



# Enhancing Food Security and Resilience to Climate Change: What Role for Microfinance?



## UMM Thematic Paper

by the e-MFP University Meets Microfinance Action Group

12<sup>th</sup> University Meets Microfinance Workshop  
University of Bergamo

June 11<sup>th</sup> & 12<sup>th</sup> 2015

## ABOUT UNIVERSITY MEETS MICROFINANCE

University Meets Microfinance (UMM) is a European initiative implemented by Positive Planet, the new name of PlaNet Finance. Positive Planet, is an international non-profit organization with a mission to create a better world for future generations, by giving the poorest populations access to financial services, as well as to key essential services.

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 Positive Planet 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.

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[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 12<sup>th</sup> University Meets Microfinance workshop on "Enhancing Food Security and Resilience to Climate Change: What Role for Microfinance?" took place at the University of Bergamo on June 11<sup>th</sup> & 12<sup>th</sup>, 2015. This Workshop was organized in close cooperation with the University of Bergamo.



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## Foreword from Positive Planet and the University of Bergamo

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Climate-induced risks have negative consequences on the livelihoods of smallholders and rural households in developing countries. Over the last decades, both the frequency and intensity of natural disasters have been increasing. In the context of microfinance, these risks pose several operational challenges threatening the sustainability and outreach of Microfinance Institutions (MFIs). The 12th University Meets Microfinance Workshop on "Enhancing Food Security and Resilience to Climate Change: What Role for Microfinance?", brought together practitioners and academics who have been working on innovative microfinance approaches that foster the ability of the poor to reduce and mitigate the impact of extreme weather events.

The presentations of different experiences and cutting edge research, as well as the fruitful debates, allowed the participants to gain critical knowledge and increase insights about the advantages of new microfinance instruments and processes aimed at tackling climate-related risks. The products and processes presented during the workshop offer to both MFIs and clients further opportunities to smooth the effects of weather-related shocks over time or to transfer risk out of their fragile environments. For example, risk transfer mechanisms, such as index-based insurance, if properly designed, can provide risk-transfer benefits not only to the clients but also to the MFIs. The leveraging effect can indeed enhance the capacity of MFIs to lend and mobilize savings. However, innovation requires acceptance by the clients and, in order to be successful, the microfinance sector needs first to understand the demand-side's preferences and constraints.

The UMM workshop also contributed to identifying the role that the poor can play in the struggle against climate change through the support of microfinance services. Even though the workshop was mostly concerned with adaptation to climate change, mitigation strategies are also key to effective risk management. Adding this dimension entails moving from a macro approach to a micro approach. Proyecto CAMBio in Central America, Agrimigo in Brazil and the Microinsurance Facility for Climate Change Adaptation by Save The Earth Cambodia are just a few examples of initiatives that follow the micro approach.

Tackling climate change at the micro level and, at the same time, increasing food security is a challenging job because resilience entails multifaceted components. A combination of financial and non-financial services can then be the best approach. The evidence of the R4 Rural Resilience Initiative, that is a joint initiative of Oxfam International and the World Food Program, in Ethiopia and Senegal, shows how a holistic approach through a set of integrated tools (insurance, credit, savings and disaster risk reduction) can be more successful than approaches focused on just one or two areas of the risk. In this regard, for example,

bundling weather insurance with credit can provide several benefits to the institution (such as increasing the loan portfolio and lowering credit risk at the same time, as well as discouraging the drop-out of clients) and to clients (a lower exposure to risk might favor the adoption of new technologies).

The conclusions of this year's UMM workshop hint that the microfinance sector is very concerned about the consequences of climate risk and climate change. There is then a mutual necessity to continue on this innovation path and draw common lessons from the different experiences. In this view, the financial and technical support of donors and governments is then extremely important, and public-private partnerships become often a crucial element for the implementation of these initiatives which foster the promotional and financial support of the microfinance sector.

Aligned to this, within the broader context of food security initiatives, a special session of this year's UMM workshop stemmed from the 2015 International Exhibition (EXPO) in Milan. In fact, the EXPO's topic "Feeding the Planet, Energy for Life" was at the basis of a critical reflection about the role of finance in fair trade, food chains and social business.

The UMM team is grateful for the copious and active participation of academics, practitioners and students, that are the main actors and beneficiaries of the UMM program. The University of Bergamo is proud of having hosted such an enriching event with promising outcomes and will continue to contribute to the international debate also through its participation in the UMM program.

