



# Value Chains in Agricultural and Green Microfinance



## UMM Thematic Paper

by the e-MFP University Meets Microfinance Action Group

11<sup>th</sup> University Meets Microfinance Workshop  
Frankfurt School of Finance & Management

July 3<sup>rd</sup> & 4<sup>th</sup> 2014

## ABOUT UNIVERSITY MEETS MICROFINANCE

The growing interest by students and academics as well as the increasing need for knowledge creation and dissemination in the microfinance sector, led to the launch of UMM by PlaNNet Finance and Freie Universität Berlin in 2009. UMM is a European initiative which fosters cooperation between universities, students in Europe and microfinance practitioners to contribute to microfinance innovation and education for development.

UMM is financially supported by the European Commission in the framework of its Development Education and Awareness Raising (DEAR) program, by the European Microfinance Platform (e-MFP), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), the Agence Française de Développement (AFD), the European Investment Bank Institute (EIB-I), the Frankfurt School of Finance & Management and Capgemini Italia (country partner Italy). All UMM activities are carried out under the umbrella of the European Microfinance Platform (e-MFP) in the frame of the e-MFP UMM Action Group.

[www.universitymeetsmicrofinance.eu](http://www.universitymeetsmicrofinance.eu)

## ABOUT THE EUROPEAN MICROFINANCE PLATFORM

The European Microfinance Platform (e-MFP) was founded formally in 2006. e-MFP is a growing network of over 120 organizations and individuals active in the area of microfinance. Its principal objective is to promote cooperation amongst European microfinance bodies working in developing countries, by facilitating communication and the exchange of information. e-MFP members include banks, financial institutions, government agencies, NGO's, consultancy firms, researchers and universities. e-MFP's vision is to become the microfinance focal point in Europe linking with the South through its members. [www.e-mfp.eu](http://www.e-mfp.eu)

The 11<sup>th</sup> University Meets Microfinance workshop on "Value chains in Agricultural and Green microfinance" took place at the Frankfurt School of Finance & Management on July 3rd & 4th, 2014. This Workshop was organized in close cooperation with the Frankfurt School of Finance & Management and International Advisory Services. Special thanks to the e-MFP "Microfinance & Environment" Action Group and the action group head, MicroEnergy International in their collaboration and organization of the 11th UMM Workshop.



## UMM would like to thank the following people for their participation:

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Ministry of Finance



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## Foreword from the European Microfinance Platform

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The European Microfinance Platform (e-MFP) is pleased to present the latest workshop report in the "University Meets Microfinance (UMM) Action Group Series". This issue focuses on the output of the 11<sup>th</sup> University Meets Microfinance Workshop "Value Chains in Agricultural and Green Microfinance," which took place in Frankfurt the 3<sup>rd</sup> and 4<sup>th</sup> of July 2014.

This workshop is special for e-MFP for two reasons. First, it is the result of the collaborative work of two of our Action Groups "University Meets Microfinance" and "Microfinance & Environment" and we'd like to thank all the members of these AGs for their hard work and commitment and congratulate them for involving such a large number of e-MFP members in the organization of the workshop. Second, in 2014 we are celebrating, on the one hand, the International Year of Family Farming (IYFF), and on the other, the 5<sup>th</sup> European Microfinance Award on "Microfinance and the Environment"; therefore, we are proud to see how the work of our AGs responds to international trends and contributes to improve the knowledge and practices in two fields that are of utmost importance for the microfinance sector: agriculture and environment.

The workshop received a lot of interest. It gathered more than 80 participants from top European universities and practitioner organisations, resulting in two intense days of discussion on experiences and research on agricultural and green microfinance. We are happy to share with you in this publication the main findings and conclusions.

Since its inception, the European Microfinance Platform, a growing network of over 120 organisations and individuals active in the area of microfinance, has prioritized the role of research as an essential

component for the development of good and sustainable microfinance practices. Therefore, in 2010, the e-MFP University Meets Microfinance Action Group was set up as a result of the interest of several e-MFP members to further enhance exchange and cooperation between microfinance practitioners, researchers, academics and talented students from universities across Europe. Its main purpose is to perform as an innovative task force active at the different levels of education, knowledge creation, capitalization and dissemination in the fields of microfinance and inclusive finance contributing to the development of the microfinance sector.

For e-MFP, it is a pleasure to support excellent and value added initiatives such as the UMM workshops not only because they provide students and academics with the opportunity to present and discuss the outcome of their research with practitioners and contribute to current debates, but also because practitioners get exposure to cutting-edge research and meet talented, future young professionals, academics and other microfinance experts. We thank all the experts involved in this project for their valuable contributions to the publication and invite you to explore the latest findings to stimulate further reflection and encourage additional research in microfinance.

Best wishes,  
Christoph Pausch, e-MFP Executive Secretary



## Foreword from the Frankfurt School of Finance & Management

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This year's University meets Microfinance (UMM) Workshop on **Value Chains in Agricultural and Green Microfinance** has brought together key actors from theory and practice of financial inclusion, including practitioners, professors, experts and students and fostered a fruitful exchange of knowledge and experience on this topic.

The Frankfurt School of Finance & Management is proud of having hosted this excellent workshop again. The cooperation with UMM goes back three years now, and this was the 11th UMM Workshop overall and the third held at Frankfurt School. This year's focus is very timely as various initiatives are simultaneously taking root and a consensus on the relevance of the issue is starting to emerge. Frankfurt School has recognized the special importance of value chains in agriculture and green microfinance. In different parts of the world, we support MFIs in designing innovative financial products and services tailored to rural populations that are vulnerable to the effects of climate change.

As emphasized at this year's UMM Workshop, there is tremendous need for more action, since poor people in developing countries are most exposed to climate change and environmental degradation. This is especially true for rural smallholder farmers that suffer from an increased variability in crop and animal productivity due to extreme weather events and thus face low and uncertain revenues. In this context, agricultural value chains can play a vital role in stabilizing and increasing smallholder farmer revenues. Unhealthy, unreliable and costly energy supply is another considerable source of risk for smallholder farmers. Green value chains can provide affordable and reliable energy supply and result in more sustainable environmentally-friendly practices.

However, MFIs are often reluctant to invest in green projects due to high initial capital investment or limited capacity and familiarity with renewable energy technologies. Furthermore, high operational costs and risks reduce incentives for financial institutions to serve the agricultural sector. In order to target these constraints, it is important to understand the roles and needs of the various actors in value chains. Only then can appropriate products be provided, risk managed and costs reduced in order to enable growth and reach clients in the remotest of rural areas. There is no "one" solution. Instead, the central challenge is to create an enabling environment that is embedded into a clear set of environmental and development strategies.

This year's UMM workshop has played a crucial role in this process, by contributing to an increased understanding and awareness of the gaps and needs in the field. Thanks to plenary discussions, student presentations and expert roundtables, participants were able to gain insight into the current debate on green and agricultural microfinance and exchange information about the newest findings of microfinance research. It has been a great opportunity to meet current and possible future cooperation partners and find out about the interests of students in this field. The UMM workshop has shown that through combined efforts, we will improve our market understanding and better reach our development goals.

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## Introduction - Article Summaries

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### *A key for smallholder inclusion in value chains*

**Michaël De Groot and August Sjauw-Koen-Fa**, describe the challenges of financial access in the agricultural sector at the bottom of the pyramid and introduce the value chain finance approach for smallholders defining the central role of active trade partners. Farmers' marketing organisations, knowing the willingness and ability of potential clients to honour contracts, can effectively intermediate between financial service providers and producers thus leading to "chain governance." The paper ultimately introduces four successful business models to ensure financial access in the framework of value chain development: "Build & Integrate," "Build & Partner," "Leverage & Network" and "Extend & Mobilize."

### *Agricultural finance for smallholder farmers: Rethinking traditional microfinance risk and cost management approaches*

In her contribution, **Daniela Röttger** takes a closer look at MFIs' efforts to alleviate the risks and costs of lending to smallholder farmers in Sub-Saharan Africa by using a combination of proven traditional microfinance mechanisms while adapting specific loan features and lending tools to the particularities of smallholder agriculture. Through her research, Daniela conducted interviews with eight MFIs in East and West Africa (Uganda, Kenya, Benin, and Cameroon). Her results demonstrate the challenges farmers face. She concludes that there is a lack of commitment to combining a well advised business strategy and market analysis, thereby improving the possibility for a successful agricultural microfinance business.

### *Agri-microfinance: Approaches and methodologies for achieving profitability with poverty impact for small-scale farmers*

**Ron Bevacqua** identifies the inherent production risks of smallholder farmers in developing countries as the main constraint to access financial services, which ultimately contributes to low farm productivity. The results obtained by 15 MFIs in the Philippines, Cambodia and Vietnam demonstrate that (i) product development based on the cash flow profiles of commodities combined with total household cash flow; (ii) policies and procedures based on thorough risk mapping; and (iii) anchoring of agri-microfinance on social performance management are three pillars of effective agri-microfinance technology to tackle the perceived high risk of lending for agricultural production. Ultimately, the author mentions (i) analysis of practical ways of managing risk; (ii) cost/benefit analysis of ICT use; (iii) overall impact of agri-lending vs. business/enterprise lending; (iv) analysis of upstream vs. downstream value chain financing as the hot topics in agri-lending.

### *Financing coffee growers from inside the value-chain: the role of producers' cooperatives in Colombia*

In their contribution, **Valentina Lozano & Solène Morvant-Roux** underline the fact that rural areas and smallholder farmers are still characterized by a high degree of financial exclusion. They identify the issues that coffee growers are facing to ensure their production and assess how farmers may have access to financial services or not. They illustrated their results with a case study conducted with Colombian smallholder coffee growers, implemented within an international value chain. Thus, they point out the main findings of their research from two sides: (i) the coffee growers' perspective and (ii) the financial services supplied by cooperatives and the challenges confronting them.

### *Microfinance, energy needs and the agricultural value chain*

In **Bernd Balkenhol's** contribution, value chain financing is mostly beneficial to farmers if the financial services are provided through an external agent (e.g. a MFI or a bank) outside the value chain. This arrangement is considered to minimize the risk of exploitation via interlinked contracts which might derive from possible monopolistic positions of certain value chain actors (e.g. input suppliers). In this framework, considering the positive relationship between agricultural productivity and energy use, MFIs could contribute to private and social benefit through financing renewable energy technologies in agricultural value chains. To foster renewable energy lending MFIs need to: (i) adapt maturity of loans; (ii) anticipate specific default issues (e.g. third party risk); (iii) examine cash flow; and (iv) collateralize energy loans. In conclusion, Balkenhol provides evidence from Bangladesh, Cambodia, Indonesia and the Philippines.

### *Myanmar: Value chains in agricultural microfinance*

**Jay P. Supetran** examines the impact of Agricultural Microfinance (AMF) on value chain financing in the rural context using results from his project aiming to develop cooperatives providing technical and financial assistance to agri-based and non-agricultural rural enterprises in Myanmar. Firstly, he presents traditional agricultural financing in Southeast Asia, by identifying the challenges smallholder farmers face in accessing formal financial institutions. Secondly, he enhances the relevant implementation of AMF as an alternative to provide the necessary financing and support to small landholders.

### ***Towards a holistic approach in agricultural finance: The role of value-chain finance in KfW's agricultural finance activities***

**Ron Weber** describes the present KfW Development Bank's approach to agricultural finance combines the new financial sector development paradigm focusing on building solid financial institutions and the need for supporting the supply side, i.e., financial institutions as opposed to the demand side, i.e., the farmer, as mainly done in the past. Consequently, the KfW's holistic agricultural finance approach consists of the following activities: (i) "Supporting the development of sustainable (M)FIs"; (ii) "Foundation of new investment vehicles"; (iii) "Capitalizing and supporting value chain finance providers"; and (iv) "Capitalizing and supporting insurance companies." Activity (iii) is exemplified through the description of the Fairtrade Access Fund which, with the support of KfW, provides technical assistance to Fairtrade certified agricultural producer and labour organizations, which ultimately ensure financial access to their members.

### ***Value chains in agriculture and green microfinance***

Through her article, **Flavia Villela** points out the linkages between value chain and green microfinance. On one hand she defines the concept of value chain for a better understanding of the role of microfinance in the whole value chain. On the other hand Flavia discusses the fact that green microfinance plays a significant role in value chain structure, not only through energy inclusion which creates huge opportunities for companies and local sectors to upgrade their value chains with clean energy system, but also by taking advantage of this market-driven approach which can be a key aspect for the creation of incentives and energy market access.

### ***ICT Application in the Development of the Shea Value Chain in Ghana. The case of StarShea Ltd***

The impact and importance of ICT (Information and Communication Technologies) is strengthened by **Susann Seifert and Heino Kantimm**, who use the case of the Shea Value Chain project in Ghana supporting by PlaNet Finance and SAP. In this way, they argue that the implementation of ICT within the AVC is an effective tool to (i) improve smallholders' production systems, (ii) facilitate access to market and related services, and (iii) support financial inclusion of smallholders. They, finally, conclude with the example of the StarShea Ltd. Social Business, in which the use of ICT played a huge role allowing to reduce the economic vulnerability of the women shea farmers in Ghana.

### ***Four questions for Alicia Rondón-Krummheuer***

**Alicia Rondón-Krummheuer**, interviewed by Davide Castellani, after having summarized the key messages expressed in the plenary session she moderated concerning the linkages between agricultural and green value chain (AVC & GVC) microfinance, mentions the use of green practices or technologies (e.g. agroforestry organic farming system or renewable sources of energies) as the way to integrate A&GVC microfinance. Rondon points at understanding the needs and peculiarities of potential clients through market researches as crucial to make A&GVC microfinance a tool for financial inclusion. She concludes indicating the issues that research in A&GCV microfinance should tackle.

### ***Five questions with Laura Viganò***

Through her interview, **Laura Viganò** answered five questions by Davide Castellani on the role of microfinance in the agricultural value chain (AVC). She explains that we can find several financial products to improve and support the development of the agricultural value chain, not only through MFIs but also you via any banks. Moreover, she presents the importance of AVC to contribute to financial inclusion and she also moderates the risk affecting agricultural production as well as finance. Finally she raises issues and challenges on which academic research should work to still improve AVG in microfinance.

### ***What are green value chains? And what is the relationship to microfinance?***

**Davide Forcella** introduces Green Microfinance with reference to the e-MFP Green Index subgroup's classification of green microfinance practices according to three main dimensions: (i) formalized environmental strategy; (ii) environmental risk management; and (iii) fostering of green opportunities. Green Microfinance is considered most relevant in the agriculture and energy value chains; and only if introduced in a systemic way in these two value chains, Green Microfinance can foster environmentally friendly and fair socio-economic development while programmes based on the rationality of single economic actors are usually not effective. Examples of this new approach to value chain are drawn from Central America, Cambodia, Brazil and Bosnia-Herzegovina.

### **Green Microfinance – Lessons from Proyecto CAMBio in Nicaragua**

**Frederic Huybrechs** presents the relationship between microfinance and sustainable development and environmental protection. He uses the results of a study of a green microfinance project in Nicaragua, Proyecto Cambio. The project aims to ensure Central American MSMEs progressively contribute to sustainable development by adopting biodiversity friendly practices in their activities and business. Thus, Frederic underlines the importance of “sustainability” in the field of microfinance and financial inclusion, as testified by the triple bottom line including social, environmental and economic pillars.

### **Why do MFIs get involved in greening their portfolio?**

**Marion Allet**, referring to a quantitative survey of 160 MFIs and qualitative semi-structured interviews of 23 MFI managers, identifies (i) social responsibility, (ii) competitiveness, and (iii) stakeholders' pressure as the main drivers for MFIs to improve their green performances. If stakeholders' pressure results in a MFIs' defensive approach towards environmental management, social responsibility fosters proactive and innovative MFIs' behavior promoting financial and non-financial environmentally-friendly services and practices. Analyzing the case of 6 MFIs implementing a programme that facilitates access to solar solutions in rural Sub-Saharan Africa, the author points at (i) responding to clients' needs; (ii) fulfilling the social mission (specifically, reducing clients' energy expenditures, exposure to health risks, improve their living conditions and develop their businesses); and (iii) realizing how embedded environmental issues are in the daily lives of their clients as the main motivations for engaging in green microfinance.

# A key for smallholder inclusion in value chains

Michaël De Groot & August R. Sjauw-Koen-Fa

## About the authors

**Michaël De Groot** joined Rabobank Foundation in December 1994 after his return from Sudan where he had been doing volunteer work in community exchange projects and an informal microfinance scheme. Before going to Africa he had spent three years with NMB Bank (now ING) where he was engaged in loan risk management of international loans. For the last several years he has been working as a senior project manager with Rabobank Foundation concentrating mainly on Asia and Eastern and Central Europe. Beside these activities for Rabobank Foundation he is a core member of teams engaged in the development of social ethical investment funds, sustainable green fund, and micro-finance loans in LDCs. Michaël holds a Master degree in economics from the Free University of Amsterdam.

**August R. Sjauw-Koen-Fa** has worked for Rabobank Nederland since 1981. During his time at Rabobank, he has held various roles and positions at the Economic Research Department: researcher, agricultural policy strategist, project manager for participating interests, strategic policy adviser and research team leader. He has accumulated specific areas of expertise and experience in the wide field of food and agriculture, the banking sector, sustainable energy and environment and CSR. He was appointed an Executive Vice President of Rabobank Nederland in 2002 by the Executive Board at the time in recognition of his services to Rabobank. August Raimy Sjauw-Koen-Fa graduated as an agricultural economist at Wageningen University in 1976.

