan size that we can offer to a cooperative. That is about 70 million [TSh]. Let us be honest: how many groups will be able to get a loan of 70 million [TSh]? Very few and for most of them the loan size will rather be 30, 40 or 50 million [TSh]. [...] If a farmer has half an acre or two [...], it is just not economic to even think about it as a bank.

(**Carol Nyangaro**, NMB, Annex A)

As a reaction to the recurring leadership and management issues that banks have experienced with producer groups, before qualifying as financial intermediaries, these organizations must first pass the assessment of their management and governance performance which becomes a decisive factor of banks' loan assessment procedures.

When I go in the field, the first assessment that I check is the strength of the group, in terms of how strong it is, in terms of the leadership [...]. For me, it is about the strength and the willingness to commit to and focus on their business. [...] So if I see that a leader is not keen on his business, and you can tell, even the members they can tell you that: 'We have a strong group, but we are not sure about the chairman because he spends more time in politics and he does not focus on these things'. Maybe he has even used part of the group's fund for himself.

(**Ally Jamal**, Root Capital, Annex A)

[We check], first, their leadership [and], second, if their financials are current. [...] When their leadership is stable, their financials are current and they have been audited frequently, we will deal with them, otherwise not.

(**Francis Morel**, Annex A)

## 8.6 Availability of loan schemes

The prevalence of the different loan schemes (as laid out in *Section 8.2.*) differs significantly and, most notably, the actual access to loan schemes is subject to the meeting of specific eligibility criteria imposed by the financial institutions to the borrowers (see previous section). It is important to note that production-related loan products (pre-harvest finance) and harvest purchasing credit facilities (post-harvest finance) are carried out at two different stages of the coffee value addition process and, as a result, differ fundamentally in terms of the associated risk. Most notably, pre-harvest finance is subject to a number of unique hazards which only occur during production – such as weather risks – or before the coffee is delivered to its buyer – such as side-selling coffee to other buyers.

As the supply of loan schemes by the commercial banks follows their own logic of risk minimization rather than adjusting loan products to the actual demand, post-harvest finance facilities are by far the most abundant form of financing since – as has been shown – these coffee collection and marketing loans are typically disbursed against receipts of coffee deposits at warehouses and, thus, easy to monitor. However, the

supply of pre-harvest loan schemes for the acquisition of agricultural inputs and larger investments prior to the harvest is very limited. This is due to a higher risk of loan default and the difficulty and costliness of loan monitoring. Financial institutions are very cautious and usually unwilling to expand their lending through input- and investment schemes. The share of these loans in the banks' portfolios does not exceed 15 per cent of the total lending to coffee smallholders. Often it is considerably lower and sometimes these loans are not offered at all or only against (collateral) requirements which the vast majority of farmers is not able to provide. Even the two commercial banks engaging most actively with smallholder coffee farmers, when interviewed, had adopted a more conservative approach with regards to pre-harvest financing. CRDB has stopped to provide input and long-term farm equipment loans, as many of the loans in the Mbeya and Ruvuma regions defaulted as a consequence of low market prices during the financial crisis causing subsequent side-selling and group disintegration.

We have been expanding lending to the coffee groups when we established the input loans in 2008 but this has come back badly to our bank. Many loans defaulted. That is why we are reducing to grant input loans but rather focus on purchasing loans. The purchasing loan, we can certainly continue to finance it because the risk is very minimal. But the input loans, the repayment is also affected by climatic conditions. There is a lot risk involved.

(Ahmad Abubakar, CRDB, Annex A)

For similar reasons, NMB – in spite of its general commitment to provide comprehensive financial services to the agricultural sector including smallholder coffee farmers – did not offer any input or equipment loans in the North at the time of the survey and, in general, remains cautious when it comes to smallholder pre-harvest finance.

And still we are [...] careful, because on the input side we still face the challenge of side selling of coffee [...]. If you are allowing and you are giving licenses for the privates to buy [coffee] cherry, then that means people can trade the cherry even at night. They are going to the farm, they are harvesting. Tomorrow they say, they did not deduct, the AMCOS, and your input loan is not paid. [If you ask [coffee traders]: 'Will you give fertilizer or chemicals to this term?', I think the answer will be 'No' [...] because they cannot track the coffee. You will give them [the farmers] fertilizer or a chemical but at the end somebody else buys their coffee. So you see, even now, input financing for coffee will still be a challenge unless something is done.

(Robert Pascal, NMB, Annex A)

## 8.7 Discussing the cost and profitability of smallholder agricultural credit

As discussed in the introduction, this study does not assume that loan products are beneficial per se and in each hypothetical scenario. Naturally, loans come at a (often quite substantial) cost for the borrower. In Tanzania, if loan schemes are available for smallholder coffee farmers in the first place, the conditions are usually imposed by the few present lenders. At the time the survey was conducted, the quoted interest rates charged by formal financial institutions ranged between 15 and 22 per cent per annum in local currency. For commercial banks these interest rates include special charges for smaller loan volumes, for borrowers in remote areas and higher cost of loan

assessment and monitoring which are added to the banks base interest rate. Although, the interest rates are negotiable in principal, especially for larger clients, smallholder farmer usually have no bargaining power to debate the price of the loans. It should be noted that the interest rates are sometimes charged on a flat basis and in other cases charged on a reducing balance, in the latter case decreasing with the gradual repayment, as interest is only charged on the outstanding amount of the loan (Ledgerwood 2013: 221ff).

However, the banks also charge different additional fees – either as a flat fee or as a percentage of the interest charged on the loan – for the loan application, administration of the loan including transportation, obligatory credit life and/or funeral insurance products, commitment fees, insurance of assets which are pledged as collateral, or for the opening and administration of bank accounts. These additional cost can be substantial and for the surveyed financial institutions may sum up to another one to four per cent which need to be added to the nominal interest rate to reflect the effective costs of the loan.

The problem that farmers do not know is that there are some hidden costs. When you go to CRDB, they say that their loan is 15 per cent or 18 per cent but when you come to the reality, it is more than 21 per cent or 23 per cent.

(**Asanterabi Msigomba**, KCBL, Annex A)

The effective interest rate includes all these additional costs of a loan and, thus, shows the actual costs of borrowing for clients and the potential revenue earned by the financial institutions (Ledgerwood 2013: 221ff). The effective interest charged by local financial institutions in Tanzania, according to the author's field study, is rather high and can go up to 25 to 30 per cent of the loan volume per annum in local currency, but should also be seen against the high inflation rates in Tanzania.<sup>29</sup> A representative of PASS claimed that the costs for the loans are highly driven by market dynamics and depicted that margins realized by some of the local financial institutions are substantial:

In Tanzania, the interest rates range from 18 to 20 per cent and for some of the big financial institutions they can go up to 30 per cent. If you analyze most of the projects and look at the interest rates and additional charges in between, you can see that it is very challenging for the entrepreneurs to perform. [...] I think they [financial institutions] could go down to about 15 per cent or even less and they would still have their profit. But you know, once the demand is huge compared to the supply side, there is a tendency of having that scenario. But if there would be more banks engaging in lending in such a way that there is more competition that would surely change the picture.

(**Ally Mwajasho**, PASS, Annex A)

Given that effective interest rates charged in Tanzania are rather high, this section explores theoretically and empirically, under which circumstances pre-harvest input finance schemes are profitable from a smallholder coffee farmer perspective. Referring to the critical academic debate about the impact of microcredit, as set out in *Section 5.4.*, the following consideration shall further explore the economics of a loan scheme for agricultural inputs.