This publication consists of a collection of articles authored by the presenters of the workshop. It offers the readers a description of different microfinance projects and programmes that contribute to food security and resilience to climate change. The articles also present the main constraints and problems encountered in the design and implementation process as well as the main issues and questions that still need to be addressed.

Davide Castellani, University Meets Microfinance/  
Positive Planet and Laura Viganò, University of  
Bergamo





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## Introduction - Article Summaries

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### *Microfinance and Climate Change in Bangladesh*

**Adrian Fenton** investigates the relationship between microfinance and climate change in Bangladesh by looking at how microfinance affects climate change adaptation at the household level and the vulnerability of MFIs to climate change. He finds that livelihoods have been dramatically affected by waterlogging. As a result most households can only produce subsistence rice crops, having lost the ability to cultivate cash crops - their main source of investment capital. Livestock, poultry, and fish production have been damaged; and many household trees providing food, fodder, fuel, and material have died. Most homesteads have been destroyed. Microcredit is typically used as a coping mechanism during the waterlogging season, with 25% of all loans used for consumption purposes, but large amounts of microcredit providers frustrates efforts to control overlapping.

### *Community Inventory Credit or 'Warrantage': a Tool Against Food Insecurity*

**Matteo Pietro Cortese** describes how community inventory credit, also called warrantage, allows smallholder farmers to access credit at harvest time, using part of their crop as collateral: they are thereby able to better manage their harvest and improve their cash flow. He presents two case studies from Niger and Burkina Faso. He concludes that warrantage can be one solution but not the only one. When the right conditions are in place (such as reliability of farmer organizations and, above all, confidence is in place between MFIs and farmer organizations), pre-financing warrantage (like Kokari with some farmers' organizations in Niger and Coris Bank with COPSA-C in Burkina) might be a partial solution to the double lock inflexibility. There is still huge space for further research by practitioners and academics.

### *Microfinance, Ecosystems Conservation and Adaptation to Climate Change*

**Davide Forcella** explores three main aspects of green microfinance: 1) Ecosystems conservation: he illustrates Proyecto CAMBio, a project spanning seven years in Central America, composed of credit, technical assistance, payment for environmental services and partial guarantee, to promote agroforestry and silvopasture, and the conservation of biodiversity; 2) Climate change vulnerability: he discusses Agroamigo, the largest rural microfinance programme in Brazil, operating in the North-East of the country: the poorest region in Brazil and among the most affected by climate change; 3) Adaptation to climate change: he describes the Microinsurance Facility for Climate Change Adaptation by Save The Earth Cambodia, which is a targeted small-scale program of savings, credit, technical assistance and in-kind insurance, to increase the resilience of rural populations. These three examples point out that microfinance could

be an important tool to support food security, rural development and climate change adaptation, but at the same time he argues that microfinance alone, without well designed strategies to redirect dominant development pathways toward environmentally friendly and socially inclusive rural development, is not effective enough to build resilience and conserve ecosystems.

### *A Multidimensional Approach in Response to Major Climate Change Threats: the Case of the LIFE FUND in the Philippines*

**Davide Libralesso** illustrates the Life Fund initiative implemented by Etimos Foundation in the Philippines. The initiative aims to restore the livelihoods and support the recovery of the micro-enterprises in the communities most affected by typhoon Haiyan. The Life Fund consists of different components: the capitalization of locally affected MFIs; a rotating fund to grant loans to restore the operational capacity of the MFIs; technical assistance to strengthen the capacity of the MFIs; training for the final beneficiaries (business development, risk reduction management, micro-insurance); and community socio-economic development projects. Besides, an integrated and customized social performance and social impact assessment tool has been designed to measure the impact of the overall structure over the short and the long term among the institutions and the final beneficiaries.

### *Innovative Technology for Weather Index Insurance Solutions in Order to Enhance Resilience to Climate Change*

**Diana Urbani** presents the activities of CelsiusPro, a Swiss based weather index and parametric natural catastrophe insurance service provider. Through their platform, CelsiusPro provides a back-end information management system that is designed to complement insurers' front-end product distribution and management systems. In addition to the insurance software CelsiusPro offers solutions for visualisation and analysis of climate data. Overall, these tools allow to efficiently access and manage big data from all over the world. CelsiusPro was also awarded the role of technical assistance facility manager for KfW's Climate Insurance Fund (CIF). The fund's objective is to facilitate adaptation to climate change by improving access to and the use of climate insurance solutions for micro, small and medium enterprises as well as low-income households.