*Excerpt from Chapter 5 of "Framework for an Inclusive Food Strategy," Rabobank Group (2012)*

## Financing at the bottom of the food production pyramid

The large majority of the population in rural areas in low and middle income countries, approximately two billion people, consists of smallholders and their families. In Sub-Saharan Africa and Asia, more than 90 percent of the agricultural holdings are smallholders, while approximately 80 percent of the farmland is cultivated by smallholders. Producing up to 80 percent of the food that is consumed locally, they are the backbone of the rural economy. Access to affordable financial services is essential in order for smallholders to meet investment and working capital requirements to unlock their potential. Without investments in new farm assets, technology and equipment, these smallholders are not in a position to compete, meet formal sector requirements, diversify or increase their share in the final value of their products. In many developing regions, financial market imperfections, such as high transaction costs and information asymmetries, are likely to be especially binding on smallholders that lack collaterals, credit history and connections. The absence of affordable financial services in rural areas does not only affect smallholders, but also related chain partners such as processors and traders.

The new vision on agriculture exemplifies the growing awareness in the agribusiness world that the private sector needs to play a leading role in unlocking the potential for agriculture at the lower end of the pyramid. It will require a substantial investment, an estimated EUR 83 billion (FAO) and EUR 90 billion (GHI) annually for rural energy, irrigation, post-harvest handling and storage, processing and transportation. In this view, the public investment expenditure in agriculture has to be a partnership effort involving private stakeholders if the common goal of a food secure world is to be achieved.

**Lack of outreach of financial markets:** It is estimated that just over half of the world's adult population of 4.7 billion do not use formal financial services for saving or borrowing (Financial Access Initiative and McKinsey & Company, 2009). The large majority of these unbanked people (2.2 billion) live in Asia, Africa, Latin America and the Middle East. Approximately two-thirds of the 1.2 billion people who do use financial services in these regions live on less than USD 5 a day.

**Credit gap:** Total unmet need for credit by all formal and informal micro, small and medium enterprises (MSMEs) in emerging markets today is estimated in the range of USD 2.1 to USD 2.5 trillion (IFC and McKinsey & Company, 2010). In conclusion, approximately 70 percent of all MSMEs (365 million to 445 million) in the developing world does not use any form of external financing from financial institutions and that another 15 percent is underfinanced. This gap is equivalent to approximately 14 percent of the total of developing countries' GDP and about one-third of the current total credit outstanding to MSMEs in emerging markets globally.

**Key characteristics of agriculture in developing countries:** Table 1 shows the main characteristics in terms of farm practice and technology, production capacity and the traditional position in the value chain for five categories of farms. The middle segment in this table has been subject to extensive policy debate on agricultural finance with recommendations for regulation, supervision and infrastructure. A recent study (IFC and GPF, 2011) aims to complement this important process of revitalising agricultural finance, with an emphasis on what the private sector can contribute to the mobilisation of smallholders at the bottom of the food chain.

**Table 1:** Key characteristics by farm size

	Large farmers	Medium-sized	Commercial smallholder	Semi-commercial smallholder
<b>Land</b>	>500 ha	20-500 ha	2 - 20 ha	<2ha
<b>Labour</b>	Skilled labour	Combination of family members and external labour	Primarily family labour	Family labour
<b>Technology</b>	Fully mechanised	Partly mechanised	Minimal mechanisation	Low technology. Limited access to know-how
<b>Resources</b>	Formal bank loans and/or external capital. Skilled (risk) and management	Limited access to formal bank loans	Mainly informal finance	Limited resources (capital, skills, labour, risk, management)
<b>Production</b>	Fully commercial	Largely commercial	Partly commercial	May produce subsistence or commercial commodities, with on-farm and off-farm sources income
<b>Capacity</b>	Good market access, own storage/logistics and access to market information	Reasonable market access but limited access to market information	Marketing through group structures	Limited capacity of marketing, storage and processing
<b>Value chain</b>	Well-positioned within the value chain	Weak position. Stronger in cash crops	Position depending on group strength	Often vulnerable in supply chains

Source: adapted from IFC and GPF (2011)

### Financial services at the bottom of the pyramid

**Financial co-operatives:** Mutual systems of savings and credit are the most common response of rural communities to unexpected or irregular expenses, whether related to farming, festivities, sickness or burials. During the colonial and post-colonial period, these systems were replaced or supplemented with European, American and Canadian models. These types of 'self-help' financial institutions nowadays exist in many forms, ranging from informal rotating savings and credit groups (ROSCAs), organised savings and credit co-operatives (SACCOs), credit unions and co-operative banks. The strength of these financial initiatives and institutions lies in the fact that they are savings-led, which means that their prime objective is savings mobilisation and protection. A World Bank study (2007) concludes that, "Financial co-operatives are significant providers of financial services in rural areas in both developed and developing countries. In successful cases, this success is based on a tried and tested institutional and business model: democratic, bottom-up, autonomous, self-financing and savings-based."

**The microfinance wave:** What is now referred to as micro-enterprises, i.e. small shopkeepers, small farmers, marketers, craftsmen, rickshaw drivers, etc. traditionally operated mostly behind the veil of the informal sector. Access to finance, if at all, was restricted to family members, informal lenders and 'loan sharks'. During the 1960s and 1970s, a great variety of initiatives in support of this sector emerged, often as part of public sector development programmes, or instigated by donors, NGOs and religious organisations. However,

it took until the mid-1970s for the term microfinance to be coined and for micro-entrepreneurs to be recognised as a legitimate target group for organised financial services. In the thirty years that followed, a wave of microfinance initiatives spread across the globe. By replacing the concept of collateral with group formation and mutual guarantees, credit came within reach of people without property. And by bringing these services to the poor man's quarters, the threshold was sufficiently lowered to draw millions of impoverished people into the realm of financial services.

**Farming – still a frontier area for (micro)finance:** The financing of the agricultural sector has proven to be a great challenge, not only for banks but also for microfinance institutions operating in rural areas. The success stories of agricultural microfinance in countries like Bangladesh (Grameen Bank) and India, have been facilitated by the fact that in densely populated regions, it is possible for credit officers to reach clients on foot or by bicycle. However, in many other countries, especially the more sparsely populated areas of Africa and Latin America, the outreach of MFIs to remote rural areas is still a challenge. Small farmers face additional uncertainties related to crop yield and crop prices. Lack of storage facilities force farmers to sell on spot markets (local traders, village markets) at low prices during harvest time. The gross margins for farmers on staple crops sold on local markets are often very small, hardly allowing additional expenses for interest on loans. Hence small farmers may be reluctant to borrow, unless the investment financed improves their gross margin significantly. Relatively larger amounts

required for farm modernisation (tools, equipment, storage, irrigation) may be well beyond the normal ceilings for microcredit.

**Gross margin and interest:** Another much debated issue in this context is the cost of microcredit. While an interest of 2 percent per month may be quite acceptable for a woman selling tomatoes on a daily basis, it could pose a problem for farmers who have to wait six months for the harvest and for payment of their crop. For this reason it is not uncommon for MFIs to lower their interest rates for agricultural credit, often requiring a degree of cross subsidisation by their non-farm portfolios.

**Implications for MFIs:** Finally, in the absence of specific agricultural finance approaches, the portfolio at risk for agricultural lending may also work out to be higher than for trade and commerce. Thus MFIs typically face lower yields combined with higher risks, making agricultural finance a more challenging proposition for finance providers.

**Emerging features of agricultural microfinance:** Despite the above-mentioned obstacles, many microfinance institutions have proven that financing farm activities can be viable. A CGAP study (2005) identifies ten common characteristics of successful agricultural microfinance (see box 1). A recent UNDP study explores the features of the next phase of microfinance (Mendoza, 2008). Issues addressed involve improved product design, mitigating the cost of capital and distribution and marketing costs. Examples of the latter, leveraging ICT networks, include recent innovations on mobile banking, for example in Kenya and the Philippines.

**Mobile farm finance:** These services open up possibilities for tailored credit and procurement products for farmers, such as the DrumNet facility in Kenya (part of Pride Africa MFI), a technology that helps farmers to acquire the inputs needed, simplify credit delivery, and reduce transaction costs and risks.

**Value chain finance approaches:** Value chain finance refers to financial products and services that flow to or through any point in a value chain in order to increase the returns on investment, growth and competitiveness of that value chain. The successful application of a more holistic financial approach towards the various partners in a value chain, first adopted by large banks in national and international supply chains, has created awareness for the potential of this approach towards financing the agricultural sector at the bottom of the pyramid.

#### **Design of a value chain finance approach for smallholders**

**How to turn a supply chain into a value chain? :** Financial services providers, whether they are MFIs, financial co-operatives or banks, rarely conduct value chain finance on their own. At the bottom of the pyramid, value chain development (VCD) interventions are often required to link primary producers (farmers) to value adding markets. Invariably it involves the transformation of a local supply chain into a value chain that meets the requirements of these new markets. As long as a producers' organisation maintains a supply-driven approach, a value chain strategy may be difficult to pursue as this calls for adjustment of production to the requirements of new markets. It requires entrepreneurial spirit to venture into new products or crops for local, regional or international markets. Therefore, the success of a VCD strategy crucially depends upon the selection of the right partners.

**Chain governance:** An active trading partner in the chain, such as a farmers' marketing organisation or a processing company, can take the lead in streamlining the value chain, thus providing a degree of chain governance. Such a partner could also play a role by providing embedded finance to suppliers, or to establish a working relationship with a financial services provider for the financing of producers and input suppliers. Compared with financial institutions, value chain operators possess easier access to information

#### **Box 1: Emerging Features of Agricultural Microfinance**

1. Repayments are not linked to loan use.
2. Character-based lending techniques are combined with technical criteria in selecting borrowers, setting loan terms, and enforcing repayment.
3. Savings mechanisms are provided.
4. Portfolio risk is highly diversified.
5. Loan terms and conditions are adjusted to accommodate cyclical cash flows and bulky investments.
6. Contractual arrangements reduce price risk, enhance production quality, and help guarantee repayment.
7. Financial service delivery piggybacks on existing institutional infrastructure or is extended using technology.
8. Membership-based organisations can facilitate rural access to financial services and be viable in remote areas.
9. Area-based index insurance can protect against the risks of agricultural lending.
10. To succeed, agricultural microfinance must be insulated from political interference.

Source: CGAP – Occasional Paper 11 - 2005

about other value chain partners, particularly with regards to the willingness and ability of potential clients to honour contracts. The creation of a successful value chain is an act of entrepreneurship. While a facilitator (specialised VCD agency) can play a useful role, the detailed design of the value chain strategy must come from a leading chain partner. In a producer-driven initiative, the major challenge is to turn a supply chain into a value chain (i.e. to adjust supply to demand in a new market). In a buyer-driven model the challenge is to identify competitive production areas and to make products conform to market requirements. Sometimes a professional facilitator is used to link producers and buyers/consumers in a chain. Whatever the entrée point, a vital characteristic of a promising VCF approach is that a leading chain partner is prepared to invest time and resources in the relations with suppliers (primary producers) and off-takers higher up in the chain. Sharing of information and building up trust is both a precondition and a good test (indicator) for a genuine VCF approach (European MFP, 2011).

**Trade finance instruments:** The practice of trade credit by commercial trade partners has always existed as a form of finance alongside formal financial services by banks. In food chain, which are handicapped by constraints on agricultural credit and rural finance, it is often the only finance instrument available. Financial institutions are traditionally hesitant to lend to farmers or farmer-based organisations due to their lack of credit

history, high perceived risks and high transaction and monitoring costs. On top of that, there may be doubts concerning profitability, cash flow and production risks. For partners in the food chain, it is much easier to overcome these obstacles as they know their trade partners and the trade itself. Based on empirical evidence, research emphasizes the constructive role that foreign direct investment can have in this respect (Vorley and Fox, (2004).

### **Risk mitigation through value chain finance approaches**

A value chain finance approach offers a set of mutually supporting measures that, combined, are able to substantially mitigate finance risks, especially when a solid producers' organisation (co-operative) collaborates with a leading chain partner (Calvin Miller, 2011). The chain partner is in a good position to provide guidance to farmers through its PO and facilitate better gross margins through improved quality and direct access to new markets. The case of CEPIBO (see case study below) in Peru illustrates how risks can be mitigated through the organisation of producers and linking of finance and marketing functions. While agricultural finance in general is often considered high risk and therefore non-accessible, a consistent value chain approach manages to mitigate risks to a level that makes the chain credit worthy, even when individual partners (small farmers) are not.

#### **Case study: CEPIBO - Banana farmers in Northern Peru**

**CEPIBO - Banana farmers in Northern Peru organised in a co-operative take up pre-export processing and fair trade certification. Whereas historically they supplied exporters without processing, they now do the quality control, washing, packaging and exports themselves, thus almost doubling farm incomes.**

**Reducing risks in the chain.** Value chain finance is deemed effective and sustainable when it goes hand in hand with measures to reduce risks in the chain. The case of CEPIBO offers a good illustration on how this is achieved:

- **Production risks:** The combination of capacity building for the producers through CEPIBO is crucial to ensure year round supply in adequate quantities.
- **Finance risk:** By acting as a financial services provider and trading partner of the farmers, the risk of non-availability of finance is reduced and the risk of non-performing loans is minimised. In case of crop failure, the loans by CEPIBO to farmers can be extended for one year, with CEPIBO meeting its debt obligations from its internally generated equity capital.
- **Marketing risk:** The promotion of bananas, in fairs and business tours helped the growth of demand for CEPIBO products, resulting in a rapid growth of sales. Fixed contracts were established with fair trade importers in Europe. In the local market they have almost limitless sales opportunities, at lower prices. Thus, an unexpected drop in demand from importing partners can be absorbed without threatening the sustainability of CEPIBO.
- **Price risk:** Through direct contacts with importers abroad, CEPIBO has reduced the risk of price fluctuation due to influences at intermediary stages. Despite the inevitable volatility of world-market prices, the 'Fair Trade' label helps to secure fair and relatively stable prices for its members.
- **Quality risks:** Improved quality control allows for product segmentation (top quality at higher prices for export, lower quality at lower prices for local markets), thus reducing the risk of bulk rejection of export assignments.
- **Health risks for farmers:** The move to organic farming has been strongly motivated by health concerns. Part of the mission of CEPIBO is to reduce the risk of diseases observed in farmers and farm workers related to the extensive use of pesticides. These working conditions have been linked to frequently observed diseases such as infertility, lung cancer, skin cancer and birth defects.

**Risk of side selling:** The most frequently observed obstacle in these models of embedded finance in a value chain is the risk of farmers acting in breach of contracts by selling their produce to other traders, thus escaping the credit repayment mechanism. This risk is particularly high when downstream partners deal with individual farmers. In well-organised producers' organisations or farmer co-operatives, the risk is greatly reduced if not eliminated altogether. For this reason companies prefer to deal with strong producers' organisations, especially when they operate as a legal entity, such as a registered co-operative.

#### **The role of value chain partners in access to financial services for smallholders**

**Facilitate value chain development (VCD):** Companies with firm roots in consumer markets, whether by brand recognition or status as trusted supplier, considering sourcing from smallholders, almost by definition are involved in the development of a (local) value chain. In their perspective, the problem is not how to market a certain product, but rather how to ensure constant and reliable supply of agricultural supplies that meet their food quality and safety standards. A characteristic of traditional agricultural production by small farmers is the relatively low productivity per hectare. This can differ a lot in comparison to commercialised operations applying Good Agricultural Practices (GAP). If global food security is to be realised with gradually reducing resources, it is vital that productivity is increased with the smallholders the way it is with larger commercial farms. A second issue to be addressed may be the weakness of the producers' organisation(s) involved. A leading chain partner can help the producers make big steps forward, through relatively cost-effective means. This may involve simple interventions such as product-specific technical advice, chain governance, guidance on production standards and strengthening of the producers' organisation or co-operative.

In view of the importance of these types of investments, the leading chain partner will in many cases access specialised support services from the public sector, civil society or private sector specialists. Value chain development is an area par excellence for public private partnership.

**Facilitating external finance for farmers (VCF):** In terms of activities in the field of chain development, lead partners can play a vital role in facilitating farm financing. While initially, chain partners often play a financial role by providing trade credit, it will eventually become necessary to involve external financiers. As lead partners in the chain have already built up a relationship of creditworthiness with one or more banks, they are well placed to facilitate the transition towards direct finance facilities for farmers involved in the chain. Most important in this process are the unique opportunities that a value chain finance approach offers in terms of risk mitigation. Timely delivery of inputs and basic extension services reduce production risks. A strong producers' organisation reduces supply

risks. Well-established marketing links reduce price and marketing risks. The combination of these factors makes it possible for chain partners, or banks, or a combination of the two to provide financial services. A tripartite agreement between the parties involved has proven to be a suitable arrangement to secure the commitment of all stakeholders in the process.

#### **Successful business models for serving the hardest-to-reach smallholders:**

- 1. Build & Integrate:** These financial providers aim to fill a market gap by serving primarily non-commercial smallholders with little to no access to finance and farming-related services. Field-based staff deliver financial products, typically developed specifically to support smallholders' agricultural needs, as well as agronomic training and other support services. The hands-on and field-based nature of Build & Integrate providers' approach helps them build strong relationships with smallholders and a deep understanding of their financial and non-financial needs. However, this approach also translates to a low farmer-to-field officer ratio of approximately 100-200 farmers per field officer, the lowest observed across archetypes. One example of a Build & Integrate financial provider is One Acre Fund, which is serving more than 180,000 farmers across Kenya, Tanzania, Burundi and Rwanda.
- 2. Build & Partner:** These financial providers also aim to fill a market gap by serving rural populations, including both non-commercial smallholders and commercial smallholders in loose value chains. Similar to the Build & Integrate model, these providers operate in close proximity to clients, delivering financial products through field-based staff. However, Build & Partner providers typically outsource the development and delivery of agronomic training and other support services through formal partnerships. As providers' staff operate in the field but are primarily responsible for financial activities only, Build & Partner providers typically have farmer-to-field officer ratios of approximately 300-500 farmers per field officer – higher than those of Build & Integrate providers. Juhudi Kilimo, a non-bank financial institution offering asset financing to Kenyan smallholders, is an example of a Build & Partner financial provider.
- 3. Leverage & Network:** These financial providers use existing infrastructure to broaden their client base by serving commercial smallholders, including some in loose value chains. To do so, providers typically deploy existing capital sources (including revenue, client savings and investment capital) and staff to deliver a full set of financial products to smallholders. Most Leverage & Network providers serve smallholders from branches and seek out informal partnerships with other organizations that can provide training and other agronomic support to their clients. Given these factors, Leverage & Network providers typically have the highest farmer-to-field officer ratios: more than 1,000

farmers per field officer. Opportunity International and its network of financial institutions offering smallholder finance across seven African countries are examples of Leverage & Network providers.