<sup>29</sup> Inflation rates averaged at about twelve per cent per annum from 2011 to 2013 (see World Bank 2014a).

Obviously, a loan scheme always comes at a cost whereas that cost is equivalent to the amount of money disbursed on a loan basis multiplied by the effective interest rate charged for that loan (assuming a flat interest rate calculation). Thus, the project which is funded by such an investment needs to be viable enough to generate additional revenues which amount to at least the additional costs incurred or otherwise the loan transaction will result in a net-loss for the borrower. For these obvious reasons, loan schemes are not beneficial under all hypothetical circumstances, but their benefit depends on a number of parameters which shall be explored further below.

In general, the profitability of an agricultural input loan will depend on (1) the costs of the loan scheme while such costs increase with the amount and price paid for agricultural inputs (which is then equivalent to the amount of the funds which need to be disbursed on a loan basis against interest), (2) the effective interest rate charged on the loan, (3) the additional yield generated through the application of agricultural inputs compared to the yield a farmer would have realized without such agricultural inputs (assuming that the farmer does not have access to that loan without the loan facility at hand) and, finally, (4) the price, notably the farm gate price, the farmer received per kg of coffee upon sale.

In mathematical terms, the coffee production related profit  $Y$  (in USD per acre<sup>30</sup>) realized by a coffee farmer is equal to the product of the total amount  $X$  (in kilogram per acre) of coffee sold and the farm gate price  $p_{coffee\,fgp}$  (in USD per kilogram) received by the farmer minus the overall coffee production costs  $C$  (in USD per acre) incurred by a farmer. In a first step, it is assumed that a farmer does not have access nor any expenditures for agricultural inputs but incurs cost of coffee production ( $C$ ), e.g. for hiring of labor, buying of seedlings etc.

$$Y(X, p_{coffee\,fgp}, C_{const}) = X * p_{coffee\,fgp} - C$$

In a second step, now assuming a scenario in which a farmer takes out a loan for agricultural inputs with an effective interest rate ( $I_e$ ) and a loan volume ( $V$ ), the costs incurred for such a loan become part of the overall coffee production costs incurred by the farmer. At the same time, the presumption here is that coffee yields will increase if a farmer applies agricultural inputs, which he is only able to acquire through a loan facility. Thus, a farmer, in an ideal scenario, will realize additional yields  $X_d$  (in kilogram per hectare):

$$Y(X_d, p_{coffee\,fgp}, I_e, V, X, C) = ((X + X_d) * p_{coffee\,fgp}) - (C + (1 + I_e) * V)$$

For the purpose of this analysis, it is sufficient to focus on the additional yield realized and extra costs incurred for the loan scheme while it is assumed that the original coffee yield ( $X$ ) and original cost of coffee production do not change:  $X = X_{const} = 0$  and  $C = C_{const} = 0$ .

### It results:

**Condition I:** 
$$Y(X_d, p_{coffee\,fgp}, I_e, V) = (X_d * p_{coffee\,fgp}) - ((1 + I_e) * V)$$

<sup>30</sup> "Acre" is the commonly used parameter for square measure in Tanzania (rather than "hectare").

It becomes apparent that the profitability of such a loan depends on the effective interest rate of the loan ( $I_e$ ), the additional costs of production which are equivalent to the volume of the loan ( $V$ ), the coffee farm gate price ( $p_{coffee\,gp}$ ) and finally, the additional yield ( $X_d$ ) which is realized through the application of agricultural inputs. Using this mathematical function, the profit can now be calculated based on different, practical scenarios. The following values for the different parameters are based on field level data collected within the scope of the Coffee Partnership for Tanzania in major Arabica growing regions<sup>31</sup>:

$X_d =$	<b>147.6 kg of parchment coffee/acre</b>	$I_e =$	<b>0.25</b>
$p_{coffee\,gp} =$	<b>2.78 USD/kg of parchment coffee</b>	$V =$	<b>65 USD/acre</b>

These values can now be inserted in the profit-function (**Condition I**):

**It results:** 
$$Y = (147.6\,kg * 2.78 \frac{USD}{kg}) - ((1 + 0.25) * 65\,USD) = 329\,USD$$

It becomes apparent that in the case of agricultural input loan schemes for small-scale coffee producers in Tanzania, the additional yield realized through the application of inputs clearly outweighs the additional costs incurred for a loan resulting in an estimated additional profit of 329 USD per acre. To better understand how the different factors influence the profitability of a loan scheme, the profit function is now differentiated with respect to key variables, namely the coffee farmgate price ( $p_{coffee\,gp}$ ) and the effective interest rate ( $I_e$ ).

**Condition I:** 
$$Y (X_d, p_{coffee\,gp}, I_e, V) = (X_d * p_{coffee\,gp}) - ((1 + I_e) * V)$$

**It results: II** 
$$Y' (p_{coffee\,gp}) = X_d = 147.6$$

**III** 
$$Y' (I_e) = -V = -65$$

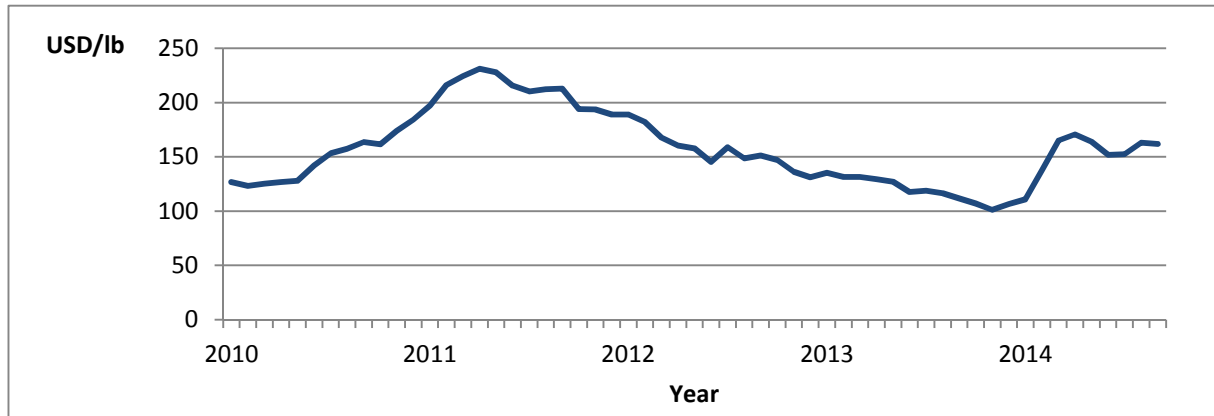
These first derivatives describe how much the profit of the farmer changes if either the coffee farm gate price or the interest rate change by one unit, all other things being equal. It becomes apparent that, based on field level data derived from the Tanzanian coffee sector, the profitability of input loan schemes depends largely on the farm gate price which farmers receive while the interest rate charged by banks for their loans has a rather moderate influence on the additional income. Obviously, if the farm gate price drops under a critical threshold, the farmer will incur a loss. *Figure 8-7* shows the development of the *ICO composite indicator price* for different coffee varieties over the last years. The chart illustrates that the prices for coffee have been highly volatile with drastic changes of more than 50 per cent within a period of a few months. After several years of sustained increases, global coffee prices fell substantially in 2012 and 2013. After a recovery in early 2014, the price fell again at the end of the year. Since the local

<sup>31</sup> All data drawn from and calculated based on a baseline survey executed within the scope of the Coffee Partnership for Tanzania in 2014.  $X_d$  and  $V$  refer to average values generated for a sample of ~400 Arabica producing smallholder households in the Mbeya and Ruvuma regions. The additional costs for inputs  $V$  comprise the total average expenditures for fertilizer, herbicides and pesticides (of all sample farmers who paid between 1 and 500,000 TSh on any of those inputs). The effective interest rate  $I_e$  is an estimate based on the interviews with financial institutions within the scope of this study.



farm gate price paid to farmers in Tanzania correlates largely with the ICO composite indicator price, the chart clearly proves that coffee farmers have to deal with highly volatile coffee farm gate prices, especially if they lack price mitigation mechanisms.