### *Do not Forget the Big Picture! The Upcoming Planetary Feedback Loop and the Role of "Micro"*

**Grammenos Mastrojeni** discusses the main effects at the micro level of climate change and how local communities can mitigate and adapt to those

consequences. He argues that a broad political and financial effort is necessary and urgent, but it will be fruitless if it is not turned into concrete actions and applied in the day-to-day interaction of individuals, families and local communities with their own environment. Marginal gains in efficiency, crucial in order to contain emissions and adapt to unavoidable changes, are higher – given a fixed amount of investment – in communities that do not benefit from modern and efficient infrastructure and technologies, i.e. in developing countries: local communities and their concrete relationship to real territories are indeed the most natural contexts and targets of micro-finance tools.

#### ***The Use of Cash Transfers in Enhancing Food Security and Resilience in the Sahel: The Case of Niger***

**Nourou Macki Tall** presents FAO's project in Niger with the aim to enhance food security by supporting asset building and income diversification. The project consists of two activities: cash for work activities during the pre-lean season period and unconditional cash transfers during the planting period coupled with the distribution of improved short cycle variety seeds for food production. The local MFIs facilitated the transfer of cash to the intended population. The project was successful as the cash for work was very relevant to support natural resource management and climate change adaptation activities such as dune fixation, land restoration, replanting and so on. Besides, the cash transfers responded to the immediate food needs, mitigating the shortage of farm labour and supporting socio-economic investments; in addition, the seeds increased food production.

#### ***Take-up of Weather Microinsurance: Theory and Insights from East Africa and France***

**Yann Gelister** discusses the main drivers of the take-up of weather microfinance by relying on the lessons learned from three different programs: two in Africa and one in France. Also following the insights from the academic literature, the three programs confirmed the importance of products and processes being aligned with farmer needs, as well as the ease of transaction. It also emerged that recency bias is an important determinant of demand. Not mentioned in the theoretical analysis that was researched was the issue of whether an agri-insurance product should be bundled with other products directly sought after by a farmer, including credit and/or contracting farming products such as fertiliser or inputs. Indeed, these products drive up the purchase of insurance, especially when it is sold as a bundled product. Finally, farmer education in France was key in making farmers aware enough of the value of insurance, so much so that it was the farming community alongside the Memorandum of Understanding that made a direct request for insurance solutions, index-based or other,

to be developed.

#### ***The Role of Collective Action in Shaping Value Chain Governance: Lessons from Farmers' Collaboration in Chad***

**Stefano Corsi** and **Luigi Orsi** illustrate the results of a survey conducted in 2005 on a sample of 40 Chadian farmers. The survey was meant to understand which drivers, mediated by the role of collective action, might boost smallholder market performance. The study demonstrates the fundamental role of collective action in strengthening the performance of the Chadian farmers, but it also highlights that there is still a gap to be filled between the collective action possibilities and the farmers' needs in shaping a well-structured value chain. The study is part of the EU Project "Peanut and sesame food chain support: from production to marketing" led by COOPI.



# Microfinance and Climate Change in Bangladesh

Adrian Fenton

## About the author

**Adrian Fenton** is a PhD Researcher at the Sustainability Research Institute, University of Leeds. Adrian is also affiliated to the Centre for Climate Change Economics and Policy and a Visiting Researcher at the International Centre for Climate Change and Development. In addition, Adrian is an independent consultant working on development and climate change policy. He has worked for multilateral institutions such as the United Nations Environment Programme and the United Nations Development Programme; as well as non-governmental organisations such as CARE and Oxfam International.