4. **Extend & Mobilize:** These financial providers are typically member-run organizations set up to meet the needs of the rural communities in which they operate. Thousands of these providers exist – including Village Savings and Loans Associations

(VSLAs) and Savings and Credit Cooperatives (SACCOs) – and some have extended their financial product offerings to include agricultural-focused products for non-commercial smallholders. Most Extend & Mobilize providers depend on their existing staff and capital base (typically member savings) to support their agricultural finance activities. Agronomic supporting services are typically member driven and provided on a volunteer basis.

*Source: The Initiative for Small Holder Finance, 2014, "Lending a Hand: How Direct-to-Farmer Finance Providers Reach Smallholders," Briefing N. 6.*

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# Agricultural finance for smallholder farmers: Rethinking traditional microfinance risk and cost management approaches

Daniela Röttger

## About the author

**Daniela Röttger** won the 2013 University Meets Microfinance (UMM) award for an outstanding master thesis on agricultural microfinance for smallholder farmers in Sub-Saharan Africa. She holds a master degree in international relations and development policy from the University of Duisburg-Essen and currently works as an independent consultant for microfinance and monitoring & evaluation, amongst others for the Competitive African Cotton Initiative (COMPACI).

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## Abstract

*Smallholder farmers in Sub-Sahara Africa are still highly underserved by the microfinance industry. This research endeavors to demonstrate how MFIs can mitigate risks and costs of lending to smallholder farmers by using a combination of proven traditional microfinance mechanisms while adapting specific loan features and lending mechanism to the particularities of smallholder agriculture. Eight MFIs providing agricultural finance to smallholder farmers in four countries in East and West Africa (Uganda, Kenya, Benin, Cameroon) were interviewed in 2011 for this purpose and their loan features and lending mechanism specific to agricultural lending were identified.*

## Introduction

Even though traditional microfinance has successfully paved the way for offering financial services to low-income populations without traditional collateral, many microfinance institutions (MFIs) are still reluctant to move into rural areas and agricultural finance, due to the perceived high risks and costs. Additionally, lending to smallholder farmers requires MFIs to move away from or adapt the very criteria that have proven successful in mitigating credit risk, as some of the successful microfinance lending techniques are not suited for agricultural investments (e.g., quick and frequent repayments or staggered loan disbursements within joint liability groups).

The research analyzes how MFIs in Sub-Sahara Africa, who offer financial services to smallholder farmers, have managed these challenges by using a combination of proven traditional microfinance mechanisms while adapting specific loan features and lending mechanisms to the particularities of smallholder agriculture. Several qualitative expert interviews as well as interviews with eight MFIs in four Eastern and Western African countries (Uganda, Kenya, Benin, Cameroon) were conducted in 2011 for this purpose.

## Adaptation of loan features to agriculture

The findings show that most MFIs in the study increased their loan terms to cover one agricultural crop cycle and introduced flexible repayment schedules, allowing for grace periods and lump sum repayments. MFIs mitigated associated risks by analyzing overall household income and using farmers' non-harvest related income streams for monthly interest payments or regular, small principal repayments. Most MFIs introduced partial loan disbursements according to the agricultural investment schedule (e.g. sowing, fertilizer application, harvesting) to circumvent loan diversion and to reduce the risk of a total loan default. A thorough knowledge of the financed crop was important to develop adequate loan products and to assess the adequacy of farmers' loan demand during loan assessment. Some MFIs developed detailed commodity profiles for all agricultural products for which they offered loans. Many MFIs also attached an insurance product to their agricultural loans and/ or cooperated with other value chain actors to reduce the risks and costs of lending.

No clear picture was found among interviewed MFIs regarding appropriate interest rate levels. Quoted interest rates spanned a wide range from 10% to 46% p.a. As the level of interest rates for smallholder farmers is often a topic of emotional debate among development practitioners, the study examines the effect of different interest rate levels on a "typical" smallholder cotton farmer's income. The analysis indicates that a change in farm-gate prices can have a substantially higher impact on farmers' income than a corresponding change in interest rates. Careful analysis regarding the respective value chain and crop in question is therefore suggested to assess whether in fact it is high interest rates or rather other factors that are the main challenge for farmers' profitability.

### **Sound agricultural knowledge of MFI staff**

Employing qualified staff with an agricultural economics background was crucial for all surveyed MFIs both with respect to loan officers as well as staff at headquarters responsible for loan development. Lending to smallholder farmers requires a thorough loan assessment via physical visits to the farmers' fields to collect information on farmers' agricultural performance. Having the right attitude as well as sound agricultural knowledge was of highest importance for successfully choosing the "right" farmer group, effective monitoring of his/her performance and hence achieving solid repayment rates.

### **Value chains for risk and cost mitigation**

MFIs stated that agricultural microfinance has a distinct advantage vis-à-vis traditional microfinance: Farmers' integration in value chains can be used to significantly reduce lending risks and costs. Viewing and analyzing the farmer as a part of an agricultural value chain helps MFIs to better understand the risks of the particular agricultural product and thus the farmer. Collaboration of MFIs with other value chain actors offers opportunities to significantly reduce risks and costs. Examples included the collaboration of MFIs with agricultural extension staff to reduce monitoring costs; an input voucher system to reduce loan diversion or the cooperation of a buyer who pays the farmers' revenues directly into the MFI's account thereby covering farmers' loan repayments directly.

### **Profitability of agricultural lending**

The initial establishment of such value chain collaborations as well as the intensive assessment and monitoring procedures described above imply high additional costs. These costs could be partly offset by meeting with smallholders in groups and retaining successful farmers as clients. Technical innovations such as mobile phone banking, agency banking or mobile bank branches also reduced costs for MFIs and for smallholders, where available. Whether or not agricultural lending to smallholder farmers can be profitable enough to be sustainable, i.e. attract private non-donor capital as in the case of traditional microfinance, was outside the scope of the research. Of the MFIs interviewed for the thesis, some have reported being profitable with their agricultural lending activities; others have reported difficulties and still others have expressed hope of reaching profitability within their agricultural lending unit soon.

### **Conclusion**

The research demonstrates that smallholder farmers in rural areas can be successfully served by MFIs that adapt their loan features and lending techniques. The extent of adaptations is reason enough not to commit to such an endeavor lightly. A strong commitment combined with a well thought out business strategy and market analysis is needed to develop and sustain a successful agricultural microfinance business.

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# Agri-microfinance: Approaches and methodologies for achieving profitability with poverty impact for small-scale farmers

Ron Bevacqua

## About the author

**Ron Bevacqua** joined PlaNet Finance in 2005, at which time he established PlaNet Finance Japan. He has since established PlaNet Finance's offices in the Philippines, Cambodia, Vietnam and Myanmar.

Under his leadership, PlaNet Finance's work in Southeast Asia has focused on rural and especially agricultural finance. To date, PlaNet Finance's technical assistance has supported 15 MFIs in the region to lend 7 million € to 16,000 small-scale farmers. PlaNet Finance's work in Southeast Asia also strongly emphasizes client protection and social performance.

Previously, Ron spent 10 years in Tokyo as a chief economist for Merrill Lynch and Commerz Securities. Since 2004 he has written on East Asian economic matters as a contributing editor to the Economist Intelligence Unit, a division of the Economist newspaper of London.

Ron holds an M.A. in East Asian Affairs from the University of California and an M.A. in international political economy from the University of Virginia.

## Abstract

*Smallholder farmers represent perhaps the greatest underserved market for financial service providers targeting low-income households. This market segment is underserved because of the perceived high risk of lending for agricultural production. Experience in Southeast Asia, however, demonstrates that these risks can be managed through a combination of commodity cash flow profiles, a comprehensive risk management framework that is embedded in product features, policies and procedures, and by combining financial services with financial education. Successfully implemented, agri-microfinance can enable financial institutions to break out of saturated urban markets to tap an enormous underserved market segment which enables them to achieve both financial and social results.*

## The unmet demand for agri-microfinance

Of the seven billion people alive today, 5.7 billion live in low- to middle-income countries. A majority of the people in these countries live in rural areas, and 80% of those rural households are primarily engaged in agriculture. The vast majority of these households work small pieces of land, owning or tilling two hectares or less. All told, more than a third of the global population—as many as 2.5 billion people—are members of small-scale farm households in developing countries. Nearly 7 out of 8 of them are located in Asia. After China and India, the countries with the largest small-scale farming populations are the three largest Southeast Asian nations: Indonesia, the Philippines, and Vietnam (Hazell, Peter, 2011; Nagayets, Oksana, 2005).

In many developing countries, especially the poorest, agriculture remains a mainstay of the economy (IFAD 2011). Yet despite the importance of agriculture to both GDP and employment, farm productivity remains very low. The root causes of low agricultural productivity, and through it much of rural poverty, are manifold, and

there is no silver bullet that can completely address the poverty of small-scale farmers. Access to credit can help by enabling farmers to invest more in production and can free them from their dependency on input sellers or traders who use their market power to absorb a large portion of farmers' added value. However, this is only the case if farmers have access to inputs such as high quality seeds and fertilizers, improved farming techniques, and markets where they can sell their goods (IFAD 2011, World Bank 2012, FAO 2002).

Although greater access to credit can contribute to improved outcomes among the rural poor by fostering greater financial independence, financial services targeting small-scale farmers remain the least developed area of the financial inclusion movement. Traditionally, MFI products and delivery methods were designed to finance non-farm livelihood activities. To be sure, many clients did use these loans to finance farm production. However, due to the mismatch between the features of the products (size, tenor, repayment schedule, etc.) these types of loans fail to free farmers from their dependence on expensive informal sources of credit and, worse, leads to high levels of default.

Awareness of the need for dedicated products for small-scale farmers has been increasing. In January 2013, the Consultative Group to Assist the Poor (CGAP) listed the development of effective financial services for smallholder farmers as one of its top 10 priorities for the coming five years (CGAP 2013a).

This awareness has dovetailed with the need among many MFIs to seek new markets as competition—and credit pollution—has increased in urban areas. MFI leaders know there is a large untapped market for their services among small-scale farmers. Yet they remain concerned about the perceived risk. What they need is a technology that reduces the risk of lending for farm production.

### **The three pillars of effective financing of farm production**

Since 2010, 15 MFIs in the Philippines, Cambodia and Vietnam have developed and pilot tested agri-microfinance products designed to finance farm production. To date, more than 15,000 small-scale farmers have been financed, total credit provided is nearly \$10 million, and portfolio performance has been at least as good as the MFIs' enterprise loans.

Their agri-microfinance technology rests on three pillars:

- Product feature development based on the cash flow profiles of commodities being grown combined with total household cash flow
- Policies and procedures based on thorough risk mapping
- Anchoring of agri-microfinance on social performance management

The agri-microfinance product segments the market based on the agricultural commodity being produced rather than the characteristics of the borrower's household. The main household characteristic used for segmentation is the size of land owned or farmed, but this is only to ensure a strong poverty focus; targeting clients with five or less hectares planted is immaterial to assessing the creditworthiness of the farmer.

Basing the loan assessment on the commodity being grown separates the financing needs of the farm from the broader financing needs of the entire household. Specifically, it focuses the loan on agri-production only; financing needs for anything that is not production-related, like purchases of tools and equipment, processing, transportation and marketing are outside the scope of the agri-microfinance loan (these financing needs are to be met with an enterprise loan). This makes the loan assessment process as well as loan use monitoring easier for the credit officer, thereby streamlining loan administration.

Segmentation based on the agricultural commodity being produced has another important consequence: it reduces risk by limiting lending to only those commodities that can be grown profitably. For each of those commercially viable commodities, a "commodity profile" is created through information gathered during the market study. The profile maps the cash flow throughout that commodity's production cycle, which is then used to design the main loan features (size, tenor, repayment schedule) to match the needs of the farmer-client. Although the financing need is calculated based on the commodity being grown, total household cash flow is considered in determining the repayment schedule.

However, even accurate commodity and cash flow profiling can lead to poor outcomes if the policies and procedures for loan administration are not adequately developed. Policies and procedures for effective loan administration should be based on a mapping of the risks inherent in the product and its delivery. This is the second pillar of the agri-microfinance

methodology. For example, if climate change makes an area increasingly vulnerable to natural disasters, or if a commodity is vulnerable to changes in rainfall, the lender has the option of transferring the risk (with insurance, if available) or avoiding it (by looking for other areas or other commodities to finance).

Even a well-designed product and policy manual may not, however, be sufficient to lead to a substantial increase in financing of small-scale farmers. The third pillar of the agri-microfinance methodology, social performance management (SPM), is often crucial for the success of its agri-microfinance products. The third pillar links outreach to farmers back to the MFI's underlying mission and vision. It helps the MFI's staff, from the board to the credit officers, understand why small-scale farmers are a target market for the institution from a purely social point of view.

One specific example of this is the integration of the client protection principles into the MFI's policies and procedures. Some of these principles, such as appropriate product design and avoiding over-indebtedness through thorough loan assessment, are embedded in the first two pillars (product design and risk-based policies and procedures). Another way to help clients avoid over-indebtedness is to provide financial education, and the MFIs have integrated financial literacy lessons into the delivery of the agri-microfinance loans.

### **Conclusion**

MFIs who have pilot tested agri-microfinance loan products are often surprised with the result: it is exceptionally profitable. The reason is that the loan sizes are often larger—sometimes double or more of the size of the MFI's enterprise loans. Farm production is, after all, very costly. Larger loan sizes allow the MFI to reduce the case load of its agri-microfinance credit officers, which enables them to spend more time on client assessment, monitoring and financial literacy education. The result is higher profitability per credit officer with better administration of the loan that manages risk and reduces non-performance—while at the same time contributing to social impact and the fulfillment of the MFI's mission.

### **Hot topics:**

- Research and analysis into developing practical ways of managing risk in agri-lending and value chain finance, focusing on effective systems, policies and procedures for loan administration.
- A thorough analysis to help financial institutions understand the comparative costs and benefits of investing in technology vs. investing in their own people. Information technology can be a useful tool in overall risk management, but these days one gets the impression that IT can substitute for the effective client identification, assessment and monitoring by trained bank staff. This hasn't been definitively proven. An analysis of the costs of that investment vs. its effectiveness needs to be done.

- Research into the overall impact of agri-lending vs. business/enterprise lending on lender financial performance. Not enough information exists to help lenders understand if it actually makes business sense to go into agri-finance or value chain finance. Agri-loans can be larger than enterprise loans, but there (may be) more risk, they require more monitoring, and portfolio turnover is slower. What is the net profit of agri or value-chain lending vs. regular business lending?
- When it comes to financing agri-value chains, there are a number of entry points: input suppliers, primary commodity producers, downstream processors, transporters, marketers etc. Almost always, it seems that value chain finance focuses on producers of primary commodities but there has not been a thorough analysis of whether such a supply-driven approach can indeed stimulate the value chain, or whether it makes more sense to finance downstream actors to stimulate demand. Perhaps there is no one-size fits all approach (every value chain is different) but decision-tree analyses would illuminate the most effective way to use finance to stimulate a value chain.

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# Financing coffee growers from inside the value-chain: The role of producers' cooperatives in Colombia

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**Solène Morvant-Roux** holds a PhD in economics from Lyon University (France). She is lecturer and researcher at the University of Geneva, Switzerland and research associate with CERMI in Belgium. As a PhD candidate she lived one year in Mexico as a research fellow of the Centre d'Etudes mexicaines et centroaméricaines (CEMCA).

Since then she has been involved in several research projects in rural microfinance in Morocco and Mexico and is currently involved in a research project funded by the European Investment Bank on the credit delinquency crisis of the Microfinance sector: India, Senegal, Morocco and Dominican Republic.

## Abstract

*Smallholder coffee farmers in Colombia face economic challenges and difficulties to increasing production levels. 50 coffee growers, part of an international value chain were surveyed in 2013 to understand the access they have to financial services, including the services provided by coffee growers' cooperatives. The cooperatives aim at improving the access of coffee growers to adequate financial services. Their services are concentrated on the delivery of loans, subsidies for purchasing supplies and basic insurance services. The study found that there is still a gap to be filled between the cooperative's offer and the coffee growers' needs for financial services.*

## Introduction

It is now well acknowledged that mainstream microfinance is not well suited to finance agriculture (Morvant-Roux 2009). Growth objectives often combine with one-size fits all approaches and translate into market concentration in urban areas. In line with this trend is the growing importance of consumer credit. Top down approaches are not concerned with financing the producer. Instead they are more interested in opening new market niches, which has led to increasing loans for consumption. As a result, rural areas are still mostly characterized by a high degree of financial exclusion.

In some countries state intervention has provided specific support (direct subsidies or technical assistance) to allow microfinance institutions to maintain their presence in rural areas with the view to better serve agricultural activities. This is the case of Banco del Nordeste in Brazil with its subsidized loan product towards agriculture (AgroAmigo). Another example is the PATMIR- Programa de asistencia tecnica a las microfinanzas rurales- in Mexico that has been providing technical assistance to rural microfinance institutions for more than ten years. Beyond state intervention, financial innovation

within agricultural value chains has been identified as a promising solution to finance agriculture, which is considered risky and costly. Because "producer organizations are a critical component of many value chains," in many contexts, they have often been pushed to provide financial services to the producers (Miller & Jones, 2010: p. 29). This short paper intends to contribute to this strand of the literature on value chain agricultural finance. We rely on a case study with Colombian smallholder coffee growers (specialty coffee) integrated into an international value chain, from the farm to the international roaster. We assess the main constraints (financial, economic) coffee growers face to ensure their production and assess whether producers' organizations are responding to farmers' financial needs or not.