Figure 8-7 – ICO composite indicator price\*, 2010 to 2014 (Own illustration based on ICO 2014a, c)



\* ICO composite indicator price for Colombian Milds, Other Milds, Brazilian Naturals and Robustas

When exploring the overall profitability of agricultural input loans, in addition to the substantial level of price fluctuation, one also has to take into consideration possible risks of crop failure. If the coffee harvest fails or diminishes due to drought, excess rain or exposure to pest and diseases, a farmer will not only lose a substantial share of the expected harvest but will also have to compensate the additional costs which he incurred for the input loan. Another risk which is particularly pronounced in Tanzania is that the agricultural inputs or products provided could be counterfeit and expected yield increases might not materialize. More than that, farmers – if not trained on the correct application of agricultural inputs – might misapply fertilizer which may result in a mid-term loss in soil fertility.

In general, the current low price environment makes it difficult for coffee farmers to justify investments in productivity. Given the considerable level of uncertainty to which a smallholder farmer is exposed when making investment decisions, it would make sense to combine input loan schemes with additional risk mitigation mechanisms such as warehousing and storage facilities and crop insurance products which insure loans against crop failure and, thus, improve smallholders' resilience against perils. *Kilimo Salama*, an insurance provider supported by the *Syngenta Foundation for Sustainable Agriculture*, has piloted and successfully rolled out an index-based, loan-linked fertilizer weather guarantees in Uganda and Kenya. The facility secures pre-harvest input loan schemes granted to small-scale farmers by financial service providers against weather hazards and has been successful in promoting increased investment by farmers (Syngenta Foundation for Sustainable Agriculture 2014).

## 9 Building pathways to inclusive smallholder agricultural finance

Interviews with smallholder coffee farmers and representatives from local financial institutions in Tanzania clearly suggest that while the demand for smallholder agricultural finance – both post-harvest and especially pre-harvest finance – in the coffee sector is substantial, formal financial institutions' current lending does not suffice to meet the existing demand (most notably with regard to pre-harvest finance for agricultural inputs and farm equipment). Although banks are aware of the excessive demand, their rigid lending procedures impair small-scale coffee producers' access to credit.

The findings of this study indicate that the decisive bottlenecks are the lack of aggregation and organization of farmers in well-governed and registered producer organizations that meet the formal financial institutions' eligibility criteria, low production volumes, low financial literacy and inadequate book keeping. In the case of pre-harvest finance, access to credit is hampered by a lack of immovable assets which could be seized as collateral to secure loans. Banks require loan covers since they usually lack alternative instruments to avoid moral hazard, such as effective loan monitoring and sanctioning mechanisms, to track transactions and punish borrowers who fail to comply with their contract obligations.

Based on the analysis presented above, this chapter illustrates possible pathways through which smallholder agricultural finance can be built and scaled up. While the task to increase the provision and success of credit schemes for small-scale coffee producer in Tanzania is certainly complex and needs a joint effort by the various stakeholders involved, the following sections lay out some of the major strategies which could be adopted to improve the scope and accessibility of smallholder agricultural finance. It is particularly by means of a combination of various efforts presented below that local bank and value chain financing of Tanzania's coffee sector will become a more viable option.

### 9.1 Improving organizational development, financial literacy and agronomic practices

For smallholders [...] the problem is that it is usually difficult to get the security, you will find that the security is just the group itself [...]. Of course, we want them to grow. We do not dish out money to find out that nothing has been done with it. That is the most important factor for us to lend to them. If they have a good management, they manage the funds well. So, growth is there, the plan to invest more is there, but it goes hand in hand with the farmer to know, to be aware of what they are doing and to be serious with the business.

(**Shadrack Mtunja**, CRDB, Annex A)

One of the key findings of this study is that formal financial institutions in Tanzania rely on collective farmer entities – usually registered producer organizations – as partners and financial trustees for the provision of loan products to individual small-scale producers. The analysis of Tanzania's formal financial institutions' lending to coffee

smallholders has demonstrated that any financing intervention oriented to coffee smallholders will require a certain level of organizational development to create or strengthen producer groups that can effectively serve the needs of smallholders by acting as aggregation points, thereby reducing transaction costs for the provision of smallholder credit (and other services). Coffee producer groups are the main smallholder intermediaries that fill several roles from bulk purchaser of inputs to primary processor and marketer. Their level of development and management capacity greatly influence the magnitude of the demand for credit that is truly addressable by a financial institution. Given that organizational development is a major challenge in Tanzania, the implication is that significant cooperative strengthening and technical assistance with regard to financial literacy must precede or co-exist with any financing intervention in the country. Thus, building access to inclusive smallholder agricultural finance means, most of all, building well-governed and effectively managed producer organizations. Although weak producer group leadership and management seem to be particularly pronounced in Tanzania, it can be assumed that similar implications also apply to other countries and many other cash crops produced in a smallholder setup.

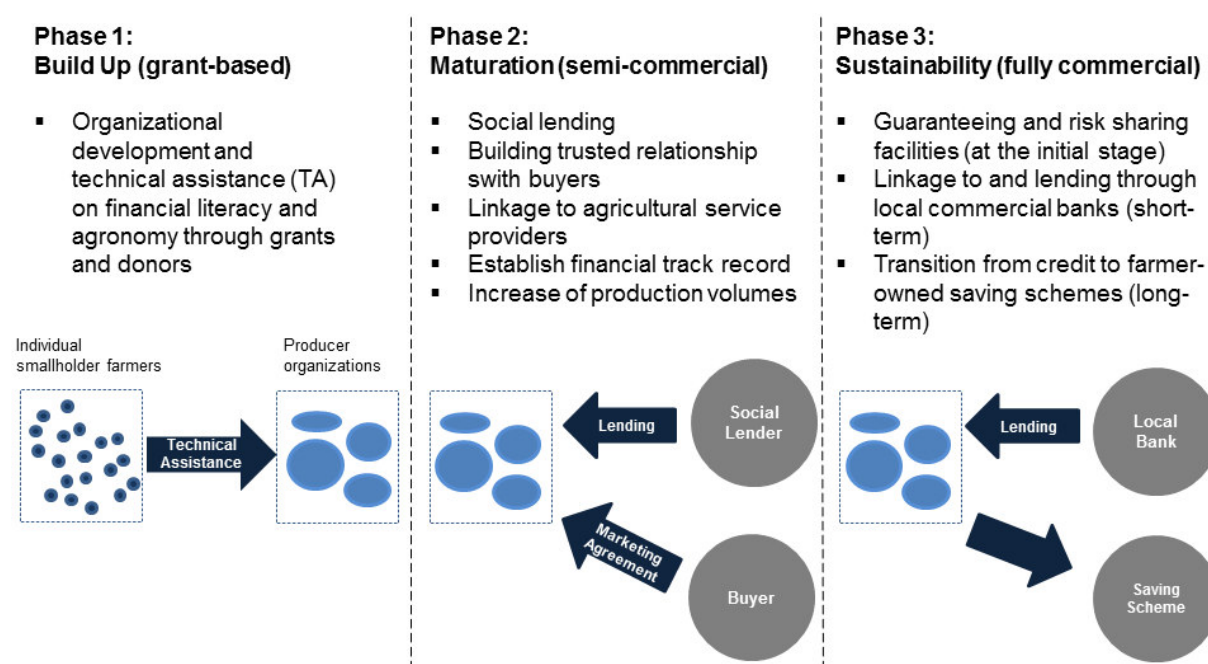
The case study not only revealed that a substantial part of smallholder coffee farmers in Tanzania are not yet (adequately) organized and that many of the existing producer organizations lack effective governance and management which impairs their role as intermediaries between financial institutions and smallholder farmers. More than that, farmers' membership in cooperative unions – such as in the case of KNCU – partly impairs their access to credit as loan arrangements provided by commercial banks are sometimes not tolerated by the unions, while the cooperatives themselves perform poorly as regards offering pre- and post-harvest finance to their members. Obviously, a significant level of technical assistance for organizational development and improvement of financial literacy as well as credit readiness of (both newly established and existing) producer groups is required to help smallholder farmers gain access to financial services.