## Abstract

*Bangladesh is one of the most vulnerable countries to climate change, but it is also a pioneer in climate change adaptation and has a diverse and prominent microfinance sector. My research investigates the relationship between microfinance and climate change in Bangladesh. Firstly, it investigates how microfinance affects climate change adaptation at the household level. Secondly, it investigates the vulnerability of microfinance institutions to climate change. The research will create policy guidance regarding how to reduce the vulnerability of the microfinance sector to climate change, and maximise its potential to facilitate household adaptation.*

## Introduction

Debates in adaptation have led to an interest in its linkages with microfinance and its appropriateness to fund and facilitate household level adaptation. Such interest is pertinent since most adaptation finance has gone towards government efforts, despite the reality that most adaptations will be made autonomously by households (see Fenton et al., 2014). Little is known about how autonomous adaptation efforts can be financed, but the mechanisms are unlikely to be similar to those used to finance government efforts: the former entail large number of small transactions and the latter a small number of large transactions. Because of its history of channelling funds to low-income and otherwise disadvantaged groups, microfinance has potential to fund the many small actions household may take to adapt to climate change.

## Household livelihood adaptation

As microfinance operates at the household level, it most obviously links to autonomous adaptation by households such as the adoption of drought tolerant seeds, or the construction of storm resistant homesteads. Autonomous adaptation is a continual process occurring in response to multiple stimuli and is typically associated with private adaptations by households. Autonomous adaptation strategies respond to multiple stimuli and their effectiveness depend on existing incentives and knowledge, as well as available resources and skills (Fankhauser et al., 1999). Not only may microfinance be able to provide some of these, but empirical evidence has identified restricted access to credit as an adaptation

barrier (e.g. Bryan et al., 2009). Microfinance may positively influence adaptation through its potential to reduce poverty by helping to build income and asset bases; as well as enhancing cash, resource, and risk management strategies (Sebstad and Cohen, 2001, Agrawala and Carraro, 2010, Hammill et al., 2008, Heltberg et al., 2009).

## Methodology

In light of the above, the aim of this research is to explore the impact of climate change on the microfinance sector in developing countries. Consequently, the main research question this research seeks to address is: What role can microfinance have in fostering household adaptation to climate change, and what are the implications of climate change to MFIs.

The research is located in a village in south-west Bangladesh, identified through a literature review and validated as being particularly vulnerable to climate change through key informant interviews (with district and sub-district government and non-governmental representatives). The area also has high levels of adaptation initiatives, and a diverse and prominent microfinance sector.

This research involves both the collection of quantitative data and qualitative information at village level, in addition to key informant interviews with various stakeholders at district and national level. Six focus group discussions were conducted to explore issues within the village and to ensure the quantitative survey was appropriately designed. Preliminary findings from the census survey have been used to select households for qualitative interviews on the basis of their socio-economic status, adaptive capacity, and vulnerability. Preliminary findings have also yielded current household livelihood profiles used to facilitate these interviews. In addition, preliminary findings from the survey have identified all of the MFIs which are currently providing services in the village, as well as the quantity of loans and credit disbursed by each. The most prominent providers across cooperatives, banks, and NGOs were selected for interview. In total the qualitative phase of the research involved interviews with 40 households, 15 businesses, 15 MFIs, as well as interviews with the government regulator and wholesaler of credit.

### **Preliminary findings**

The results highlighted a plethora of institutions provide microfinance services in the village. In total members of the village had been served by 8 rural banks, 13 non-governmental organisations (NGOs), and 10 community-initiated and managed financial cooperatives. In total there is 1 financial institution for approximately every 9 households. Only one-eighth of households do not have a loan outstanding with no single characteristic being able to describe this group. All but one rural banks were at least part owned by the central government resulting in strict prescribed loan procedures for calculating loan amounts dictated by the Central Bank. Local, regional, and national NGOs serve the village, some offering only financial services and some offering non-financial services, however, not in an integrated manner associated with the graduation model. The cooperatives are owned by households of the village, and the oldest of them have been in operation before the arrival of NGOs.

The majority of credit is provided by NGOs due to the volume of loans provided, the vast majority of clients are female. Most loan products require compulsory savings, some have embedded life insurance, though specialised deposit products are offered by some. Despite rural banks offering higher average loan sizes and charging the least interest, they disburse the least credit due to complicated loan procedures. Cooperatives accounted for 25% of all loans disbursed and 20% of all credit disbursed, the vast majority of clients are male. They offer loans to members and non-members, with membership ensuring priority. Membership size is equal across members who see it primarily as an investment opportunity. The most popular source of credit is family and friends as it is interest-free and highly flexible. Village households in provide over half of credit disbursed.

Household livelihoods are predominantly agricultural, with most households owning some trees, fish, livestock and poultry. Livelihoods have been dramatically affected by waterlogging which has affected the village for approximately the last 10 years. As a result most households can only produce subsistence rice crops - their main source of investment capital. Livestock, poultry, and fish production has been damaged; and many household trees providing food, fodder, fuel, and material have died. Most homesteads have been destroyed.