## The context

Coffee is an important economic sector in Colombia. Most of the coffee is produced by smallholder farmers (less than 5 ha) that face several difficulties. Coffee growers face adverse conditions induced by increasing fertilizer prices due to international demand and higher labor costs compared to other coffee producing countries as well as low productivity levels. Farmers face difficulties to increasing their production levels and most of them combine coffee production with other income generating activities. The 50 coffee growers surveyed by Valentina Lozano in 2013 supply coffee beans along a value chain that involves different actors: farmers (7,000), cooperatives, exporting companies and the international roaster.

Four main credit sources have been identified in the region: coffee growers' cooperatives, Microfinance institutions like Bancamia, the Agrarian Bank and informal lenders. Credit providers exhibit different features in terms of average loan, interest rate, credit length and collateral requirement.

## Main findings

### 1. From the coffee growers' perspective

To summarize, following are the main financial practices of interviewed coffee growers:

- 76% of farmers made a loan in the past year, possibly to cover cash flow needs caused from their negative financial results ;
- The credit penetration of cooperatives is 32% of interviewed producers, while MFIs exhibit 5% coverage of our sample. The Agrarian bank holds the highest share with 52%. This result has to do with longer credit time span, higher credit amounts, low interest rates and presence in rural areas;
- Farmers prefer to save resources by buying farm assets; however, 18% stated they were not able to save money;
- 79% of loans are used for handling farm works with the aim to increase productivity;
- Farmers tend to acquire loans as the main solution when dealing with unexpected events as when dealing with low income periods.

### 2. Financial services supplied by cooperatives

Recently, coffee growers' cooperatives have started to deliver financial services to improve the access of coffee growers to adequate financial services. Producers' cooperatives have concentrated on the delivery of loans, subsidies for purchasing supplies and basic insurance services (life and funeral). The average utilization is 62% of members, with the rest of farmers acknowledging that they are not familiar with the cooperatives' financial services. Credit services are the most offered from all financial services (36%), even though their span is short (one year) considering farmers' needs. Interest rates (6-15%) are quite low compare to MFIs (33%) or even the Agrarian Bank (18-28%).

Cooperatives are not legally allowed to collect deposits while producers apparently ask for this service to be delivered.

Other financial services like the following: long term loans, crop and weather insurances, workers accident insurance, housing insurance, leasing, debit or credit cards, and other innovative financial services are not being yet proposed by the cooperatives.

Finally, the cooperatives need to improve their communication strategy to deliver more financial services to coffee growers and need to increase their scope with new and more innovative financial products that provide higher value to their members.

The main conclusion is that there is still a gap to be filled between the cooperative's offer and the coffee growers' needs for financial services. Reducing the gap will allow new generations to stay in the coffee business because access to those services is one of the variables that impacts the capacity of ensuring long term coffee supply.

However, beyond better-tailored financial tools to ensure both the level and the quality of the coffee production in Colombia, the study points out the adverse economic conditions coffee growers are facing (prices, production costs, risks). These factors make coffee growers highly vulnerable and weakens the long run sustainability of the whole value chain. This calls for supportive public policies and market regulations that protect the producer. From this perspective, the relevant actors along the VC include: national governments, international roasters, cooperatives, farmers and customers.

### Comments from the audience during the Workshop

Good to point out that long-term sustainability is not guaranteed either. Young people find migration more attractive than coffee growing.

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# Microfinance, energy needs and the agricultural value chain

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## About the author

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He received his PhD from Freiburg University and an MA from the Fletcher School of Law and Diplomacy (Medford, Mass).

## Abstract

*This article argues that microfinance can play a critical and beneficial role in connection with value chain finance, possibly resulting in a win-win situation for the lending institution and farmer. For that reason established MFIs may wish to explore the opportunities in rural and agricultural financing if embedded in value chains. This applies especially to the financing of renewable energy in agricultural and rural production and the corresponding value chain.*

## Value chain finance: Who benefits?

Value chain finance is getting increased attention, especially in connection with rural and agricultural development. Value chains with their multi-layered delivery contracts between input suppliers, producers, transformers, processors, transporters and off-takers could facilitate the financing of high risk activities like agriculture in low income economies. This is basically due to the fact that input and produce related contracts along the value chain could fulfill the role a collateral substitute. Conventional forms of collateral are often not available when financing small holders. To make up for this shortfall the prospective creditor of a farmer could use contractual commitments made on behalf of the farmer by other value chain actors: suppliers of seeds and fertilizers, transporters, produce traders, warehouse owners and exporters.

Already in the 1990s<sup>1</sup> work by FAO, Fleisig and others threw light on the scope for collateral innovation in agriculture, however this was not with a specific view of the potential for microfinance institutions. Whether these contractual arrangements in connection with the value chain yield benefits to lender and borrower equitably depends on the market organization along the value chain. Perfect inputs and commodity markets make it likely that financial transactions benefit both borrower and lender. However, if the markets along the value chain are inefficient, distorted and monopolistic, then the outcome is less certain and may deviate from a win-win situation. This has a bearing on the configuration between the loan contract and the other value chain contracts.

If markets along the value chain are efficient, accessible and transparent, then it does not really matter whether the loan contract is with another value

chain actor or with an outside financial institution, for example a microfinance institution. In either case the farmer has a choice. If, on the other hand, some input, produce, transport and other markets along the value chain are monopolistic, then the outcome is different for the farmer depending on whether the debt contract is with an internal or external actor.

Let us first assume that the loan contract is internal, i.e. lender and borrower belong entirely to the value chain. An input supplier, produce off-taker or processor has in addition to the commodity contract also a financial claim on the farmer. If the input supplier or off-taker operates in a competitive environment, then there is no drawback for the farmer. If these value chain actors are monopolists, then the farmer is exposed to the risks of an "inter-linked contract."<sup>2</sup> This is because the farmer depends on the delivery of seeds, fertilizer and transport from his creditor and will therefore be obliged to accept any level of interest rates. The risk of exploitation might also work the other way around: having the burden of repayment obligations the farmer may accept overpricing of agricultural inputs and underpricing of agricultural outputs or rationing of both and of capital imposed by the same value chain actor, who is at the same time the creditor. Having several contracts at the same time with the same value chain actor in different markets may thus not produce beneficial results for the farmer, it depends whether the input and other markets along the value chain are monopolistic or not.

The risk of exploitation via interlinked contracts is mitigated in an external financing arrangement with a MFI or a bank, i.e. an external agent outside of the value chain. In this triangular relationship the farmer negotiates contracts separately with other value chain actors and with a bank/MFI outside of the value chain. The farmer has a repayment obligation to an institution that is placed outside of the value chain and different from input supplier or produce off-taker. Regardless of possible market failures in input or produce markets, this arrangement is in principle preferable for a small holder farmer. It separates the loan contract from delivery contracts. He has more leeway and negotiation power. Regardless of other possible benefits to the three parties (farmer, other value chain actors and financing agent), the entry

<sup>1</sup> FAO Amman and Fleisig, Heywood: see references.

<sup>2</sup> Bardhan, Bose, Caplan, Rahman.

of a third party remaining outside the value chain is ceteris paribus beneficial to the farmer as it reduces the scope for coercive price and rationing clauses in agricultural lending. This benefit should even be more pronounced if the financing agent is a social enterprise, as most microfinance institutions would presumably define themselves.

### Microfinance for energy in agricultural production holds promise

The private and social benefits of MFIs entering value chain finance, especially in agriculture, could be particularly striking if loans are used for a productivity-enhancing technology like renewable energy. Astonishingly neither input suppliers, produce-off takers nor other conventionally dominating value chain actors have so far considered green energy as part of the value chain. Moreover, green microfinance is still associated with renewable energy primarily in households. Grameen Shakti, a value chain business model in the area of solar home systems uses microfinance techniques, but is not really a MFI nor an actor in the agricultural value chain. Its objective is to reach out to poor households with solar home systems and other RE devices to enhance consumer welfare. If additional income generating activities are taken up thanks to more lighting at home, then this is a welcome side effect, but it is incidental and not systematic. For MFIs this focus of green energy on household devices has an important drawback: there is no value added, hence the client's cash flow is difficult to assess, more so than for a productive use.

By contrast, if the MFI finances renewable energy in small and micro enterprises even in a high-risk sector such as agriculture then the cash flow can be anticipated, the energy is an input for adding value, enhancing agricultural productivity and increasing incomes and the demand for other microfinance products. Moreover, the MFI can collateralize the RE device, whether the device is used for land preparation, cultivation, irrigation, processing, storage or transportation. Not to be neglected is the growth potential as evidence shows that increased energy use goes hand in hand with increased productivity in agriculture.

### Entry points

Renewable energy lending within agricultural value chains appears feasible to mature, established MFIs; however, it takes some adjustments:

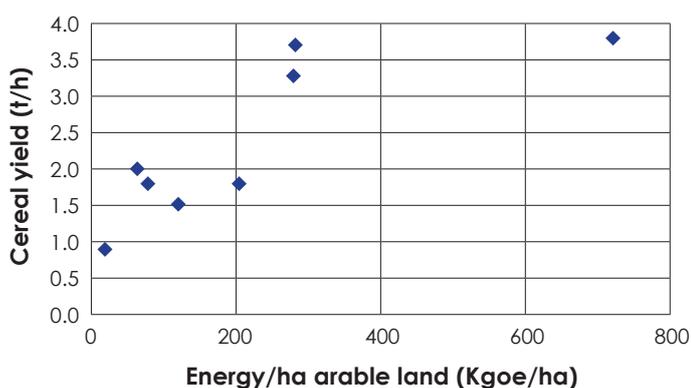
- The maturity of loans would need to be adapted, as green loans tend to be longer term than most other microcredit products;
- Specific default issues need to be anticipated and dealt with: if a technology provider fails to deliver in maintenance and repairs, clients have been observed to simply stop paying back (third party risk);
- Many green loans are neither straightforward business nor consumer loans, but somewhere in between, which means that the client's cash flow need to be carefully examined upfront;
- The good news is that renewable energy loans can be easily collateralized.

So far the evidence on MFI involvement in this specific segment is mixed. In Bangladesh, for example, the policy to provide technology and financing by one and the same institution (as in the case of Grameen Shakti) has in effect been a disincentive to green energy lending by genuine MFIs: it is primarily NGOs or commercial operators that are active in this field. In Cambodia,<sup>3</sup> on the other hand, there is some involvement (notably ACLEDA, AMRET, PRASAC and Vision Fund) as well as up front funding from donors and government, but the ultimate beneficiary is the poor household that enjoys more energy efficient cooking and lighting. Boosting the productivity of agricultural production through more efficient energy devices is not yet on the agenda. Similarly, BRI in Indonesia is the only financial institution with a credit facility for renewable energy, again largely for the acquisition of solar home systems in households. This is also valid in the Philippines where ASKI and TSKI provide micro-credit for solar home systems, FSSI provides equity and project financing for RE eco-enterprises and CARD-MRI BDSFI has a solar power financing scheme for households.

Pilot programs that explore this field and prove the business case could contribute to evolutions in this matter. As MFIs running green loans in agricultural value chains appeal strongly to "impact investors," i.e. institutional investors and high net worth individuals who like to see a triple bottom line performance in microfinance, funding should not be a concern.

### Hot topics:

- interlinked contracts and information asymmetries
- scaling up obstacles in the value chain



3 AMRET, one of the largest MFIs with 113,000 clients, has provided collateralized energy loans of up to USD 5000 for batteries or diesel generators, with a repayment period of 24 months and an interest rate of 36% on a declining basis.

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# Myanmar: value chains in agricultural microfinance

Jay P. Supetran

## About the author

**Jay P. Supetran** is the program manager of PlaNet Finance in Myanmar. He has been with PlaNet Finance since 2010 managing a food security project in Cambodia and Vietnam. He is presently managing the cooperative and enterprise development project in Myanmar. He took graduate studies in community development at the University of the Philippines.

## Abstract

*The development of Agricultural Microfinance (AMF) loan products provided by microfinance institutions (MFIs) is complementary to value chain financing and will increase flow of resources to the rural areas as well as benefit farmers: particularly the small landholders. PlaNet Finance is developing cooperatives in Myanmar that will provide AMF and support to agribusiness initiatives in post-conflict areas.*

## Traditional agricultural financing

Agriculture in Southeast Asia is generally characterized by the prevalence of small landholding farms, mostly devoted to food crops and a number of industrial cash crops. Poverty and food security are the twin issues tied to agricultural policies of most governments in the region. In the 1970's efforts at supporting agriculture focused on rice, replacing traditional varieties with high-yield hybrid varieties dependent on inputs and pest control chemicals. It was supported with full range of infrastructure development such as irrigation, farm-to-market roads and post-harvest facilities funded through governments-owned or controlled banks.

Government banks facilitated the flow of funds from the government and multi-lateral financial institutions like World Bank (WB) and the Asian Development Bank (ADB) to the farmers, financing the whole value chain, from the construction of irrigation facilities, provision of inputs (seeds, fertilizers and pesticides, including labor cost), procurement of mechanized equipment, post-harvest processing and storage and trading, both local and export. The traditional financing has improved production output but has not improved the condition of the farmers. However, the program is consistently being implemented as the Official Development Assistance (ODA) to agriculture from 2005 to 2010 grew 19%.<sup>4</sup> All of these in the context of social perspective - food security and poverty reduction.

The governments' supply-driven approach to agricultural finance is heavy on subsidies, which are evident in production loans at below market interest rates while the government procurement program buys at higher price during the harvest season. Loans are exposed to credit risk as repayment is primarily based on the harvest and not on the capacity of the farm household to repay. When calamities occur, non-repayment is justified, even if the farmer has other sources of money for payment. This is one of the main

reasons why formal financial institutions shy away from agricultural credit. Furthermore, the availability and easy access to traditional agricultural financing has developed the dependency of most farmers and stretched out the resources of their respective governments.

## Agricultural microfinance (AMF) as an alternative

The institutionalization of microfinance in the 80's brought about a new way of providing financial services to the poor. The methodologies enabled the poor to access credit and savings facilities and have developed financial discipline among the borrowers. This was a drastic change from development programs. Microfinance institutions were able to make the schemes sustainable by charging cost-covering rates and generating margins that would ensure not only continuous operations but expansion as well. Microfinance was therefore transformed into commercial operations and gradually weaned away from donor funds as social investors began pouring funds to microfinance service providers that exhibited capacities to be sustainable. Initially implemented in the urban poor areas with high density of the poor, microfinance has gradually been expanding to the rural areas, covering not only the entrepreneurial poor but agricultural production as well. This led to the development of agricultural microfinance (AMF), which is basically using features of microfinance loans for agricultural production. Despite improvement in the provision of financial services, financing for agriculture still lagged behind.<sup>5</sup> Most of the small landholders remain without access to financial services and are more often than not, hostage to informal moneylenders for their financing needs.

What we need therefore is a facility that can reach out to the small landholders and provide the necessary financing and support. It is in this context that MFIs became relevant, where private sector initiated financing operations will be more sustainable than the traditional government agricultural financing which may foster dependency. Financial discipline is also instilled as the loan is based on the household cash flow of the borrower which considers the overall capacity to pay. It also enables the microfinance institution to minimize risk, even when natural disasters destroy the crop.

<sup>4</sup> Catalyzing Smallholder Agriculture Finance, Dalberg Global Development Advisors, 2012.

<sup>5</sup> Peck, Robert et al, Segmentation of smallholder Households: Meeting the Range of Financial Needs in Agricultural Families, CGAP Focus Note, No. 85, April 2013.

### AMF and value chain financing

The value chain financing approach is relevant among commercial farmers but may not be compatible with subsistence level farmers. The non-commercial farmers may need not only financing for production but more of a general type of loan that covers the farmers, the production and consumption needs.<sup>6</sup> For farmers that have surplus and are producing for commercial purposes, AMF can provide for the financing of production inputs, labor requirements, or even small equipment. This can be provided by MFIs who are familiar with the individual farmers and can manage risk at the community level. PlaNet Finance directly supervised the implementation of this approach starting in 2012 in selected countries in Southeast Asia covering a broad spectrum of commodities, with initial results shown in the Table 2 below.

For bigger investments like post-harvest facilities, commercial banks and government programs can provide financing. Communal projects such as irrigation and farm-to-market roads can also be the responsibility of the government.

### Myanmar project

Myanmar is basically an agricultural economy, with the sector contributing 43% of GDP and employing more than half of the population. Microfinance is an emerging industry as the law on microfinance was approved and became effective only in November 2011. Currently there are 197 licensed MFIs in the country serving 1.4 million clients out of the official 5.4 million population of the country.<sup>7</sup> With the very limited presence of banks outside the main cities, the MFIs are poised to be the main financial service providers in the rural areas especially among the agricultural producers.

PlaNet Finance, with the support of the European Union (EU) and the Agence Francaise de Développement (AFD) is involved in the development of a community-based cooperative that will provide microfinance services in Kayin State. The cooperative once operational will provide technical and financial assistance to agri-based and non-agricultural rural enterprises in thirty (30) villages of Hlaing-bwe township in Kayin State.

Currently, studies on farm systems are being conducted together with value chain analysis of top crops particularly rice, rubber, sesame seeds, peanuts and organic ginger. The ESSEC Business School partnered with PlaNet Finance to assist in value chain analysis of some of the identified crops. The result of the studies will be the basis for the value chain financing of the project.

### UMM Workshop

The workshop highlighted two main things. The first is the importance of technology and economies of scale to make agricultural production scale up and be commercially viable. The second is the “scaling down” of financial institutions to be able to cater to the needs of the small landholding farmers. Meeting these seemingly wide gaps will hasten collaboration that will benefit all players in the value chain.