There is a wide range of technical assistance providers who offer training to small-scale producer groups. Besides numerous non-governmental organizations, recognizing the underlying challenges of smallholder agricultural finance, selected local financial institutions and value chain actors have also developed expertise in capacity building. However, technical assistance and the presented credit readiness assessment approaches come at a substantial cost, a cost which commercially-oriented value chain actors such as buyers, processors or retailers are typically not willing to take. As a result, most of the technical assistance provided to small-scale agricultural producers is either public or donor funded. While in most of the agricultural value chains the much needed capacity building is not provided on a (purely) commercial basis, the fate of smallholder farmers still depends largely on external funding through public or donor funds.

In this light and following *Carroll et al. (2012)*, the most auspicious approach to building inclusive smallholder agricultural finance is through a gradual process (see *Figure 9-1*). In a multi-stage approach, financial services should be adapted to the level of organizational development and the capacity of producer groups. As a first step, small-

scale producers should be assisted to organize in well-governed and -managed producer organizations supported by grant-based initiatives (including technical assistance to existing ones). Ideally, these efforts should be combined with agronomic expertise and basic financial literacy skills so that groups come in a position to increase yields (and meet minimum production volumes requested by local commercial banks) and to be bankable. In fact, the profitability of smallholder credit will increase for both borrowers and lenders if financial services are combined with agronomic extension services.

Figure 9-1 – A gradual approach to building smallholder agricultural finance (Own illustration based on Carroll et al. 2012)



In a second step, as soon as agricultural SMEs have developed a critical level of credit readiness, the producer groups may then build up linkages to and access financial services from social lenders who apply less rigid eligibility criteria and offer loans at favorable conditions. Finally, as soon as producer organizations have proven that they are bankable and have developed healthy financial records, production volumes which meet critical thresholds and have built stable relationships with buyers (possibly supported by means of certification through voluntary sustainability standards), commercial banks with tailored products will become increasingly interested in financing these producer groups, thereby transferring into economically sustainable business relationships.

In Tanzania's coffee sector, it is still unlikely that commercial actors will be willing to bear the initial cost of extensive technical assistance. However, donor- or public sector financed public-private partnership initiatives may provide a setup to incentivize value chain actors to co-fund activities which have a direct impact on their value chain and secure their sourcing of agricultural commodities. The *Coffee Partnership for Tanzania* (CPT), a public-private partnership funded by the *Bill & Melinda Gates Foundation*, managed by *Deutsche Investitions- und Entwicklungsgesellschaft* (DEG) and

implemented in Tanzania's coffee sector by private sector organizations, is a viable example of such model. The project promotes organizational development of smallholder coffee farmers by establishing well-governed and effective producer organizations. These producer organizations form the basis for additional capacity building interventions, namely training in agronomic practices and basic business skills which help coffee small-scale producers increase productivity and adopt a more business-oriented approach. The comprehensive technical assistance package increases the profitability of additional interventions such as access to financial services, certification under sustainability standards and access to reliable markets.

## 9.2 Countering risk perceptions through guaranteeing facilities

The case of Tanzania demonstrates that pre-harvest smallholder agricultural credit is still largely dependent on risk sharing and partial guarantee facilities, such as the one successfully operated by PASS. The overall reservation of local financial institutions and value chain actors such as agricultural service providers, traders and exporters to provide pre-harvest credit is a result of lacking loan controlling and sanctioning mechanisms which would prevent moral hazard. One possible scenario is to mobilize financing through guarantee funds which – if well-designed – can be a starting point for producer groups to gradually migrate into commercially sustainable relationships. The case of PASS in Tanzania demonstrates that guarantee schemes need to be well explained to the beneficiaries (or, rather, should not be disclosed in the first place) to avoid opportunistic behavior.

However, guarantee facilities should have a clear exit strategy and build pathways in the mid- and long-term to commercially sustainable business relationships. To realize this, more commitment will be needed from value chain actors, most of all agricultural service providers, traders, buyers and retailers to partner up with local financial institutions and to enter into risk-sharing arrangements to mobilize additional financing for smallholder farmers.

Guarantee facilities are only worthwhile if the underlying loan distribution models can be operated on an economically viable basis. If structural deficits prevail within the guaranteed credit facilities and default rates are too high, the facility does not fulfill its goal to mobilize commitment in riskier segments of the financial market. Thus, in the case of coffee smallholder agricultural finance in Tanzania, a more effective monitoring of borrowers and their loans will need to be enabled through improved infrastructure, coordination and information flows (see following section).

## 9.3 Improving coordination, access to information and the regulatory environment

The [coffee] sector needs to have a discipline. And this discipline has to come from the regulator and also the cooperative arm. There is a lot of capacity building needed for the cooperatives. There is a lot to be done by the [Tanzania Coffee] Board as well. There is a lot to be done by the other stakeholders in this question as well. So, coordinating all of that to happen, that is how we can stimulate financing in the sector.

(Robert Pascal, NMB, Annex A)

As presented in *Chapter 8*, financial institutions have developed lending schemes which effectively reduce the risk of providing finance to smallholder farmers. Most notably, the warehouse receipt system can be operated at minimal risk to provide post-harvest finance. Repayment of loans can be easily secured through specific arrangements which ensure that the cost of the loan is deducted by the financial institution before the final proceeds are disbursed to the farmers.

Yet, pre-harvest financing continues to be a challenge since financial service providers still lack effective monitoring and sanctioning mechanisms to avoid moral hazard, namely the side-selling of coffee. To track the transactions and loans of smallholder coffee farmers, the transparency and coordination of the sector and the infrastructure in rural areas will need to be further improved to comfort financial institutions. One possible option, proposed by many representatives from Tanzanian financial institutions during the interviews, lies in the introduction and distribution of individual farmer identification numbers or cards combined with an improved coordination among coffee buyers to enable more effective tracking of transactions and coffee sales and, thus, decrease the incidence of side-selling. Given the substantial level of informal coffee-selling practices (also cross-border), however, the required level of formalization and coordination among the various coffee aggregators and collectors seems highly unlikely.