Most households have used microcredit to rebuild homesteads, which would otherwise have been impossible. Additionally, the ability to use microcredit reduced the need to sell livelihood assets. Thus microcredit has enabled households to maintain essential productive livelihood activities. NGOs and cooperatives were essential providers as banks are not able to loan for this purpose.

Microcredit is typically used as a coping mechanism during the waterlogging season, with 25% of all loans used for consumption purposes. Only 50% of loans are used for investment purposes, the majority of instances

being the purchase of agricultural inputs. All businesses in the small market have depended on microcredit as start-up capital. 25% of all loans have been used to repay existing debt, with many households in a downward spiral of debt. This is caused by denial or apathy by all MFI providers. The large amount of providers frustrates efforts to control overlapping. The fact that the cooperatives are unregulated also frustrates this issue. For those in debt, microcredit can restrict adaptive capacity, but for some it has increased adaptive capacity.

Though access to credit is also associated with other livelihood adaptations such as international migration and diversification into aquaculture, the volumes are in excess of what is available from microcredit providers. Those who have adapted the most have livelihoods extending the locality and can command resources across a greater and wealthier support network.

### **Potential future research question**

An interesting future line of research relates to the gender nexus point of climate change and microfinance. As climate impacts deepen, many households have begun to migrate as an adaptation option. From the results gained in this research, this typically involved the male head of the house, whereas the female head of the house, along with children and other family members stayed in the village. This has important consequences for climate change adaptation as property rights are rarely transferred to the female household head. Consequently, households can be less able to adapt to climate change as the main decision maker is removed from the locality and unable to make appropriate decisions. Microfinance, and its tendency to lend directly to women, may have an important role in increasing adaptive capacity in this regard. This is not only in supply capital, but also empowering and building the capacity of women to be able to make adaptation decisions. The actual impact of microfinance in this regards is however unknown and more research would be needed to understand this nexus.

## References

AGRAWALA, S. & CARRARO, M. 2010. Assessing the role of microfinance in fostering adaptation to climate change. Paris: OECD.

BRYAN, E., DERESSA, T. T., GBETIBOUO, G. A. & RINGLER, C. 2009. Adaptation to climate change in Ethiopia and South Africa: options and constraints. *Environmental Science & Policy*, 12, 413-426.

FANKHAUSER, S., SMITH, J. B. & TOL, R. S. J. 1999. Weathering climate change: some simple rules to guide adaptation decisions. *Ecological Economics*, 30, 67-78.

FENTON, A., GALLAGHER, D., WRIGHT, H., HUQ, S. & NYANDIGA, C. 2014. Up-scaling finance for community-based adaptation. *Climate and Development*, 6, 388-397.

HAMMILL, A., MATTHEW, R. & MCCARTER, E. 2008. Microfinance and Climate Change Adaptation. *IDS Bulletin-Institute of Development Studies*, 39, 113-+.

HELTBERG, R., SIEGEL, P. B. & JORGENSEN, S. L. 2009. Addressing human vulnerability to climate change: Toward a 'no-regrets' approach. *Global Environmental Change-Human and Policy Dimensions*, 19, 89-99.

SEBSTAD, J. & COHEN, M. 2001. Microfinance, Risk Management and Poverty, Washington, DC., Consultative Group to Assist the Poorest.

### Further readings

HELTBERG, R., SIEGEL, P. B. & JORGENSEN, S. L. 2009. Addressing human vulnerability to climate change: Toward a 'no-regrets' approach. *Global Environmental Change-Human and Policy Dimensions*, 19, 89-99.

HAMMILL, A., MATTHEW, R. & MCCARTER, E. 2008. Microfinance and Climate Change Adaptation. *IDS Bulletin-Institute of Development Studies*, 39, 113.

FENTON, A., GALLAGHER, D., WRIGHT, H., HUQ, S. & NYANDIGA, C. 2014. Up-scaling finance for community-based adaptation. *Climate and Development*, 6, 388-397.

AGRAWALA, S. & CARRARO, M. 2010. Assessing the role of microfinance in fostering adaptation to climate change. Paris: OECD.