Among the main issues in value chain financing:

- Consolidating small farmers and their production to make it commercially viable;
- Attracting more social investors to value chain financing, as more are still in the subsistence-level of financing economic activity.

Table 2:

Country	Number of loans	Value of loans (US\$)	Average loan size	Weighted avg. PAR
Philippines	1071	481,000	449	2%
Cambodia	420	188,000	448	< 1%
Vietnam	125	20,000	160	< 1%
<b>TOTALS</b>	<b>1616</b>	<b>689,000</b>	<b>426</b>	<b>1%</b>

<sup>6</sup> Ibid.

<sup>7</sup> Census pegs population at 51.4m-below old estimate, Myanmar Times, September 1-7,2014.

# Towards a holistic approach to agricultural finance - The role of value-chain finance in KfW's agricultural finance activities

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## About the author

**Ron Weber** has been working for KfW Development Bank since 2008 and currently holds a position as Sector Economist in the Financial Sector Policy Unit. In addition, he is an independent researcher at the chair of Prof. Oliver Musshoff at University of Goettingen (Germany). Prior to his appointment as a Sector Economist, he worked for KfW's financial sector development unit for Sub-Saharan Africa. He graduated with a Master's degree in Agricultural Economics at Humboldt University Berlin (Germany) and received his doctorate degree from University of Göttingen. His research interests include access to financial services for micro, small, and medium-sized enterprises in developing countries with a focus on credit and insurance for agricultural firms.

## Abstract

*Agricultural finance has always been important but it's never been a low hanging fruit owing to multiple challenges. Most of the existing financial institutions in developing countries focus on large loans and/or operate in urban and semi-urban areas where the costs of reaching potential clients are relatively low compared to rural areas. Despite the attempts of some financial institutions to approach the agricultural sector by introducing agricultural loans, savings, and insurance products, the majority of farmers in developing countries are still financially excluded. This paper seeks to provide a brief overview about the motivation and the activities of KfW Development Bank in linking the financial and the agricultural sector in developing and emerging countries. In this context challenges of the most recent and innovative activity "Capitalizing and supporting value chain finance providers" are discussed in the example of the Fairtrade Access Fund.*

## The role of value-chain finance in KfW's agricultural finance activities

Agricultural finance has always been important but it's never been a low hanging fruit owing to multiple challenges. Before the 1990s KfW's financial sector projects were mainly implemented under the so called "old development paradigm" which was characterized by (politically) directed lending via agricultural development banks. With few exceptions the success of these projects was disappointing as most of them failed because borrowers did not pay back their loans. Given these results, which were typical for projects of other development finance institutions implemented during that period, the old development paradigm was replaced by a "new development paradigm." The new development paradigm dominates financial sector development and focuses on building solid financial institutions. This includes many of the microfinance institutions (MFIs) serving micro, small, and medium enterprises (MSME) on a sustainable, i.e. cost covering basis. This approach has proven to be very successful and especially the microfinance industry underwent a

rapid development during the last decade.

Most of the existing financial institutions focus on large loans and/or operate in urban and semi-urban areas where the costs of reaching potential clients are relatively low compared to rural areas. Loan officers in rural areas need to travel longer distances in order to reach potential clients which is costly in time and fuel. Unfortunately the rural areas are where most farmers live and operate their businesses. In addition to these general challenges in rural finance, most financial institutions do not have the right products and procedures in place to deal with the special production circumstances of agriculture (e.g., seasonality, risks). In order to overcome these obstacles some financial institutions started to introduce flexible microfinance loans to match repayment plans and cash-flow patterns, and apply mobile banking technologies to reduce travelling cost for loan officers. However, despite these attempts financial institutions are still reluctant to target small scale farmers especially because operational costs and sector risks could not be sufficiently reduced. Moreover, there is evidence that agricultural sector risks cannot be adequately addressed by flexible microfinance loans and even limit the success of the latter, where already introduced. Such loans might be able to reflect seasonality but cannot cope with adverse weather or price shocks. Recent research in this context also suggests that adverse weather shocks significantly erode portfolio quality of MFIs.

Studies like "Catalyzing Smallholder Agricultural Finance"<sup>8</sup> and a recent analysis of KfW's agricultural and financial sector portfolio show, that most support to foster agricultural finance in the past has focused on the demand side, i.e., the farmer, whilst too little support was provided to develop the supply side, i.e., financial institutions. Taking this and the above mentioned framework conditions into account, KfW together with the German Government agreed that there is the need for a stronger support of the supply side through a holistic agricultural finance approach. This approach consists of the following activities: (1) "Supporting the development of sustainable (M) FIs" with capacity development and refinancing

8 [http://dalberg.com/documents/Catalyzing\\_Smallholder\\_Ag\\_Finance.pdf](http://dalberg.com/documents/Catalyzing_Smallholder_Ag_Finance.pdf)

for agricultural portfolio creation, (2) "Foundation of new investment vehicles" to provide debt and equity finance directly to farmers when there exist no financial institutions able to fulfil this task, (3) "Capitalizing and supporting value chain finance providers", e.g., agricultural producer organizations or the agro-industry, which provide financial support to their members or customers, and (4) "Capitalizing and supporting insurance companies" which offer or develop insurance products against agricultural production risks. In order to share risks and crowd-in private capital for these activities, KfW furthermore supports the creation of private investment funds. Except for (1), all activities are relatively new for KfW and require more efforts to assure sustainability and to supervise the implementation of responsible finance principles. In the following the third approach "Capitalizing and supporting value chain providers" is presented at the example of the Fair Trade Access Fund, a global fund providing financing and capacity development for agricultural producer organizations.

#### **Fairtrade Access Fund (FAF)**

The objective of FAF in which, on behalf of the German Government, KfW has invested EUR 5 million is improving the livelihood of farmers and landless by investing in and providing technical assistance to Fairtrade certified agricultural producer and labour organizations. These organizations provide access to capital, particularly long-term capital, to their members allowing them to improve their operations, accrue value and break the cycle of agrarian poverty. Furthermore, farmers will

be supported through access to critical, actionable information that allows them to enhance yields, reduce or prevent the impact of diseases and gain market access, especially Fairtrade market access. In contrast to financing from financial institutions, smallholder farmers can benefit from more than just finance in this context. FAF also supports the Fairtrade value chain by providing access to financing for plantations, traders and processors as well as microfinance institutions focused on the agricultural sector whose products and services benefit smallholders. The disadvantage is that this increases complexity which makes it generally difficult to supervise that financial support to farmers is provided in a responsible manner. However, in the case of FAF the implementation of responsible finance principles is facilitated by the fact that all partners of FAF are Fairtrade certified organizations whose core principles are fair conditions for their members.

#### **Outcome of the panel discussion**

During the discussions the pros- and cons of value chain finance approaches, especially the dependencies of smallholder farmers from traders and input suppliers were discussed intensively. There was consensus that value chain finance needs strong supervision to make sure that smallholder farmers can benefit. However, the auditorium agreed on the plausibility that KfW has chosen to follow a holistic approach in agricultural finance, including value chain finance. Moreover it was stated that despite the challenges MFIs face in going rural, microfinance deserves an important place in agricultural finance.

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# Value chains in agriculture and green microfinance

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## About the author

**Flavia Villela** an agricultural economist at the Federal University of Viçosa in Brazil and currently a candidate for the International MSc in Rural Development at the University of Ghent and Humboldt University of Berlin. Her research focus is on energy use for smallholder upgrading in agricultural value chains. Additionally as a Research Assistant at MicroEnergy International she works on value chain mapping to identify leverage points for energy interventions.

## Abstract

*Value chains are a broad concept that need a clear definition in order to understand the relationship between agriculture and green microfinance. A value chain has market-driven orientation, from where the value emerges. Green microfinance can play an important role in the creation of value by bringing access to energy but also by taking advantage of the approach and acting market-driven and recognizing the needs and bottlenecks in the structures and dynamics of the value chain in question.*

## Introduction

Value chains in agriculture and green microfinance is a very broad topic and needs explanation. Firstly this thematic paper aims to clarify the concept of a value chain by doing a short comparison with supply chains. Secondly, we will consider agriculture value chains in the context of green microfinance.

## What is a Value Chain?

Before discussing the role of microfinance in value chains, it is crucial to understand the concept of value chains. According to Porter (1995), value is the amount buyers are willing to pay for a good or service. Porter idealized the concept of "value chain" when summing up the value added by different activities within a firm. These activities, once linked to other firms' "value chains," formed what he called a Value System. Currently, these linkages among firms creating value processes are understood as the Value Chain (FELLER et al. 2006). The actual value chain concept is commonly understood as the full range of activities (by individuals and firms) to bring a product from its conception to its consumption and disposal, including not only production and manufacturing but also design, marketing, distribution and support to the end consumer (GEREFFI 1994).

## What is the difference between Value Chains and Supply Chains?

The concept value has three main components/ characteristics (FELLER et al. 2006): a) value is subjective and depends on the context; b) value occurs when needs are met through the provision of products, resources or services during transactions; c) lastly, value can be an experience, flowing from the customer to the recipient of resources. The key difference between supply chain and value chain is

that, although both can be perceived as flows, they occur in opposite directions, value chain being a market driven approach, highlighting the demand as the source of the value.

## Value Chains in Green Microfinance?

Green Microfinance is part of value chain structure, as it acts as a supportive market providing financial services for the group of firms operating in the chain. The "green" aspect, through energy inclusion, creates opportunities for firms to upgrade their value chains with clean energy systems. However, access to energy does not necessarily entail upgrading; energy services need a market-driven focus to better explore the real opportunities in the market. Market access requires changes in relationships with buyers and markets (HUMPHREY 2004). Therefore, upgrading involves not only the development of the technological capability, but also the creation of incentives and market access.

In the reality of energy projects, any intervention aimed at the development of smallholders or MSME to upgrade and foster added value activities, should consider intervention with the involvement of other stakeholders and firms in order to simultaneously foster market access, while creating the right incentives. Currently many MFIs have been acting not only as a supportive market, but bridging the gap on technology distribution networks. This behavior risks overlooking key external drivers to growth and competitiveness.

Looking at the value chain in question can help understanding how its structures, the firms' organization, its dynamics and governance patterns may influence on the upgrading strategies created by the green microcredit. This approach is useful to identify bottlenecks and to formulate strategies to engage firms to access higher value markets. Additionally, the value chain approach recognizes how different elements can impact the performance competitiveness and upgrading of a chain. These elements are related to existence of power asymmetries between producers and buyers, trust relationships, existence of standards, control mechanisms or existence of cooperatives.

Even though renewable energy solutions have a potentially large market, their uptake has been severely hindered due to a gap in adequate governance models, subsidies (KÖHLER 2014) and energy-financed opportunities (CHANDRA RAO et al. 2009).

A value chain perspective can maximize positive impacts of energy technologies and green microfinance, whereas a supply chain would basically have the delivered technology as the project outcome (BEERMANN 2013). There are synergies between expanding energy access and the promotion of innovations in value chains and this can be explored by particular local sectors and energy markets in a way they can be mutually reinforced (SERENA 2011).

### Hot topics

How can microfinance work for the value creation of a sector?

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# ICT applications in the development of the shea value chain in Ghana. The case of StarShea Ltd.

Susann Seifert and Heino Kantimm

## About the authors

**Heino Kantimm** joined SAP in 1998 where he worked as an analyst in the newly formed competitive intelligence department. He helped to grow the small team to a global organization, of which he took over global leadership in 2007. Since 2009 he focuses on new business models at SAP. First, as a Chief Expert Social Sustainability, Mr. Kantimm led the StarShea project. He is co-founder and member of the Board of Directors of the social business StarShea Ltd. in Ghana. Today, Mr. Kantimm drives SAP's business model innovation efforts around connected vehicles. Heino Kantimm lived and worked on four different continents. He holds a degree in computer sciences and business administration from Mannheim University.

**Susann Seifert** is currently the country representative in Germany for PlaNet Finance. Joining the organization in 2010, Ms. Seifert has worked since the beginning as a business development officer for PlaNet Finance's shea project in Ghana contributing significantly to the success of the present social business. In her position with PlaNet Finance she is also responsible for the development and implementation of projects with the private sector in the field of agriculture and health. Susann is a certified expert of microfinance and holds a diploma in business administration from the University of Applied Sciences in Zwickau.

## Abstract

*In tackling information asymmetries, lack of knowledge and physical distances, Information and Communication Technology (ICT) is an effective tool to achieve value chain integration. In the context of agricultural value chains involving marginalised farmers of rural developing countries, ICT has shown high potential to smooth production and increase smallholder productivity, improve access to local and international markets and make financial products available to support production. Leveraging this potential, PlaNet Finance and SAP have helped to restructure the production of a shea value chain in Ghana and then developed ICT applications to manage production, trace products and create access to financial services along the chain.*

## ICT Application Can Improve Agricultural Value Chains in Developing Countries

A basic element of any agricultural value chain that can be strengthened by the integration and use of ICT is the process of information gathering and exchange. Information is in fact critical for well-functioning markets. Its free flow, as well as the ability to process it, are key elements to reduce market distortions and increase the overall welfare of market actors. Information also reduces production risks, minimizing the negative impact of unpredictable events and smoothing production. In agricultural value chains which include smallholders from rural parts of the developing world, ICT is an effective tool that generates digital proximity between the value chain actors, facilitating the exchange of market information.

Miller (in FAO 2013) refers to three basic areas of ICT applications ameliorating smallholders' living conditions and increasing productivity. (1) **ICT applications can improve smallholders' production**

**systems.** Up-skilling farmers on the application of Good Agricultural Practices is one of the key interventions to increase smallholder productivity and ICT may be instrumental to achieve it while increasing farmers' knowledge about new agricultural technologies, research on crop diversification or new techniques to cope with productivity threats e.g. by matching cropping practices with climate change. Given their potential of reducing the costs related to information gathering and sharing, ICT can make risk transfer more cost-efficient for the insurer and affordable for the insured. ICT may create crowd-sourcing strategies to outsource data collection to fellow villagers and/or local governmental authorities enabling more accurate analyses useful to improve local production systems. (2) **ICT can facilitate access to markets and related services.** Price transparency and the knowledge of the market actors facilitated by the use of ICT enable the connection and exchange of information between producers and buyers. This can create Virtual Trading Floors (VTFs), connection platforms representing electronic market places where buyers and sellers connect over an electronic network (FAO 2013). Commodity exchanges between buyers and sellers are facilitated and future prices and risk management options are easily shared. (3) **ICT can support financial inclusion of smallholders.** Smallholder farmers face significant financial challenges in the form of pre-financing of inputs as well as harvests instability due to pests, crop diseases or unfavourable weather condition. ICT can support providers of financial services (e.g. MFIs and banks) and extend their outreach. Mobile money services are one of the most common financial services provided via ICT. They allow for credit, savings, insurance and retail payment instruments (FAO 2013). Key learnings derived from PlaNet Finance research and pilot projects related to financial inclusion and ICT in the African context<sup>9</sup> have been: (i) the choice of the mobile money provider(s)

<sup>9</sup> Exploring the potential of ICT in relation to financial inclusion in Africa, PlaNet Finance has looked into two markets: Uganda, which experience the fastest growing mobile connection market in Africa, and Cameroon. In Uganda, the viability of a value chain fully based on electronic payment has been explored, as well as the development of mobile banking for an MFI reaching 25,000 dairy farmers. In Cameroon instead, a mobile application (with the support of RAES & Orange Labs) gives loan officers of three different MFIs the opportunity to electronically capture data from their follow up visits.

to partner with is extremely important; (ii) it is not possible to fully de-materialise the entire loan process, with specific reference to the face-to-face credit evaluation process of loan providers; (iii) value chain actors should be involved in the credit process to help assess the capacity of an end user to repay a specific loan; (iv) training of the end users on how to use a new device is crucial.

### **Reducing Vulnerability of Women Shea Farmers of Ghana: the StarShea Ltd. Social Business**

Since 2005, smallholder value chain integration has been an effective approach for PlaNet Finance to improve the living conditions of impoverished people. Using, adapting and developing new ICT applications in order to achieve this objective is a new instrument currently being explored and tested in order to help create linkages between the different value chain participants. Combining ICT, education and microfinance PlaNet Finance, in cooperation with SAP<sup>10</sup>, is contributing to the strengthening of the shea nut and butter value chains in Ghana. This project is known as the StarShea Ltd. Social Business.

The shea fruit has multiple applications in the food and cosmetics industries and each one has its own specific value chain. The traditional shea nut industry, which in Ghana employs 600,000 very vulnerable women farmers ("Shea Subsector Study Report," 2006), is labour intensive, often decentralised and shows poor efficiency (Kent & Bakaweri, 2010).

Aiming at improved production performance and strengthening the bargaining position of the farmers, PlaNet Finance and SAP have first supported the grouping of women producers to reorganize production under the newly formed StarShea Network (SSN), and secondly created the Star Shea Ltd. (SSL) social business to take care of the commercial side of the value chain.

#### **How ICT has made the difference for StarShea Ltd.**

Connectivity between the different actors across the shea value chain has always been a problem and has previously impeded several possible profitable business models and agreements. Improved access to the valuable shea nut industry can be facilitated by ICT applications that have been provided and developed by SAP.

The provision of microloans has always been challenged by matters in the field of loan monitoring. Information on the status of loan repayments and the quality of loan portfolios has previously been unavailable at remote branches of partner MFIs. The prototype for a Microloan Management System, developed by SAP, manages data on disbursements and reimbursements, assists loan officers in making decisions related to a potential and/or existing client and taking corrective actions. A major objective for the technology was to create added value for the two

partner MFIs, Grameen Ghana and Maata N'Tudu, to be able to provide timely services to women as beneficiaries. The software allows credit officers to have all necessary information about their clients with them at all times when they are out in the field, without the need to be connected to the central system. With that, loan officers always have up to date data and can make decisions about loans at a much faster rate. They can capture repayments in the system at the time when they occur, and as a result, have more accurate information at any given point in time. Once they have internet connectivity again, then all information will be synchronized with the central system. The management of the MFI on the other side always has real time transparency about the loan portfolio and as such can make better informed decisions.