Since financial institutions often lack the level of information they require to assess risks, improving the availability of information and increased transparency, e.g. about governance and management performance of producer groups as well as coffee and cash flows is a crucial pillar to improve the availability of financial services. Assessment of governance and management performance as well as credit readiness assessment of coffee producer groups combined with technical assistance could be a major pillar to close the information gap between lenders and potential borrowers in the rural financial market. Socially-oriented organizations, such as the *Finance Alliance for Sustainable Trade (FAST)* and *SCOPEinsight*, have developed tailored assessment tools for the rating of the governance and management performance as well as the overall bankability of agricultural producer organizations to close the information gap between lenders and borrowers in rural financial markets and thereby to improve access to finance for agricultural SMEs (FAST 2014a; SCOPEinsight 2014). These tools analyze the legal status of groups, the availability and quality of financial information, the groups' credit history and its access to markets, financing needs and guarantees offered in order to rate the credit-worthiness of agricultural SMEs. *SCOPEinsight's* approach is even more comprehensive and looks at the overall business environment (including the availability of input suppliers, markets and external risks) as well as the overall sustainability of an agricultural SME. Such screening systems can be crucial to improve the information flow between lenders and borrowers and to avoid adverse selection problems. In addition, FAST combines the assessment of credit readiness with a technical assistance toolbox and trains agricultural SME's in financial management, accounting, costing, risk management and other topics before linking them to a trusted network of financial service providers through match-making events between financial institutions and representatives of producer organizations (see *Section 9.2*).

Innovative information and communication technologies have opened up opportunities to build information platforms that improve the transparency of the value chain. Tanzania has one of the widest coverage of mobile phones across Africa. Mobile banking applications such as *Vodafone's* technology platform *M-Pesa* (Vodacom 2014) show impressive results in the country's rural areas. They often substitute traditional financial service provision models while reducing the cash transportation costs and improving the ability to monitor and trace transactions. At the time of the survey, banks such as KCBL and FINCA, were already cooperating with community-based M-Pesa agents through which loans could be serviced and repayments made. Such facilities could be further utilized to improve oversight in the sector and to improve loan controlling, thereby reducing the transaction costs associated with the administration of financial products. As a reaction to problems with monitoring of post-harvest loans, *TechnoServe*, an US American NGO, has developed an online transparency system and an SMS book keeping tool that both aim at providing detailed information on the performance of producer organizations, thereby promoting market transparency and reducing corruption across the value chain to stimulate financial institutions willingness to provide finance (TechnoServe 2014). In addition, the issuance of title deeds, most of all for land, would be an important step to improve the availability of collateral which could be seized to secure loans. As a matter of fact, smallholder farmers in Tanzania in many cases have immovable assets but simply lack formal proves of ownership.

#### 9.4 Building additional capacity of financial service providers

The survey of formal financial sector finance in Tanzania has disclosed that lending to smallholder coffee farmers with tailored products is still addressed only by a few financial institutions. Further financial institutions should rethink the prevalent perception of coffee as a high-risk enterprise and focus on the opportunity which smallholder agricultural finance presents for the financial sector. The interviews revealed that many banks are in the process of reviewing their strategies on agricultural finance and these financial markets dynamics should be exploited to channel further capital into the coffee sector. In addition, microfinance institutions should be further encouraged to develop specific loan products for agricultural purposes. Although FINCA is already piloting feasible models of smallholder agricultural finance, financial institutions will require additional technical assistance to improve their agricultural lending expertise. The *PlaNet Finance Group*, an international organization which aims at improving access to financial services for people living in poverty, supports financial institutions in developing tailored products for clients from the agricultural sector, thereby trying to address the lack of financial services in rural and agricultural sectors (see PlaNet Finance 2014). If more banks are providing services to smallholder coffee farmers, this will largely increase the scope of financial services and elevate the – still moderate – level of competition among financial institutions and presumably result in a reduction of the costs which financial service providers charge for their products. As discussed in *Section 8.7.*, the cost for loans is in some cases substantial and may drive borrowers into indebtedness if expected yields or proceeds do not materialize (.e.g. due to external factors such as unstable weather patterns or volatile prices). In order to improve financial inclusion, banks should address the problems of limited access,

but also of too stringent conditions for many potential customers through the development of more appropriate products and services, tailored to people living in the rural parts of the country.

## 10 Conclusion

There is no doubt that the demand for smallholder agricultural pre- and post-harvest finance is enormous in Tanzania. Given that repercussions of the climate change have already started to affect smallholder coffee farmers in Tanzania (and elsewhere), besides the need for production and marketing finance, farmers will also increasingly rely on additional capital to invest into adaptation techniques and equipment, such as irrigation schemes, to secure a stable production and build resilience against changing weather patterns. This analysis has clearly displayed the potential beneficial effects of smallholder agricultural finance, most of all credit facilities for small-scale coffee producers, and its transformational role in promoting rural development. Not only does pre-harvest finance help farmers increase production volumes and quality of their produce (and thus income from coffee), but – as the case of price management through the warehouse receipt financing demonstrates – can also increase the proceeds realized from the sale of agricultural commodities. The capacity of the *Tanzanian Warehouse Licensing Board* should be improved to pave the way for the expansion of the warehouse receipt system financing. The development of effective distribution channels for agricultural inputs, e.g. through agriculture-focused commitment savings or against warehouse receipts, is an important complementary intervention to make the much needed agricultural inputs more available.

Yet, as the case study of Tanzania's coffee sector has clearly demonstrated, the provision of smallholder agricultural finance in rural financial markets remains a challenge. The theoretical concepts of *NIE*, most notably adverse selection and moral hazard, as laid out in *Chapter 4*, clearly apply to the arrangements in smallholder credit markets with asymmetrical information and high transaction costs in Tanzania. By transacting loan schemes through producer organizations as financial intermediaries, financial institutions have developed models which reduce transaction costs of smallholder agricultural finance to an economically viable level. At the same time, these collective credit schemes create interdependence between group members which allows financial institutions to exploit group liability and enforcement mechanism to reduce the prevalence of moral hazard in a context where many individuals are not in a position to provide sufficient covers to secure loans and, thus, can be neither sanctioned nor monitored effectively. However, this presumes that producer groups are loyal, well-governed and -managed and have a critical level of cohesion which, as discussed, seems to be not always the case in Tanzania. If farmer organizations are affected by intransparency, weak leadership and ineffective management, moral hazard is more likely to occur, and in such a situation, the lending financial institution has to cope with a new agency problem while the original objective was to mitigate such problems in the first place by working with the management of producer groups. In Tanzania, it seems that financial institution try to compensate the risk of moral



hazard through a very rigid loan assessment and strict eligibility criteria, which in turn shall avoid adverse selection (and moral hazard), but bears the risk of credit rationing since many coffee producer organizations do not qualify for loans under these circumstances.

In that light and with regard to the underlying research question of this analysis, the roadblocks to building pathways to inclusive smallholder agricultural finance stem from the micro-production level, most importantly a lack of effective and well-governed producer organizations, low levels of education and financial literacy of small-scale producers and a lack of means to prevent and sanction opportunistic behavior in pre-harvest finance arrangements in the Tanzanian coffee sector. Although the findings and recommendations presented in this study have been derived from country- and business sector-specific empirical data, many of the diagnoses may also be applicable in other contexts. Most notably, challenges such as a lack of organizational development, agronomic knowledge and financial literacy are not Tanzania-specific but apply to other agricultural sectors with small-scale farming systems in many other countries in SSA and in other parts of the developing world.