SAP's involvement not only includes the management of financial services. It also included all services provided along the value chain such as traceability and the general seller and buyer connection. Since traceability represents a unique selling proposition for the StarShea Network and its international buyers the development of traceability tools for the nut transactions was another primary task executed by SAP. For this purpose the software Rural Sourcing Management was developed. SAP Rural Sourcing Management is an integrated, cloud based solution combining mobile and desktop access to track produce from farm to factory. The supply chain software uses a smartphone based traceability tool and a barcode system that can ensure each bag or box of nuts produced and sold through the SSN can be linked back to a particular woman producer. It also facilitates, monitoring of organic and fair trade certification, and the better organisation of controls and supervision. Such transparency across the entire value chain drives efficiency and reduces costs for StarShea Ltd. It also is a competitive differentiator which is reflected in the international market's willingness to pay a higher price. These monetary benefits can then be shared with the producers. Women who are part of the StarShea Network and sell their products through StarShea Ltd. can achieve multiples compared to women who are not yet part of the StarShea network.

ICT applications support the governance of women farmers (e.g. memberships and financials), operative business processes (e.g. bulk selling to buyers), and analytics and certification (e.g. for fair-trade markets). Specific functionalities within the system include producer registration, prices broadcasted to smartphones, buying and loading via phones, notification panels, a device synchronization monitor, transactional analytics and GIS-Backdrop (Geographical Information System). Established players — such as buyers, exporters and multi-nationals sourcing companies — profit from enhanced transparency and reliability when conducting business with the SSN. They can now plan and forecast more accurately.

<sup>10</sup> SAP (Systems Applications Products in Data Processing) is a European multinational software corporation that makes enterprise software to manage business operations and customer relations. Headquartered Germany, it has offices around the world.

### Outlook of SAP rural Sourcing Management

In terms of scalability of the software solution, great advancements have been made by SAP. The technology has been successfully tested in 5 different smallholder farmer value chains (cashew, rice, coffee, cocoa and shea) in 5 different countries in West and Central Africa. For 2014, a total of 20 pilot projects with 9 different crops and 10 countries, covering more than 50.000 small holder farmers is planned.

### Conclusions

Reorganise the production and introducing ICT applications in the shea value chain of Ghana has allowed the women farmers to improve productivity, smooth production, access to finance, offer traceability of the product and becoming attractive to new international buyers offering premium prices for a higher value added attached to raw and transformed shea nuts. This opens new ways to further develop the StarShea Ltd. social business and consequently to decrease the economic vulnerability of the women shea farmers of Ghana.

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# Four questions with Alicia Rondón-Krummheuer

Interviewed by Davide Castellani

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## **1. You moderated the introductory session of the workshop. What are the most relevant aspects of the presentations? What are the main points made by the audience during the plenary discussion?**

The first presentation introduced the audience to agricultural value chain (AVC) finance and a practical approach to analyzing a value chain and its actors. It showed us the different types of AVC in different regions, the complexity of those chains and their pros and cons. The key message was that for a financial institution, AVC finance can establish new markets, mitigate risks and lower transaction costs.

The main message of the second presentation was how to add the third bottom line into microfinance activities: i.e. addressing not only economic sustainability and social outcomes, but also looking into environmental issues. Green microfinance is not only energy and technology, it is more specifically renewable energy (RE), energy efficiency (EE), pollution and waste reduction, biodiversity preservation, agroforestry, ecotourism, organic farming, amongst others. Moreover, a green value chain comprises different actors, institutions, inputs and outputs required to provide RE & EE and effective AVCs. The presenters stated that it is important to learn not only from successful value chains but also from unsuccessful stories.

## **2. In your opinion, what is the nexus between agricultural and green value chain microfinance?**

Green microfinance integrates financial services and products with other types of services, such as technical advice and also fosters, apart from socioeconomic development, sustainable and environmentally friendly practices for clients, end-users and customers.

AVC microfinance offers an opportunity to expand financing for agriculture, improve operational efficiency and repayments thus, reducing financial risks. In this case, it is not foreseen that agricultural practices are performed in a sustainable environmentally-friendly manner, so here is the nexus between Green and AVC microfinance.

In principle, almost every AVC strategy could include a green component. For example, an MFI client who is using green practices or technologies can take part in a consolidated AVC. In this case, the MFI client could be implementing an agroforestry organic farming system, drying his seeds with a solar dryer, with power generated by solar panels or by biogas-digesters and receiving certification; In addition to his farming activities, he could also perform additional ecotourism activities and thus could be connected to an AVC.

However, this requires information and means to mobilize different stakeholders to get involved in an environmentally-friendly AVC.

## **3. In your experience, how do agricultural and green value chain microfinance contribute to financial inclusion?**

The financial products and services in agricultural and green value chain microfinance (AGVC MF) must be developed according to the needs of the beneficiaries. Many potential clients of AGVC MF are settled in remote, rural (poor) areas where financial services are seldom available. MFIs must "understand" the reality and knowledge of their potential clients and according to that, innovative tailor-made financial products and services can be developed. Therefore, a feasibility study, including a thorough market study with a stakeholder's analysis, should be the first step of MFIs when entering a new market segment like green value chain finance.

In order to make it green, environmental and climatological concerns and expertise must also be taken into consideration.

At this point we are contributing not only to the economic development of the poor, but also to social and environmental development.

## **4. How can academic research contribute to the improvement of both agricultural and green value chain microfinance? On which issues should research focus?**

These topics are still in the first stages of development. Most of the practical examples are in the pilot or demonstration phases; however, promising patterns of performance are emerging.

Research should be focused for instance on the potential role of public-private partnerships, the need for awareness raising, suitable governance structures for green microfinance, the role of technical assistance in microfinance, available technology versus actual needs, risk sharing to increase the resilience of rural populations, how to add value in a value chain, suitable financial mechanisms for green microfinance, how to proceed beyond pilot or innovative projects and means to monitor the effectiveness and efficiency.

# Five questions with Laura Viganò

Interviewed by Davide Castellani

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## **1. In your opinion, what role can microfinance institutions play in agricultural value chain finance?**

Value chain finance is not a new concept in the banking world. The idea of linking financial operations to the different steps the agricultural products go through in different production phases can be a winning one as information asymmetries and barriers and transaction costs can be reduced. Microfinance is obviously one of the financial intermediaries involved, with a specific focus on small and micro-sized actors. The role of MFIs can be of direct provider of services or as a link with other more specialized financial institutions.

## **2. What kind of financial products are the most suitable for agricultural value chain microfinance?**

Although value chain finance does not necessarily involve the bank's operation, as it can be directly operated by the different actors in the chain, banks and MFIs can have an effective role in each phase of this process. They can provide the necessary resources allowing the actors in the chain to start different types of financing (for example, in the form of advances) to other actors in the chain. They can also act as facilitators of the transactions offering support services, transfer of payments or they can help accessing risk management financial tools. As stated above, this is not just a role of MFIs but of any bank. However, MFIs, being closer to customers, can better tailor their services to the specific needs of the small producers at the base of the whole system. They can also offer their advice and support to help small farmers negotiate with the other actors in the chain.

The fact that their customers are in a value-chain arrangement can make MFIs' involvement more attractive. For example, they could offer short-term credit for input purchase or sales pre-financing knowing that their risk is limited by the presence of a value-chain link. They can also contribute to the development of cooperative or other centralized bodies (like collection centers) that farmers may start in order to better interact with the other actors in the chain.

## **3. In your experience, how does agricultural value chain microfinance contribute to financial inclusion?**

Value chain finance per se can be an effective tool of financial inclusion. Small and micro producers who otherwise rely only on the informal financial market can become effective participants in the official market through financial and production agreements with input suppliers, traders and other partners. Since microfinance intermediaries can become a direct provider of some of these services or a facilitator of direct relationships among actors, they forcefully contribute to this inclusive process. Being in a value-chain mechanism may allow farmers to progressively upgrade their status and increase their negotiating ability with all partners.

## **4. What are the main conclusions and policy implications of the session that you moderated?**

In the session I moderated risk affecting agricultural production and finance was dealt with according to different concepts: the risk related to the difficulties in assessing farmers' creditworthiness and the risk implicit in farming, mostly related to weather, which is harsher when technology or other financial and non-financial strategies are not available to face it.

Concerning the first concept, some major issues were raised: the difficulty in assessing farmers' risk is made more serious by the farm-household structure of typical producers which complicates the estimates of financial flows. However, it can be softened by peer control systems or social control. Savings mobilization, and the consequent observation of savers (potential borrowers) behavior, is also effective in this respect. Likewise, the parallel offer of business development services helps the farmer in better programming investments and setting expected results, increases awareness and allows for a better information flow. The involvement in a value-chain system is another effective mechanism, which fosters a larger and more reliable circulation of information. A clear understanding of how farmers manage their obligations and obtain financial resources is an undeniable and effective risk management tool.

Related to external (weather) risk exposure, the pros and cons of different tools offered to farmers have been analyzed, from risk-contingent credit or traditional insurance, with their problems of incentivizing optimal behavior, to index-based insurance which should overcome moral hazard but has other limits related to basis risk. Also in this view, value chain can bring in some advantages. Some main actors in the chain, in fact, can offer risk protection and, in turn, buy their protection in the international market. This relates to weather risk but can also be very effective on price risk. Linking micro and small farmers to the international distributors through the value chain may offer farmers a good shelter against price fluctuations while preserving a profitable margin on their production costs. Again, value chain finance can rely on the access that some of the final actors in the chain have on the derivative markets, not only for weather products but more generally for financial products, allowing all in the chain to handle price fluctuations and foreign exchange risks.

**5. How can academic research contribute to the improvement of agricultural value chain microfinance? On which issues should research focus?**

*The ideas just outlined in the preceding answers imply a deep and wide knowledge not only of the specific product used (for example, warehouse receipt, leasing, index-based insurance) but also about how these tools effectively contribute to the success of the chain at the different levels. Case studies are now available internationally and a growing number of applications are constantly being added. Data will then be increasingly available to be used by researchers to assess individual reasons for success, to make comparative studies, to model behaviors related to the demand and supply of goods and related financial services.*

*What can be particularly appealing is the analysis of the behaviors of micro and small producers: how did they get into the value-chain? What is their perception of the benefit? How is their economic-financial model changed after being in the chain? How is their behavior affected and affecting the effectiveness of the system?*

*It would be interesting to have an understanding of farmers outside the value chain to see how they view the potential and limitations of becoming involved versus remaining independent. These are just some examples of paths that the researchers may want to follow to better understand the potential demand of microfinance services, as it was also explained in the two presentations in the session.*

*The aim should be to contribute to better refine solutions which increase the benefit of the value chain for micro and small farmers and also to give some advice to rural development designers and policy makers.*

# What are green value chains? And what is the relationship to microfinance?

Davide Forcella

## About the author

**Davide Forcella** is researcher at CERMI and a member of the department of physics at ULB. He holds a PhD in physics from ISAS/SISSA and a complementary master in microfinance from the EMP. His research focuses on green microfinance in developing and developed countries and its role in sustainable rural development, ecosystems conservation, adaptation to climate change, access to renewable energies and energy efficiency for poor households. He also works on environmental indicators for MFIs, over-indebtedness and informal lending.

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## Abstract

*This paper provides a short introduction to green microfinance and its role in rural development. In particular, some aspects of green value chains concerning energy and agriculture are discussed and the possible role of microfinance to support the upgrading of poor households in such green value chains is analyzed. Moreover, some comments about the complexity of the human-environmental system and its interaction with green microfinance are presented.*

## Introduction

Rural poverty is a threat to fair socio-economic and environmentally friendly development. MFIs operating at the household level could have a role to play in eradicating rural poverty and supporting fair development. Indeed 75% of the world's poor live in rural areas and most of them are involved in farming (WB1; WB2, 2008). Smallholders produce the great majority of the food consumed within developing countries (IFAD-UNEP, 2013). Poor households in rural areas are affected by many deprivations, globally, 84% of the population live in rural areas with over 1.3 billion people lacking access to electricity and 2.6 billion people without clean cooking facilities (IEA, 2011); poor people in developing countries are also the most exposed to climate change (IPCC, 2013; IPCC 2014); they are also vulnerable to market volatility; the cost of many goods (included energy (Groh, 2014)) are higher for poor rural populations with respect to wealthier and urban populations, moreover they are more vulnerable to energy and food price volatility.

## Why should MFIs consider the environment?

Microfinance has now become a mature sector providing services to hundreds of millions of households. MFIs finance many informal activities that are poorly regulated, implemented using old inefficient practices and technologies, and hence damaging for the local environment. Moreover, poor people are among the most vulnerable to environmental degradation and weather shocks that increase the credit risk for MFIs and the risk of poverty traps for clients. Like any other industry microfinance should then consider its environmental responsibility. It could moreover have some comparative advantages to foster,

environmentally friendly initiatives due to its close relationship with clients. Emerging green commodities markets could be an opportunity for some MFIs to improve their reputation, access to funding and provide higher incomes for clients that could then link with better market conditions. However lack of human and financial capital and the low environmental awareness of clients and staff could undermine such possibility. Some other intrinsic issues to overcome could be: the potential trade-off between short term conditions for microfinance products and the need for long term vision for environmental conservation; the necessity to articulate various strategies with actors for environmental conservation compared to recent incentives for financial specialization; and the difficulties for microfinance to access the rural and in particular the agricultural sectors. However, various actors are already engaged in what is called: Green Microfinance.

## Green Microfinance?

Green Microfinance is a young, but developing sector that is attracting growing interest from various actors: MFIs themselves, networks, investors, academics, social audits, rating agencies etc. that have been implementing and discussing environmentally friendly initiatives (Munoz and Christen, 2004; GreenMicrofinance, 2007; Van Elteren, 2007; Hall et al., 2008; Schuite and Pater, 2008; Rippey, 2009; Allet, 2012; Allet, 2013; Allet and Hudon, 2013; Forcella, 2013c; MF Rating, 2013; Forcella and Hudon, 2014). Working from existing experiences and tools, the Green Index subgroup of the e-MFP microfinance and environment action group has classified green microfinance practices according to three main dimensions (Green Index e-MFP, forthcoming): formalized environmental strategy (definition and implementation), environmental risk management (internal: concerning the MFIs' activities, and external: concerning clients' activities), and fostering green opportunities (provision of green products and services to its clients: loans and other financial or non-financial products). Green microfinance nowadays supports or finances green technologies such as: renewable energies or energy efficiency devices; but also green practices such as agroforestry, organic farming, ecotourism, recycling, as well as strategies to adapt to climate change or extreme weather events.

### **Not only finance but also link to and support value chains**

In 2013, European Microfinance Week underscored the importance of considering green microfinance not simply as the delivery of products, but instead, in a broader way acknowledging the value chain dynamics in which clients are embedded. The two most relevant chains concerning green microfinance are: agriculture value chains in which agricultural goods are produced, transformed, transported and consumed (Miller and Jones, 2010); and energy value chains in which energy devices are produced, installed, distributed, repaired, and dismissed. The two chains are interlinked and they are both potential green value chains: agricultural value chains could be embedded into environmentally friendly practices and the green commodities market; while energy value chains could be devoted to renewable energy or energy efficient devices. The understanding of such green value chain dynamics should encourage green microfinance actors to think strategically and work in a more systemic way: strengthen weak points in the chains, and look for entry points and opportunities to upgrade and transform the activities of rural households in an environmentally friendly way. Moreover, far too often, green microfinance initiatives are undermined by weak points in the value chains, demonstrating the need for a systemic green value chain approach to improve the outcomes of green microfinance initiatives. Examples of green microfinance strategies linking to green value chains could be: productive use of clean energy (Beermann, 2014; Villela Ferreira, 2014), organic farming and agroforestry to grab better international market opportunities for green commodities (PC, 2014; Forcella, 2012; Huybrechs, 2014), reduction of environmental risks fostering for example the use of adapted seeds and the diversification of incoming generating activities (Forcella, 2013b); support of environmentally friendly practices and opportunities into existing agriculture value chains (Miller and Jones, 2010; Bastianensen and Marchetti, 2011). We could call such strategies that aim at once to upgrade poor households in their economic chains and at the same time support positive environmental outcomes green value chain microfinance. However, it is not simply a matter of credit. Green value chain microfinance should also provide optimal conditions for environmentally friendly initiatives, foster environmental awareness, and support production, distribution, and post-sale services for energy devices; develop producers of green technologies or green commodities; and support MFIs to develop their own environmental strategies and priorities (GPA). Specific green value chain microfinance programs are still in their infancy, but interesting examples already exist: Proyecto Cambio in Central America (PC, 2014) aims to foster the implementation of rural environmentally friendly practices (agroforestry, silvopasture) and link them with green market commodities thanks to a mix of credit, technical assistance, guarantees,

and payment for environmental services (Forcella, 2012); the microinsurance facility of the NGO STEC in Cambodia plays a proactive role in developing the resiliency and reducing the vulnerability of poor rural households thanks to savings and credit facilities (managed by the local community) to support diversification of income generating activities and asset building, technical assistance, rice insurance and an adapted farming calendar (Forcella 2013a, 2013b); the rural microfinance program Agroamigo in North-East Brazil was forced to develop strategies to improve the resilience of its populations due to environmental shocks (Moser, 2014; Moser et. al., forthcoming-a, b); while ASHI in Philippines provides ex-post intervention for damages wrought by typhoons according to a relief-recovery-rebuilding strategy, in some cases also considering clients' displacement (Verhaegen, 2014); Partner, an MFI in Bosnia-Herzegovina, developed a program with USAID consisting of credits, grants and technical assistance for micro-enterprises to build solar collectors plus credits for clients to buy renewable energy devices, plus awareness raising for the population in support of the development of a market for solar energy (Forcella, 2013c). Some other examples of renewable energy and energy efficiency value chain finance could be found in the Products Catalogue developed by the e-MFP microfinance and environment action group (Product Catalogue e-MFP, forthcoming). It is important to underline that green value chain microfinance programs usually require partnerships among different organizations and hence a finance plus approach that should address at least part of the complexity of the socio-economic and environmental relations of poor rural households.