Despite the substantial need for smallholder agricultural finance, the provision of credit facilities ought to be adapted to the specific needs of producer groups and also take their level of organizational development and business capacity into consideration. Most of all, borrowers must be in a position which allows them to successfully manage loans and to avoid indebtedness. It is only through technical assistance that the demand for financial services of hundreds of millions of smallholder farmers who still lack access to reliable and affordable financial services can be effectively addressed. Thus, for smallholder agricultural finance to be successful, the provision of financial services will need to be accompanied by extensive capacity building, including organizational development, financial literacy and agronomy skills. However, such efforts are still largely driven by donors and grants while commercial key players in agricultural value-chains still lack commitment to invest into the sustainability of their commodity chains, most of all in SSA. In the light of the precarious situation of millions of smallholder farmers in the global South, international buyers, retailers and, most of all, consumers in the developed world will have to play a more responsive part in the future to make financial inclusion, poverty alleviation and food security reality. Voluntary sustainability standards ought to play an even stronger role in securing the sustainability of and the well-being along global agricultural value chains while this will have to go hand in hand with a more responsible consumption behavior in the industrialized countries. In addition, many of the international and local agricultural commodity chains, such as the one for coffee, are skewed and dominated by large traders, exporters and retailers. Smallholder farmers will need to be empowered, mainly by helping them form strong and well-managed producer organizations, to take a more autonomous role in the global value chain.

While this thesis focused on smallholder agricultural *credit* provided through *formal* financial institutions as a driver of rural development, the business situation of small-scale coffee producers and the market dynamics in agricultural commodity markets have revealed that in order to build much-needed resilience at the small-scale producer level, additional financial services such as savings and insurance products need to be

added to the mix. The bottom line – when discussing smallholder agricultural finance – is that credit products will always come at a substantial cost which is incurred by low-income households which often lack the means and management to accumulate capital. Smallholder farmers should be enabled not to rely exclusively on pre-financing facilities in the medium term, but loan products should always be combined with incentives to save. While the propensity and ability to save is still largely limited in Tanzania as it is in other developing countries (also due to low coffee prices), the undercapitalization of smallholder farmers should also be addressed through improved financial management and dedicated savings schemes, such as the agriculture-focused commitment savings discussed in *Section 8.4.3.*, which enable farmer to invest into their production systems, ideally through their own income at no additional cost. In that context, and especially for small-scale producers who do not yet qualify for formal financial services, informal and semi-formal financial institutions such as producer group- or community-based saving or credit facilities, if well-managed, can be an important basis for improving rural livelihoods. Given the considerable level of uncertainty to which a smallholder farmer is exposed when making investment decisions, it would make sense to combine pre-harvest loan schemes with additional risk mitigation mechanisms such as warehousing and storage facilities and crop insurance products which insure loans against crop failure and thus improve smallholders' resilience against perils. Further research is needed to explore such synergies.

To trigger more financing for smallholder farmers, innovative approaches and new strategies of risk management will need to be explored. At the level of ICT, new information channels and platforms could form the basis for more effective loan controlling in the future. At the financial service provider level, further research should be dedicated to the role of value chains, marketing agreements and voluntary sustainability standards as factors for risk mitigation and sharing. A very recent and promising research project by the *International Finance Corporation (IFC)*, the *International Trade Council (ITC)* and the *Financial Alliance for Sustainable Trade (FAST)* explores the role of sustainability standards, most of all certification schemes, in facilitating access to financial services. Certification can help build farmer loyalty vis-à-vis coffee buyer and, thereby, form a basis for the establishment of trusted business relationships which mitigate the incidence of moral hazard in the form of side selling. As a result, certification can possibly facilitate access to financial services, e.g. by reducing the (perceived) risk on the side of the financial institution while most financial service providers – to date – do not take such rationale into consideration.

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# Annex A – Overview of interviews with representatives of financial institutions

## List of core interviews (transcribed)

Institution	Date of Interview	Place of Interview	Name of Interview Partner(s)	Position of Interview Partner(s)
CRDB Bank Plc	July 21st, 2013	Mbeya branch	Mr Ahmad Abubakar	Manager Business
Private Agricultural Sector Support (PASS)	July 26th, 2013	Mbeya branch	Mr Ally Mwajasho	Branch Manager
Kilimanjaro Cooperative Bank Ltd.	August 2nd, 2013	Moshi branch	Mr Asanterabi Msigomba	Marketing Manager
			Mr Ombeni Masaidi	Credit Manager
National Microfinance Bank	August 2nd, 2013		Mr Carol I. Nyangaro	Research Analyst, Agribusiness
CRDB Bank Plc	August 7th, 2013	Moshi branch	Mr Francis Morel	Branch Manager
Uchumi Commercial Bank	August 12th, 2013	Moshi branch	Mr Israel Lyatuu	Credit Manager
National Microfinance Bank (NMB)	August 16th, 2013	Head Office Dar es Salaam	Mr Robert Pascal	Head of Agribusiness
			Mr Richard Mwakalukwa	Head, Credit Risk Department
			Mr Carol I. Nyangaro	Research Analyst, Agribusiness
CRDB Bank Plc	August 16th, 2013	Head Office Dar es Salaam	Mr Nicomed Bohay	Senior Manager - Agri Business
			Mr Shadrack Mtunja	Relationship Manager - Agri Business
			Mr Alpha W. Magubila	Principal Relationship Manager - SME I
National Microfinance Bank (NMB)	August 20th, 2013	Moshi branch	Mr Pharseko Said. A.	Commercial Manager
Kilimanjaro Cooperative Bank Ltd.	August 20th, 2013	Moshi branch	Mr Ombeni Masaidi	Credit Manager
Kilimanjaro Native Cooperative Union (KNCU)	August 22nd, 2013	Moshi	Mr Gerald F. Msilanga	Farmers Technical Services Manager
FINCA	August 22nd, 2013	Moshi branch	Mr John Shayo	Branch Manager
Root Capital	August 26th, 2013	Arusha branch	Mr Ally Jamal	Loan Officer, Tanzania
Equity for Tanzania	August 28th, 2013	Moshi branch	Mr Israel Ndanshau	Branch Manager
NMB Foundation for Agricultural Development (NFAD)	September 6th, 2013	Moshi branch	Mr Alfred Benedict Chonya	Cooperative Development Officer

## List of additional interviews

Institution	Date of Interview	Place of Interview	Name of Interview Partner(s)	Position of Interview Partner(s)
Commercial Bank of Africa (CBA)	July 21st, 2013	Mbeya branch	Mr Seifdin Kabange	Retail Branch Manager
National Bank of Commerce (NBC)	July 21st, 2013	Mbeya branch	Mr Jones Mugyabuso	SME Banking
Exim Bank	July 24th, 2013	Mbeya branch	Mr Iddy Mwacha	Branch Manager
FINCA Tanzania	July 25th, 2013	Mbeya branch	Mr Paulo Kanyara	Branch Manager
Diamond Trust Bank (DTB)	July 26th, 2013	Mbeya branch	Mr Beda B. Magwira	Branch Manager
National Microfinance Bank (NMB)	July 26th, 2013	Mbeya branch		
Small Entrepreneurs Loan Facility Project (SELF)	July 26th, 2013	Mbeya		
Tanzania Investment Bank Ltd. (TIB)	July 26th, 2013	Mbeya branch	Mr Kenneth Njau	Zonal Manager
National Bank of Commerce (NBC)	August 1st, 2013	Moshi branch	Mr Festus Markus Ikambi	SME Banking
Stanbic	August 1st, 2013	Moshi branch	Mr Ibrahim Sangawe	Business Banker
Exim Bank	August 2nd, 2013	Moshi branch	Mr Vedastus P. Mbanga	Branch Manager
Kenya Commercial Bank (KCB)	August 6th, 2013	Moshi branch	Mr Oforo Andrea	Branch Manager
Savings and Credit Cooperative (SACCOs)	August 6th, 2013	Kirua	Ms Sesilia Paschal Marimbo	Loan Officer
Azania Commercial Bank Ltd. (ACB)	August 7th, 2013	Moshi branch	Ms Hajira Mmambe	Branch Manager
Diamond Trust Bank (DTB)	August 7th, 2013	Moshi branch	Mr John Mwingira	Branch Manager
Exim Bank	August 13th, 2013	Head Office Dar es Salaam	Mr Christopher L. Mgani	Assistant Manager, Credit
Promotion of Rural Initiative and Development Enterprises Limited (PRIDE Tanzania)	August 22nd, 2013	Moshi branch		
Meru Community Bank	August 24th, 2013	Usa River branch	Mr Jofram Mbinga	Branch Manager
			Mr Lazaro Andrew	Supervisor - Projects and Credit
			Mr Zakayo Penuel	Finance Officer
Tanzania Investment Bank Ltd. (TIB)	August 26th, 2013	Arusha branch	Mr Zacharia Kicharo	Principal Officer - Project Finance
African Banking Corporation (ABC)	August 26th, 2013	Arusha branch	Ms Anna Boniface Kavishe	Branch Manager
National Bank of Commerce (NBC)	September 8th, 2013	Head Office Dar es Salaam	Mr Isidori Msaki	Head of Retail Credit

## Annex B – Overview of interviews with smallholder coffee farmers

Name of Interviewee	Interview #	Date of Interview	Region	District	Village
Abel Kabuje	1	July 7th, 2013	Mbeya	Mbeya Rural	Iwiji
Tabia Dedenga	2	July 17th, 2013	Mbeya	Mbeya Rural	Idugumbi
David Msoba	3	July 17th, 2013	Mbeya	Mbeya Rural	Idugumbi
Zakayo Mwasote	4	July 17th, 2013	Mbeya	Mbeya Rural	Utengule
Peter Mwashitete	5	July 17th, 2013	Mbeya	Mbeya Rural	Utengule
Ambakisye Kamukea	6	July 17th, 2013	Mbeya	Mbozi	Halungu
Alam Kayange	7	July 18th, 2013	Mbeya	Mbozi	Halungu
Sharif Mpendakazi	8	July 18th, 2013	Mbeya	Mbozi	Halungu
Sikujua Msukwa	9	July 19th, 2013	Mbeya	Mbozi	Nkanga
Daison Mwamboneka	10	July 19th, 2013	Mbeya	Mbeya Rural	Utengule
Lastowi Yilima	11	July 19th, 2013	Mbeya	Mbeya Rural	Utengule
Awyadwile Mwasala	12	July 19th, 2013	Mbeya	Mbeya City	Isonda
Waziri Mwantege	13	July 19th, 2013	Mbeya	Mbeya Rural	Izumbwe
Isaka Mbughi	14	July 20th, 2013	Mbeya	Ileje	Luswisi
Langson Kapushi	15	July 20th, 2013	Mbeya	Ileje	Luswisi
Obadia Kasekwa	16	July 20th, 2013	Mbeya	Ileje	Luswisi
Ombeni Isaya Mafie	17	August 21st, 2013	Arusha	Arumeru	Ngyani
Elisante Nanyaro	18	August 21st, 2013	Arusha	Arumeru	Kipande
Sifael Matayo	19	August 23rd, 2013	Arusha	Arumeru	Kilinga
Godwin Mafiye	20	August 23rd, 2013	Arusha	Arumeru	Kilinga
Isaya Matayo Nasari	21	August 23rd, 2013	Arusha	Arumeru	Kilinga
Emanuel Abraham Pallangyo	22	August 26th, 2013	Arusha	Arumeru	Songoro
Samuel Nanjaro	23	August 26th, 2013	Arusha	Arumeru	Songoro
Nkirwa Elisamia	24	August 27th, 2013	Arusha	Arumeru	Nguruma
Naiman Lodman	25	August 27th, 2013	Arusha	Arumeru	Nguruma
Jacobo Sway Kyaaya	26	August 27th, 2013	Arusha	Arumeru	Nguruma

## Annex C – Coffee sector organization and key stakeholders in Tanzania

### **Tanzania Coffee Board (TCB)**

Responsible for regulating the coffee industry in Tanzania and advising the Tanzanian government on all matters related to the growing, processing and marketing of coffee within and outside the country. The TCB is in charge of issuing different coffee buying, processing and marketing licenses. Furthermore, the MAFC (see below) has delegated most of the coffee development activities to the TCB. The TCB organizes the Moshi-based coffee auction during the coffee harvesting season. It is funded by the Tanzanian government and retrieves additional proceeds through tax and fees on coffee sales at the auction.

### **Ministry of Agriculture, Food Security and Cooperatives (MAFC)**

Responsible for formulating, coordinating, monitoring and evaluating the implementation of relevant policies and services (such as research, extension and training) in the agricultural sector. Moreover, the MAFC is monitoring crop regulating institutions such as coffee, cotton and cashew boards. The MAFC oversees and regulates the cooperative unions. It provides policy guidance and the operational framework that is geared towards restructuring cooperatives to operate on an independent, voluntary and economically viable basis and to develop into centers for providing and disseminating agricultural inputs, technology and information.

### **Tanzania Coffee Research Institute (TaCRI)**

TaCRI was incorporated in 2000 and is a stakeholder owned, non-profit company, with an emphasis on stakeholder led, demand driven research for development. Its mission is to develop and disseminate appropriate technologies to increase coffee production, and has spearheaded the drive for increased production, multiplication and distribution of improved varieties of coffee seedlings.

### **Tanzania Coffee Association (TCA)**

TCA was founded in 1997 as a successor to the Tanzania Coffee Traders Association. As a private association of coffee traders, TCA has a vision to be an association in which all the coffee stakeholders co-exist peacefully, committed to performing various activities in promoting meaningful competition. Its focus is on ensuring that the coffee industry is sustainable at all levels, and improves the livelihood of the coffee farmers

## Annex D – Major coffee producer organizational patterns in Tanzania

### **Producer Groups and Producer Organizations (POs)**

Groups of small-scale coffee producers not associated with any cooperative union with varying levels of organization. While producer groups – if at all – are loosely organized – often around central processing units –, POs have specific defined organizational roles, elected management committees and sometimes by-laws. Producer groups often receive support from value chain actors such as coffee traders and exporters who promote their organizational development and registration as a formal entity. Coffee producer organizations which are not associated with a cooperative union (see below) can be registered as a *community-based organization* (CBO) or as a *farmer business society* (FBS). In Tanzania, there are about 300 of such producer groups/organizations which vary in terms of size, ranging from 20 to up to 300 members.

### **Rural Primary Cooperative Societies (RPCSs)**

RPCSs are village-level associations of farmers which often act as an agent and aggregator for the cooperative union or private coffee buyers. There are roughly 300 RPCSs which have a role as coffee aggregation points in Tanzania. The organizations are usually substantially larger than producer groups outside the cooperative structures and membership numbers often go up into the four-digit level.

### **Cooperative Unions**

Umbrella associations of RPCSs which typically buy, store, process coffee in their own facilities to market it to (international) buyers thereafter. Since the issuance of the 1991 Cooperatives Act, cooperative unions are private entities with voluntary membership.

### **Other apex structures**

Besides the cooperative unions, there are additional umbrella associations who engage in marketing and additional services for small-scale producers. Among the most important of these apex organizations in Tanzania at date are *Shiviwaka* in Mbeya and the *Tanzania Coffee Farmers Alliance* in Arusha and Kilimanjaro (both apex organizations were formed with support of HRNS) and *G32 Kilimanjaro New Co-operative Initiative* whereas the latter two are comprised of RPCSs which have formerly been associated with KNCU.