### **Not only a question of chains**

Green value chain microfinance is reasonably promising; however, it is important to consider that value chains do not stand alone but instead interact with each other and are embedded in cultural, institutional, environmental and local power relations that constitute a complex human-environmental system (Vatn, 2005; Norgaard, 2010; Ambrosio-Albalà and Bastiaensen, 2010; Van Hecken, 2011; Huybrechs, 2012; Forcella, 2012; Huybrechs et. al., forthcoming) with emerging properties and strong feedback mechanisms. Programs based on the rationality of single economic actors are therefore usually not effective in such environments, and sometimes they can also foster or support side effects (Forcella, 2012). More holistic territorial and participatory strategies should be preferred (Huybrechs et. al., forthcoming). Moreover linking a poor rural household to green value chains and markets and environmental conditions does not automatically result in a socio-economic or environmental upgrading. Indeed chains provide opportunities and threats for poor rural households that way too often are linked to buyer driven chains, with concentration of income and big inequalities in bargaining power and risk distribution, and detrimental

environmental consequences (Bastiaensen and Marchetti, 2011). If green microfinance acts in an environmentally destructive and socio-economically unequal environment, without a clear proactive role and territorial strategy, it would likely indirectly support such unfair development (Forcella, 2012; Huybrechs et. al., forthcoming; Merlet et. al., forthcoming). It should then instead try to play a proactive role, linking with local actors, building partnerships at the territorial level, and socially embedding in local discursive policy patterns aiming at the fair and environmentally friendly development of poor rural households.

## Conclusions

Green microfinance has the opportunity to participate, to support and to foster environmentally friendly and fair socio-economic development at local level if it works in a systemic way through green chains in energy and agriculture. Various green microfinance initiatives have been already implemented and the interest is growing among various actors. A first understanding of green microfinance outcomes is already available. Green value chains microfinance is however at the

very beginning. The majority of green microfinance programs are in the pilot stage. It is quite difficult to influence the people behavior and various barriers are still to overcome: technology, market, better strategies to support green value chains, and to coordinate with agriculture value chains. Opportunities exist, but a careful evaluation of strategies is needed. Microfinance cannot do everything by itself, but if correctly and thoughtfully implemented, it could play an important role, in partnership with other strategies and actors, to support a less socio-economic unequal and less environmentally destructive society acting to provide services to poor rural households.

## Some questions to answer are:

- How to efficiently provide an enabling environment for green microfinance?
- How to “better upgrade” small rural producers in an environmentally friendly way?
- How to effectively foster environmentally friendly livelihood strategies and fair development?

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# Green microfinance – Lessons from Proyecto CAMBio in Nicaragua

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## Abstract

*This article presents the analysis of Proyecto CAMBio, a green microfinance project. The intention of the project was to stimulate biodiversity-friendly land-use practices through microcredits, bio-premiums and technical assistance. The preliminary results of the fieldwork do not show a straightforward positive impact of the intervention on the evolution of biodiversity-friendly land-use practices. Farmers' decision-making regarding these practices depends on a variety of factors, which are only partly addressed with the project. The interaction with the local socio-economic context, including the rules regarding accepted (environmental) practices and the dynamics between different types of producers, is a process that needs to be taken into account much more prominently. Further discussions on green microfinance would benefit from engaging more with past and ongoing debates about the social bottom line in microfinance and the challenges of engaging in natural resource management.*

## Lessons from Proyecto CAMBio in Nicaragua

In the last few years the attention paid to linkages between microfinance and the environment has increased among microfinance practitioners and researchers, as exemplified in part by the topic of this UMM Workshop. It appears that the issue of 'sustainability' –referring to a triple bottom line including social, environmental and economic pillars– is on the microfinance table. The recognition that microfinance and environmental concerns can be related in many ways, with different possible objectives and instruments, is growing (Allet, 2012b; Cranford & Mourato, 2014; Hall et al., 2008; Schuite & Pater, 2008; Wenner et al., 2004). Nevertheless, studies that analyse the impact and effectiveness of 'green microfinance' projects in practice remain scarce (Allet, 2012a; Forcella, 2012).

In this paper, I attempt to contribute to these discussions by presenting an analysis of a green microfinance project, Proyecto CAMBio (which stands for 'Central American Markets for Biodiversity'). This analysis is still work-in-progress, and the conclusions are preliminary. Nevertheless, they point to some issues that will have to be taken into account when discussing the potential and limitations of (specific types of) green

microfinance, indicating the need to focus more on the local social, economic and political context, and how a green microfinance project interacts with it.

Proyecto CAMBio is funded by GEF (Global Environment Facility), UNDP and CABEL (Central-American Bank for Economic Integration). It took place from 2009 to 2013 in five countries in Central America, and was implemented by intermediary financial institutions, partners of CABEL.<sup>11</sup> The specific case presented here refers to Proyecto CAMBio as implemented by the Fondo de Desarrollo Local (FDL) in Nicaragua.

The objective of the project was to increase biodiversity in biological corridors, by reducing financial barriers for micro, small and medium enterprises who want to produce in a more biodiversity-friendly way. The project provides credit, at preferential rates and terms, for investments in agroforestry (such as coffee and cacao) and silvopastoral practices. These credits were sometimes combined with technical assistance, and the project also offered 'bio-premiums': a payment for clients who managed to reach specific environmental goals. The environmental goals – such as e.g. the amount of trees planted as shade in a coffee plantation or pasture – were set, in mutual agreement, by the financial institution and the client. The premium amounted to 14% of the loan principal and was disbursed upon completion of the environmental condition.

The research question of the study presented here is "What effect did Proyecto CAMBio have on the biodiversity-friendly land-use decisions of its recipients, and how does this relate to the wider social and environmental dynamics in the region?" The aim is to derive some lessons for (green) microfinance more generally – although maintaining a particular focus on the kind that wishes to actively engage in natural resource management through the provision of conditional economic incentives. This study also builds forth on a previous study about Proyecto CAMBio (see Forcella, 2012), which will be referred to further in the discussion of the preliminary findings.

My fieldwork focused on the municipalities of El Cuá and La Dalia, in northern Nicaragua. This region is relevant because it houses an important natural reserve, Macizo de Peñas Blancas, part of the Meso-American biological corridor. The main agricultural

<sup>11</sup> Explaining the functioning of the project properly requires more space than available in this article. For more precise information, visit [www.proyectocambio.org](http://www.proyectocambio.org).

activity in the zone is the cultivation of coffee, although there is also high incidence of cattle raising and the production of staple crops. In the last few years the region has been increasingly characterised by strong conservation and development trade-offs, with the worldviews of conservationists, policy-makers and producers rarely being aligned. The research methodology consisted of interviewing project staff as well as project participants and other actors in the aforementioned municipalities. A survey was also carried out, aimed at obtaining information about the evolution in land-uses in the last few years, both for project participants (n=88) and other clients from FDL who did not participate in the project (n=42).

**The following list presents some key elements from the interviews and the survey:**

- Access to Proyecto CAMBio appears to be a privilege for larger, longer-term clients of FDL. As the microfinance institution (MFI) is also rewarded according to successful loans (they receive a premium of 6% of the loan), they might prefer clients that they already trust, and clients to whom higher loans can be given. Given that the environmental goals are set in mutual agreement between the MFI (or the related technical assistance provider) and the client, this might also have had an effect on the severity with which environmental conditions were set.
- The previous finding is in line with Forcella's (2012) research which has shown that a preference by the MFI for larger (cattle) farmers in terms of higher loans meant there was a trade-off between the environmental and the financial goal. It did not change the existing environmentally destructive pathway of extensive cattle farming, and it had some social implications as it further supported the existing socio-economic inequalities (Forcella, 2012). Such interactions will be further analysed in the region of El Cuá – La Dalia too.
- To look at the evolution in biodiversity, a Biodiversity Index (BI) was used to attribute values of biodiversity to different land-uses (Murgueitio et al., 2003). On the basis of this index, no (significant) difference in biodiversity evolution was found between participants and non-participants of the project. One of the main determinants of positive evolution in BI in the last years was the change of main activity. A change towards coffee had a positive effect, a change towards cattle raising had a negative effect; changes which seem to be uncorrelated with being a project participant or not.
- Most participants indicated that they already applied the promoted practice before; and that they would have made the same investments even without the award. This might demonstrate low additionality of the project, but it is difficult to draw straightforward conclusions from this information. Indeed, many other variables influence the way in which such a project can intervene with decision-making and motivation of the farmers in the territory. For instance, the project might have had

an impact in terms of supporting the concept of environmentally-friendly production in the area, which is of importance in this region of conflicting views on conservation and development; it interacts with local rules regarding accepted practices. On the other hand, the monetary support for the implementation of wide-spread practice –such as shade in coffee plantations– has been noticed by other clients, who are now also expecting such preferential loans; as do the past participants who wish to obtain the same conditions for their next loan. There are thus important dynamics and feedbacks to take into account.

One of the key reflections to make, is that such projects have, *nolens volens*, a political role through the support or transformation of a given structure/context. In this sense, there are some parallels to be seen regarding discussions about the second bottom line (e.g. regarding the multi-dimensionality of the problem, questions of trade-offs, microfinance plus,...), as well as some lessons to be taken from natural resource management (e.g. regarding motivations for environmental stewardship, collective action, leakage,...).

**Discussion after the presentation**

After the presentation of this study at the UMM Workshop, some people in the audience appreciated and recognised the problem of incentives. The analysis is indeed to be situated within the wider body of work on incentives and motivations, with the challenges of perverse incentives, the impact on the motivation of non-participants, feedback effects, etc. A discussant also pointed to the political economy perspective of the research, looking into the possible exacerbation of existing inequalities when working with a market-based incentive for environmental conservation.

Two other members of the audience asked about the role of the MFI; namely about its room to manoeuvre during the project, and whether or not they kept the project going after it was finished. The way in which MFIs can engage with green microfinance projects seems to be a recurring concern, which has indeed not been addressed sufficiently in my analysis so far. It does appear from this study that the sustainability of such programmes, when based on external and temporary funding, is questionable.

Another question was about 'how to scale this up'. One of the lessons of this analysis would rather point to the need to scale things down. It is the interaction of such interventions with the very local level that leads to some undesired or unsatisfactory results. There will always be unexpected results, but there may be a slightly higher likelihood of obtaining positive results in terms of a more inclusive and sustainable rural development if projects are kept at a level where they can be sufficiently socially informed, and where partnerships and alliances can exist with other actors in the territory (Ambrosio-Albalá & Bastiaensen, 2010; K. Hall, Cleaver, Franks, & Maganga, 2014).

### Hot topics

The following points – to which this study wants to contribute – should be high on the agenda of practitioners and academics regarding microfinance and the environment in the following years:

- When setting objectives of financial, social and environmental sustainability, special attention needs to be given to possible trade-offs and conflicting incentives. On the basis of what values are priorities set?
- When developing and implementing green microfinance projects, it is necessary to be clear about the objectives and what the underlying assumptions are in terms of theories of change.
- Problems of poverty and environmental degradation have contextual and relational causes and consequences. A key question will be: how to go beyond an isolated approach of (individually focused) financial inclusion to contribute to local sustainable and inclusive development?

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# Why do MFIs get involved in greening their portfolio?

Marion Allet

## About the author

**Marion Allet** is an Environment & Microfinance Program Officer at PAMIGA, where she supports MFIs in developing adapted financial products for energy access. Since 2009, she has been developing a specific expertise in "green microfinance" through both practitioner and academic work. Before joining PAMIGA, she worked on energy & microfinance projects with PlaNet Finance for over three years and completed a PhD in economics and management on "Microfinance and the Environmental Bottom Line."

## Abstract

*In recent years, there has been a growing interest in promoting a "green" microfinance, a microfinance that takes into account environmental issues and seeks to reduce harmful ecological impacts and foster environmentally-friendly practices. Some pioneer microfinance institutions have started to venture in this new area, by screening loan applications along environmental risk criteria, offering specific financial products for environmentally-friendly technologies or activities, or training clients on pro-environmental practices. However, environmental management is still a very new and little known area for the microfinance sector. One could then ask: how come some MFIs are starting to get involved in greening their portfolio? What makes them willing to innovate and take the risk to integrate an environmental dimension that is still perceived as something marginal in the sector?*

## Drivers for getting involved in environmental management

In a previous study<sup>12</sup> where data was collected through a quantitative survey of 160 MFIs and qualitative semi-structured interviews of 23 MFI managers, I had identified that **microfinance institutions decide to improve their green performance for different motives, such as social responsibility, competitiveness, and stakeholders' pressure**. The study revealed that MFIs for which pressure from investors and donors is the dominant driver tend to adopt a defensive approach and set up more superficial negative strategies to appear green (such as very general exclusion lists). In contrast, **MFIs for which social responsibility is the dominant driver tend to be more proactive and innovative** and develop adapted financial and non-financial services to promote environmentally-friendly practices (such as green microcredit or training services).

## Insights from PAMIGA's field experience

Our field experience within PAMIGA<sup>13</sup> also brings additional insights to understand what leads MFIs to get pro-actively involved in environmental management. Since 2013, PAMIGA has been implementing a program to facilitate access to solar solutions through microfinance for poor populations in rural areas. The program has been piloted in 3 countries (Cameroon,

Tanzania and Ethiopia), with 6 MFIs that voluntarily decided to be part of the program. Why did these institutions decide to get involved?

## Responding to clients' needs

When asking the managers of these institutions why they decided to develop a new product to facilitate access to clean energy, their first answer always is: **to respond to clients' needs**. These MFIs are indeed active in rural areas, where 80 to 95% of their clients are not connected to the national power grid and have a very limited access to energy. These clients use kerosene lamps, candles and torches for lighting, which are costly and can present clear health risks and hazards (e.g. risk of burns, fires, or intoxication from kerosene lamps). Most of them own mobile phones but have to go to the nearby town or pay the services of someone with a diesel-powered generator to charge them. For lack of access to energy, the use of other electrical appliances is very limited. Today, there are technical solutions that can improve access to energy, but poor rural populations usually lack information and financial solutions to invest in these renewable energy technologies. The six pilot MFIs were aware that some basic needs were still unmet and that they could play a role to respond to them. In that case, the development of green microcredit followed a bottom-up approach, **responding to "pressure" from the stakeholders that are at the heart of MFIs' focus: the clients**.

## Fulfilling a social mission

Furthermore, the six involved MFIs all emphasize that this **strategy is fully in line with their social mission**. By offering green microcredit for access to energy, they expect to help clients reduce their energy expenditures, reduce their exposure to health risks and hazards linked to the use of fossil fuels, improve their living conditions, and even develop their businesses, while preserving the environment.

They also identify **some strategic benefits for their institution**, such as diversifying their products and portfolio, attracting new clients, retaining existing clients, differentiating from competitors, or building a reputation as a responsible institution to attract new investors. However, they are **not yet fully convinced that there is a profitable business model** for them in

12 Allet, M. (2014) "Why do microfinance institutions go green?" Journal of Business Ethics, 122: 405-424.

13 PAMIGA is a network of 15 Sub-Saharan African microfinance institutions active in rural areas – [www.pamiga.org](http://www.pamiga.org).

offering green microcredit. Even if financial projections done with the support of PAMIGA have shown that the solar energy loans could be profitable for the MFIs after reaching a certain volume, top managers are still doubtful about the profitability of this new financial product. It may be explained by the **lack of successful business cases** in this area so far, most initiatives remaining at the pilot level and **having difficulties to scale up**.

#### ***Having access to expertise and technical support***

Finally, these pioneer MFIs acknowledge that **access to expertise and technical support is crucial**. To successfully develop solar energy loans, MFIs would have to identify adapted technical solutions to promote, set up partnerships with reliable distributors of solar solutions, design adapted financial products, develop an efficient marketing strategy, build internal capacities to promote and manage the new product, mobilize funding to finance the portfolio, educate clients on the technical solutions, etc. This all requires new knowledge and skills for institutions not familiar with energy issues (the same would hold for any other environmental issue). Having access to some technical support from solar energy and energy lending experts was thus instrumental in **making a general interest become a concrete initiative**.

#### ***Realizing how environmental issues are embedded in our daily lives...***

Feedback from PAMIGA's partners emphasizes an interesting perspective: **MFIs decide to green their portfolio when they realize how embedded environmental issues** (such as energy management) **are in the daily lives of their clients** (impact on revenues, health, education, business development, etc.), **how critical environmental management is to achieve social and economic goals**. In our experience, some MFIs may sometimes go green without even realizing it, seeking to address important social and economic concerns with solutions that also turn out to be environmentally friendly.

In the microfinance sector, there is still a lot of skepticism around the idea of "greening" MFIs. However, our conviction is that for MFIs, managing environmental performance is rather an opportunity to achieve major economic and social objectives in a holistic and sustainable way.