## Annex E – Overview of financial service providers engaging in financing smallholder coffee farmers in Tanzania

**CRDB Bank Ltd. (CRDB)** is a private commercial bank, Tanzania's largest by assets with a total asset value of 3.5 trillion Tanzanian Shillings (hereinafter TSh) and gross advances of about two trillion TSh in 2013 (CRDB 2014). The Bank was established in 1996 to succeed the former Cooperative and Rural Development Bank and Tanzania Rural Development Bank, which was a public institution with majority of shares held by the government of the United Republic of Tanzania. Currently, the Danish International Development Agency (DANIDA) holds the largest share in the bank (30 per cent). The lending to the coffee sector amounts to about 160 billion TSh at the corporate level (including loans to cooperative unions) and another 20 billion TSh at the SME level including loans to coffee producer organizations and to SACCOs (the latter via the bank's subsidiary CRDB Microfinance Services). In 2013, about 60 per cent of CRDB's total lending portfolio is made up of loans to clients from the agricultural sector and CRDB was the largest lender to the agricultural sector in terms of volume in Tanzania.

The **National Microfinance Bank Ltd. (NMB)** is one of the largest commercial banks in Tanzania. After its establishment in 1997, the bank has been privatized making the Rabobank Group (34.9 per cent) and the government of Tanzania (31.8 per cent) its largest shareholders. The bank's total asset value as of December 2013 was about 3.3 trillion TSh with gross advances (loans) of 1.6 trillion TSh (NMB 2014). The NMB agribusiness department offers a range of financial services to individual farmers, producer organizations, input suppliers, processors, traders and exporters. In 2013, at the corporate level, about 200 billion TSh were disbursed to the coffee sector as working capital loans via the warehouse receipt system and the bank disbursed limited funds as short- and long-term pre-harvest loans to farmers.

The **National Bank of Commerce Ltd. (NBC)** is a large commercial bank with an asset value of about 1.5 trillion TSh and a gross lending volume of about 700 billion TSh (NBC 2013). The Barclays Africa Group is its biggest shareholder (55 per cent) but the government of Tanzania (30 per cent) and the International Finance Corporation (IFC) (15 per cent) retain a considerable share in the bank respectively. NBC's slight lending to the Tanzanian coffee sector is granted to commercial clients such as estate producers or downstream coffee processors and aggregators, especially in Mbeya. The bank has recently established an 'agriculture department' at the corporate level that is in the process of developing coffee-sector oriented loan products.

**Exim Bank Ltd. (EXIM)**, established in 1997, is among the largest banks in Tanzania with total assets in the amount of 1.1 trillion TSh and gross advances of about 500 billion TSh in 2013 (Exim Bank 2014). The bank has a focus on financial services for the corporate level primarily targeting the manufacturing and tourism sectors, but has also been engaging in

the coffee sector at the cooperative union level providing working capital credits to the *Association of Kilimanjaro Coffee Growers* (AKSCG) for several years, while these loans have been partially guaranteed by PASS.

**Tanzania Investment Bank Ltd. (TIB)** is a wholly government-owned development finance institution. It was established in 1970 as a development finance institution and later, in 1995, transformed into an investment bank with the mission to provide investment banking services on a commercial basis especially to the agricultural sector. TIB added an 'agriculture lending window' in 2010 to channel money into the agricultural sector. As of August 2013, the loan portfolio of the bank grew to 247 billion TSh, whereby 163 billion TSh were medium and long-term loans. As of June 2012, the bank's net asset value amounted to 314 billion TSh.

**Root Capital** is a nonprofit social investment fund providing financial services ranging from production-level short- and long term arrangements (investment loans of up to 60 months) to export financing and downstream value chain finance. Root Capital is operating all across Tanzania and has been financing farmer groups for the purchase of CPUs in the Ruvuma and Mbeya regions in the past. In 2010 and 2012, Root Capital obtained two loan guarantee agreements (in the overall amount of about eleven million USD) of the *United States Agency for International Development* (USAID). The guarantees back as much as 50 per cent of an outstanding loan balance and are intended to strengthen Root Capital's ability to finance loans to SMEs and farmer groups in Tanzania and other countries (Root Capital 2014). Root Capital's financing activities usually rely on selling agreements with buyers which serve as soft collateral and ease demanded requirements on the side of small-scale borrowers supported by strong market access providers. This enables Root Capital to also provide limited funds for pre-harvest input- and equipment finance.

**Uchumi Commercial Bank Ltd. (UCB)** is a regional commercial bank, licensed to operate in the Kilimanjaro region. Its biggest shareholder is the Northern Diocese of the Evangelical Lutheran Church in Tanzania. The bank's total assets are valued at about 15 billion TSh and its total lending portfolio sums up to about eight billion TSh as of September 2013 while the bank is planning to decouple its portfolio over the next years (UCB 2014). Agricultural loans make up 43 per cent of the bank's total lending activity, of which 20 per cent comprises lending to the coffee sector.

**Kilimanjaro Cooperative Bank Ltd. (KCBL)** is a community bank founded in the Kilimanjaro region in 1995, by RPCSs who are the main shareholders of the bank. The bank's initial capital was subscribed to RPCSs, SACCOs and cooperative unions. In 2013, the bank had a total lending portfolio of four billion TSh of which 60 per cent was extended for agricultural activities (70 per cent of which was post-harvest financing of crop collections while pre-harvest input and equipment financing made up 15 per cent of the agriculture related portfolio respectively) whereas the remaining 40 per cent are borrowed to SACCOs, companies and individuals, typically for non-agriculture related loans.

**Meru Community Bank Ltd. (MECOB)** is a community bank recently established in the Arusha region in 2011, with a total portfolio of about 0.5 billion TSh in 2013. When

interviewed in 2013, the bank was expecting to increase its portfolio to up to two billion TSh in the course of 2014 and was piloting input loan schemes for coffee farmers in the Arumeru district. The bank had also developed plans to introduce post-harvest loans via the warehouse receipt system and to expand its still moderate volume of lending to coffee smallholders.

**Equity for Tanzania (EFTA)** is a farm equipment finance company operating in the Kilimanjaro and Arusha regions since 2004 with the vision to support small enterprises and farmers. EFTA focuses on a single equipment finance loan product targeted at entrepreneurs with viable expansion plans who cannot access finance from conventional financial institutions. As of September 2013, the organization had granted investments in the amount of about 500,000 USD of which 16 per cent were for primary agriculture related projects (EFTA 2014). Lending over the last years has mostly been to mid-sized individual farmers but some few group lending schemes have also been operated successfully. A new loan product specifically designed for agricultural investments was planned to be launched in the course of 2014. EFAT has recently expanded to Mwanza and there are plans to further expand to other regions such as Dodoma, Morogoro and Mbeya in the future.

**The Private Agricultural Sector Support Trust (PASS)** is a facility established in 2000 and operating exclusively in Tanzania as a registered as non-profit, non-governmental organization since 2007, to stimulate investments and growth in commercial agriculture by providing a combination of financial and business development services to its clients and by offering a guaranteeing facility for loans to agricultural producer groups (and other financial intermediaries such as microfinance institutions or community banks), thereby helping small-scale producers and groups to meet collateral requirements of financial institutions, especially for the riskier input and investment pre-finance facilities.

Founded in 1998, **FINCA Tanzania (FINCA)** is a microfinance institution operating across Tanzania aiming to provide financial services to low-income entrepreneurs mainly in the manufacturing and merchandise sectors, but also starting to extend loans to clients from the agricultural sector, including coffee producers.





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