## Closing Remarks

Davide Castellani

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*The 11th UMM Workshop explored the role that agricultural and green microfinance can play in the frame of a value chain system. The workshop began with the fundamentals of understanding value chains and how the value chain approach can improve financial inclusion in rural areas and identifying the key actors and the main opportunities and challenges for MFIs. Sessions then further delved into product development, approaches to value chain financing, the role of investors, creating partnerships to benefit micro-entrepreneurs and smallholder farmers, the role of microfinance in meeting green energy demand and risk management.*

### **Agricultural Value Chain Microfinance**

When markets are competitive, smallholder farmers are able to gain more stable and greater revenues by becoming active participants in value chain that offers them access to actors and support services. At the same time, the interlinked contracts improve the credit standing of the farmers and facilitate the access to credit from financial institutions. Several authors indeed hint that costs and, in particular, risk made traditional financial institutions as well as most MFIs reluctant to offer financial services to smallholder farmers. More recently, as the urban market has become saturated, MFIs have started to expand into rural areas and offer services, with less impetus, to smallholder farmers characterized by small, cyclical and uncertain agricultural incomes. Daniela Röttger and Ron Bevacqua point to the development of holistic lending approaches that consider the characteristics of smallholder agriculture. Risk assessment, repayment and monitoring should be based on all the income sources and cash flows of the households. Besides, to further reduce costs and mitigate risks, MFIs need to be supported in different ways (with technical assistance, capitalization, funding and risk transfer mechanisms) as argued by Ron Weber. It also implies assistance to the producers' organizations that, according to Michaël De Groot and August R. Sjauw-Koen-Fa, are key actors for the access of the farmers to the value chain and to financial services. New technologies and innovations can further help MFIs to reduce costs and risks. For instance, Susann Seifert and Heino Kantimm describe how ICT applied in an agricultural value chain system can support the empowerment of smallholders and foster their financial inclusion.

### **Green Value Chain Microfinance**

Green agricultural practices, safe and reliable energy access and the mitigation of environmental impacts can be important determinants of smallholder farmers' revenues, as well as microentrepreneurs or poor households. Green microfinance entails processes and products that consider the clients' capacity to mitigate and adapt to environmental hazards. According to the different contributions, the debate often focuses on the business case for green microfinance. Bernd Balkenhol argues that green energy devices for agriculture (or for small and micro enterprises) can be successfully financed by MFIs as the cash flows are predictable and the device can be collateralized. According to PAMIGA's experience with solar solutions, access to expertise and

technical support for MFIs is however crucial. On the other hand, financing green agricultural practices or diversification strategies might require some economic incentives to both the microfinance institutions and the borrowers. Davide Forcella and Frédéric Huybrechs offer examples where donor- or government-led initiatives ended up favoring the better-off clients and led to modest impact. This suggests that the incentive mechanism is key to the success of these kinds of programs. However, nudge effects can disappear when incentives are short term. Long term sustainability can be fostered by promoting social responsibility within MFIs and establishing formal management systems that embed this attitude in their standard operations. Social responsibility is indeed the best driver of MFIs that decide to go green, as Marion Allet found in a study of 160 MFIs.

### **In conclusion**

Between the discussions about agricultural and green value chains, a consensus has emerged during the workshop and through the contributions in this publication highlighting the importance of understanding the roles and needs of the various actors along the value chains in order to deliver appropriate products, manage and mitigate risk, reduce costs and develop partnerships to enable growth and reach clients in the remotest rural areas.

### **Acknowledgements**

We would like to express our special gratitude to the Frankfurt School of Finance & Management and International Advisory Services for their cooperation and for hosting the 11th UMM Workshop. A special thank you as well to MicroEnergy International and the e-MFP "Microfinance & Environment" Action Group that helped organize this workshop.

We also would like to extend a special thanks to the funders of University Meets Microfinance. Without their support the organization of the workshop and the publication of this thematic paper would not have been possible: Thank you to the European Microfinance Platform (e-MFP), European Union, the GIZ on behalf of the BMZ, the Agence Française de Développement, the European Investment Bank Institute, Freie Universität Berlin, the Frankfurt School of Finance and Management and Capgemini (Italy country partner). Finally, the success of UMM events and activities would not be possible without the support of the e-MFP "University Meets Microfinance" Action Group members.

We thank the over 80 participants who attended the workshop from 10 leading European universities and practitioners from more than 20 organizations including microfinance institutions, impact investors, sustainable energy providers and more. The workshop speakers came from all over the globe: from Myanmar to New York and from Bosnia to Germany.

We look forward to seeing you at the upcoming University Meets Microfinance Workshops.

Sincerely,  
Davide Castellani

## Annex I: Workshop Program



11<sup>th</sup> University Meets Microfinance (UMM) - Workshop  
of the e-MFP Action Groups  
“University Meets Microfinance” and “Microfinance & Environment”

### Value Chains in Agricultural and Green Microfinance

Frankfurt School of Finance & Management  
3rd & 4th July 2014

Thursday, July 3<sup>rd</sup> 2014

Time	Programme	Room
10:00 – 10:30 am	Registration	Entrance Foyer
10:30 – 12:15 pm	<p><b>Opening and Welcome</b>  <i>Fatma Dirkes</i>, Frankfurt School of Finance &amp; Management  <i>Adrien Champey</i>, PlaNet Finance</p> <p><b>Presentation: Introduction into the topic: Agricultural value chain financing: What role for microfinance institutions?</b></p> <ul style="list-style-type: none"> <li><i>Norah Becerra</i>, Frankfurt School of Finance &amp; Management</li> </ul> <p><b>Presentation: Introduction into the topic: What are green value chains? And what is the relationship to microfinance?</b></p> <ul style="list-style-type: none"> <li><i>Davide Forcella</i>, Université Libre de Bruxelles/CERMI</li> </ul> <p><b>Plenary Discussion</b>  <i>Norah Becerra</i>, International Advisory Services, <i>Davide Forcella</i>, Université Libre de Bruxelles/CERMI</p> <ul style="list-style-type: none"> <li>Moderator: <i>Alicia Rondón-Krummheuer</i>, Frankfurt School/UNEP Center</li> </ul>	Room 3
12:15 – 1:30 pm	Lunch	Mensa
1:30 – 4:30 pm	<b>Rotating Group Presentations</b>	
1:30 – 3:00 pm	<p><b>Group A – Financing agricultural value chains with microfinance services</b></p> <ul style="list-style-type: none"> <li><b>Input Presentations</b> <ul style="list-style-type: none"> <li><i>Ron Bevacqua</i>, PlaNet Finance</li> <li><i>Jerry Kwo</i>, Oikocredit</li> </ul> </li> <li><b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>Moderator: <i>Vanessa Quintero</i>, University Meets Microfinance</li> </ul> </li> </ul>	Room 20



	<p><b>Group B – The role of investors in agricultural value chain microfinance</b></p> <ul style="list-style-type: none"> <li>• <b>Input Presentations</b> <ul style="list-style-type: none"> <li>○ <i>Dominique Lesaffre</i>, SIDI</li> <li>○ <i>Jürgen Hammer</i>, Grameen Credit Agricole Foundation</li> </ul> </li> <li>• <b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>○ Moderator: <i>Michaël de Groot</i>, Rabobank Foundation</li> </ul> </li> </ul>	<i>Room 3</i>
3:00 – 4:30 pm	<p><b>Group C – Green energy tech and access to finance along the value chain</b></p> <ul style="list-style-type: none"> <li>• <b>Input Presentations</b> <ul style="list-style-type: none"> <li>○ <i>Noara Kebir</i>, MicroEnergy International</li> <li>○ <i>Ellen Morris</i>, Columbia University/Embark Energy</li> </ul> </li> <li>• <b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>○ Moderator: <i>Sven Volland</i>, Mobisol</li> </ul> </li> </ul>	<i>Room 5</i>
	<p><b>Group D – Agricultural value chains, energy needs, and the role of microfinance</b></p> <ul style="list-style-type: none"> <li>• <b>Input Presentations</b> <ul style="list-style-type: none"> <li>○ <i>Diana Cazacu &amp; Theophile Djedjebi</i>, Advisionfinance</li> <li>○ <i>Bernd Balkenhol</i>, University of Geneva</li> </ul> </li> <li>• <b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>○ Moderator: <i>Marion Allet</i>, Pamiga</li> </ul> </li> </ul>	<i>Room 7</i>
4:30 – 5:00 pm	Coffee break	<i>Room 20 foyer</i>
5:00 – 6:30 pm	<p><b>Presentation of students' research</b></p> <p><b>Group A – Value chains in agricultural microfinance</b></p> <ul style="list-style-type: none"> <li>• Presentation by <i>Daniela Rottger</i>, University of Duisburg-Essen/ DEG Invest <ul style="list-style-type: none"> <li>○ Comment by <i>Davide Castellani</i>, Università degli studi di Bergamo</li> </ul> </li> <li>• Presentation by <i>Gustavo Prepelitchi</i> (Universität Freiburg (fmr), ILO Consultant) <ul style="list-style-type: none"> <li>○ Comment by <i>Solène Morvant</i>, Université de Fribourg Suisse</li> </ul> </li> <li>• <b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>○ Moderator: <i>Susann Seifert</i>, PlaNet Finance Germany</li> </ul> </li> </ul>	<i>Room 5</i>
	<p><b>Group B – Value chains in green microfinance</b></p> <ul style="list-style-type: none"> <li>• Presentation by <i>Flávia Villela Ferreira</i>, Humboldt University of Berlin <ul style="list-style-type: none"> <li>○ Comment by <i>Davide Forcella</i>, Université Libre de Bruxelles/CERMI</li> </ul> </li> <li>• Presentation by <i>Frédéric Huybrechs</i>, Univeristy of Antwerp <ul style="list-style-type: none"> <li>○ Comment by <i>Bernd Balkenhol</i>, University of Geneva</li> </ul> </li> <li>• <b>Discussion with the audience</b> <ul style="list-style-type: none"> <li>○ Moderator: <i>Gersom Aliaga</i>, MicroEnergy International</li> </ul> </li> </ul>	<i>Room 3</i>
6:30 pm	Cocktail	<i>Room 20 foyer</i>

## Friday, July 4<sup>th</sup> 2014 – Expert Workshop

10:00 – 10:30 am	Registration	<i>Entrance Foyer</i>
10:30 – 10:50 am	<b>Introduction</b> <i>Azalea Carisch, University Meets Microfinance</i>	<i>Audimax</i>
10:50 – 12:30 pm	<b>Expert Roundtable Session 1</b>	
	<b>Group A – Financial services for agricultural value chains</b>	<i>Room NB04</i>
	<ul style="list-style-type: none"> <li>• <b>Expert Contributors</b> <ul style="list-style-type: none"> <li>○ <i>Ron Weber, KfW Development Bank</i></li> <li>○ <i>Solène Morvant, Université de Fribourg Suisse</i></li> </ul> </li> <li>• Moderator: <i>Laura Viganò, Università degli studi di Bergamo</i></li> </ul>	
	<b>Group B – Green energy initiatives and the role of microfinance</b>	<i>Room NB05</i>
	<ul style="list-style-type: none"> <li>• <b>Expert Contributors</b> <ul style="list-style-type: none"> <li>○ <i>Ellen Morris, Columbia University/Embark Energy</i></li> <li>○ <i>Alicia Rondón-Krummheuer, Frankfurt School/UNEP</i></li> </ul> </li> <li>• Moderator: <i>Sven Volland, Mobisol</i></li> </ul>	
12:30 – 1:30 pm	Lunch ( <b>Poster Presentations</b> )	<i>In front of Audimax</i>
1:30 – 3:00 pm	<b>Expert Presentation Session</b>	
	<b>Group A – Value chains in agricultural microfinance</b>	<i>Room NB04</i>
	<ul style="list-style-type: none"> <li>• <b>Expert Contributors</b> <ul style="list-style-type: none"> <li>○ <i>Chirantan Banerjee, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH</i></li> <li>○ <i>Heino Kantimm, SAP</i></li> </ul> </li> <li>• Moderator: <i>Ron Bevacqua, PlaNet Finance</i></li> </ul>	
	<b>Group B – Green performance in microfinance</b>	<i>Room NB05</i>
	<ul style="list-style-type: none"> <li>• <b>Expert Contributors</b> <ul style="list-style-type: none"> <li>○ <i>Marion Allet, Pamiga</i></li> <li>○ <i>Geert Jan Schuite, Enclude/HIVOS</i></li> </ul> </li> <li>• Moderator: <i>Raluca Dumitrescu, MicroEnergy International</i></li> </ul>	
3:00 – 3:45 pm	Coffee Break ( <b>Poster Presentations</b> )	<i>In front of Audimax</i>

3:45 – 5:15 pm

## Expert Roundtable Session 2

### Group A – Empowering agricultural value chains

Room NB04

- **Expert Contributors**
  - *Michaël de Groot*, Rabobank Foundation
  - *Jay Supetran*, PlaNet Finance Myanmar
- Moderator: *Susann Seifert*, PlaNet Finance Germany

### Group B – Energy efficient initiatives in microfinance

Room NB05

- **Expert Contributors**
  - *Annika Tillmans*, Small Solutions
  - *Lejla Huskic*, LOK Microcredit Foundation
- Moderator: *Gersom Aliaga*, MicroEnergy International

5:15 – 5:45 pm

## Lessons Learnt & Hot Topics – Panel Discussion

Audimax

Moderators from the mixed workshop sessions (*Ron Bevacqua, Raluca Dumitrescu, Gersom Aliaga, Sven Volland, Laura Viganò, Susann Seifert*)

- **Discussion with the audience**
  - Moderator: *Habib El Magrissy*, University Meets Microfinance

5:45 – 6:00 pm

## Closing Remarks

Audimax

Silke Mueffelmann, Frankfurt School of Finance & Management

## Annex II : List of Participants

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Albert, Joscha; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)  
Allet, Marion; Pamiga  
Balkenhol, Bernd; University of Geneva  
Banarjee, Chirantan; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)  
Becerra, Norah; International Advisory Services/ FS  
Becher, Lisa; Frankfurt School of Finance and Management  
Behrens, Reemt; KfW Development Bank  
Bevacqua, Ron; PlaNet Finance Myanmar  
Brandt, Ann-Sophie; University of Duisburg-Essen/Deutsche Investitions und Entwicklungsgesellschaft (DEG)  
Buisson, Florent; Université Paris 1 Sorbonne  
Čaušević-Esko, Almedina; Micorcredit Foundation LOK  
Cazacu, Diana; Advisionfinance  
Crawford, Andrew; Monash University  
Crayne, Michael; Frankfurt School of Finance and Management  
De Groot, Michaël; Rabobank Foundation  
Dekhtiarova, Oksana; Univeristy of Flensburg & Frankfurt School of Finance and Management  
Dirkes, Fatma; Frankfurt School of Finance and Management  
Djedjebi, Theophile; Advision  
Dumitrescu, Raluca; MicroEnergy International  
Erhard, Simon; KfW Development Bank  
Erica Garcia, Gabriela; European Microfinance Platform, e-MFP  
Esmail, Ayham; Philipps-University Marburg, Germany  
Ferreira, Flavia; Technical University of Berlin  
Ferrufino, Gersom Aliaga; MicroEnergy International  
Forcella, Davide; ULB, CERMi  
Fрати, Eleonora; Philipps University Marburg  
Gabaglio, Cosma; University of Zurich  
Gitti, Giulia; Bocconi University  
Hammer, Jurgen; Grameen Credit Agricole  
Hansen, David; University of Mainz  
Hartenstein, Stephan; NomoRisk GmbH  
Hartung, Michael; Johannes Gutenberg Universität Mainz  
Haug, Ulrike; Oikocredit Deutschland  
Hoffman, Luisa; Goethe Universität Frankfurt  
Huskic, Lejla; Micorcredit Foundation LOK  
Huybrechs, Frédéric; University of Antwerp  
Jeschke, Katharina; World Vision  
Kantimm, Heino; SAP  
Kebir, Noara; MicroEnergy International  
Kohlschütter, Janec; Universität Bayreuth, Germany  
Kugler, Christine; FS-UNEP Centre  
Kulovac, Dzenita; Micorcredit Foundation LOK  
Kwo, Jerry; Oikocredit  
Laufer, Hanna; Philipps University Marburg  
Laura, Druce; Frankfurt School of Finance and Management  
Lesaffre, Dominique; SIDI  
Liang, Zeng; Frankfurt School of Finance and Management  
Lightbody, Laura; LFS Financial Systems

Loder, Irene; Frankfurt School of Finance and Management  
Lopez, Lorena; Frankfurt School of Finance and Management  
Mauricio, Olmos; Frankfurt School of Finance and Management  
Menaguale, Eugenia; Università L. Bocconi  
Morris, Ellen; Columbia University  
Morvant-Roux, Solène; Université Fribourg Suisse  
Müffelmann, Silke; Frankfurt School of Finance & Management  
Negro, Maria Cristina ; Fondazione Giordano Dell'Amore  
Nestingou, Jacob Ok; Finance in Motion  
Neu, Friedrich; Goethe University Frankfurt/Main  
Osunremi, Olukayode; Prime Asset Housing Cooperative /Federal University of Agriculture Abeokuta  
Palomares, Carla; ADA  
Paysen, Julien  
Peshkova, Marina; Frankfurt School of Finance & Management  
Prepelitchi, Gustavo; Independent Consultant  
Rakhimov, Otabek; Project Management & Consulting  
Rassl, Martin; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)  
Reichert, Patrick; CERMI - Université libre de Bruxelles  
Richter, Maren; Consultant  
Rios, Alejandra; Women's World Banking  
Risterucci, Fabien; FR Prospektiv  
Rondón-Krummheuer, Alicia; UNEP/FS  
Röttger, Daniela; University of Bochum / DEG Invest  
Scholz, Ada; GFA Consulting Group GmbH  
Schueller, Martin; Simon Fraser University  
Schuite, Geert Jan; Enclude  
Schuller, Miriam; World Vision Germany  
Seifert, Susann; PlaNet Finance Germany  
Striegel, Simon; University of Duisburg-Essen/Deutsche Investitions und Entwicklungsgesellschaft (DEG)  
Supetran, Jay; PlaNet Finance Myanmar  
Tillmans, Annika; Small Solutions  
Vanzini, Luca; Frankfurt School of Finance and Management  
Viganò, Laura; Università di Bergamo  
Volland, Sven; Mobisol  
Weber, Ron; KfW  
Welsch, Jan; University of Mainz  
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