# Community Inventory Credit or "Warrantage": a Tool Against Food Insecurity

Matteo Pietro Cortese

## About the author

**Matteo Pietro Cortese** graduated in Political Science in 2003 (University of Turin). In 2012 he completed a MA in Poverty and Development at IDS, Sussex University (Brighton, UK). He works for the Italian NGO CISV (Comunità Impegno Servizio Volontariato) as the economic and rural finance sector's programme manager since May 2014 (following programs in Burkina Faso, Mali, Niger and Mauritania) and as international consultant. He started working with CISV in 2004 as a civil servant in Turin, then as food security project manager in South West Burkina Faso (5 years) and Country Manager in Senegal (1 year). Between 2005 and 2007 he worked as finance consultant for a semi-private firm in Northern Italy (Eurofidi).

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## Abstract

*Too often, the seasonal price volatility of staple crops in Sub-Saharan African (SSA) countries adversely affects livelihoods of smallholder farmers, leaving them with abundance of food at harvest time (when prices are low) and with lack of food in lean times (when prices are high). Community inventory credit, also called warrantage, allows smallholder farmers to access credit at harvest time, using part of their crop as collateral: they are thereby able to better manage their harvest and improve their cash flow. The article outlines how this mechanism can be an effective tool in fighting food insecurity.*

## Warehouse receipt finance

Inventory Credit (IC) is a loan where stored commodities serve as collateral. The main players are a lender (bank), a borrower (producer, trader or processor) and a collateral manager. The borrower stores his commodities in a warehouse as collateral, gets a receipt indicating the quantity and quality of the commodities stored, and then borrows from a financial institution against the security of the stock. This system is usually called Warehouse Receipt (WR) system. It developed rapidly in the USA from the mid nineteenth Century, as well as in Latin America and Europe (Coulter, 2009).

Coulter et al (2014: 1) discuss 4 types of commodity-collateralized financing, including 'warehouse receipt finance': 1) Private warehouses (financing against collateral in a private warehouse controlled by a collateral manager) ; 2) Public warehouses (the word public does not connote state ownership but that it is open to deposits by the public at large); 3) Community inventory credit or warrantage (conceived for smallholder farmers working with MFI) ; 4) Lending against the security of current or future production (financing against certified documents on future productions, like Agricultural Bonds widely used in Brazil). This article focuses on community inventory credit, also called warrantage, or warrantage paysan.

## Warrantage

In the warrantage system there are two main actors:

a) a Farmers' Organization (FO) (owning or controlling a warehouse) who stores part of its farmers-member' harvest as a collateral (following a principle of 'community possession': Wampfler, 2008); b) a Microfinance Institution (MFI) that provides a loan against the stored collateral which is secured with a double lock system: one lock for the MFI and another one for the FO. The two institutions must be simultaneously present in order to open the warehouse. The stocks are usually held in the name of each individual farmer-depositor but, in normal circumstances, the MFI does not issue a receipt to each farmer: there is just a single document signed by the FO and MFI representatives showing the quantity, quality and value of the stock inside the warehouse. Warrantage credit can be lent directly to farmers' groups or through 2nd or 3rd level FOs (which supervise primary-level groups).

The main goal of warrantage for farmers is to better manage their agricultural production, and thereby improve their cash flow. According to Wampfler (2008), Marchal (2010) and Cortese and Coulter (2014), the main advantages of such a system are: instead of selling off their harvest when prices are at the lowest, farmers delay the sale when prices are higher (maintaining the ownership of their sacks); the loan allows farmers to satisfy their urgent needs (household expenditures, school fees, weddings, funerals, etc.) and/or invest in income-generating activities (small businesses, horticulture, breeding and fattening livestock, etc.); increased security of stocks, now they are held in solidly-constructed warehouses, instead of traditional cribs or granaries; the farmer is 'constrained' to save and he/she cannot reply to relatives' pressure for cereals; after the loan is reimbursed, the farmer can invest part of its profit in agricultural inputs to improve the productivity of his/her field; FOs managing the warehouses have sure earnings (storage fees) at the end of the operation; MFIs secure their portfolio in rural areas (usually considered at a high risk). The same authors list the main drawbacks as: organizational problems linked to grouped storage periods, grouped credit applications and grouped reimbursements; the double lock system inflexibility can delay credit supply, leaving out de facto most poor and vulnerable



farmers ; the liquidity constraints affecting many MFIs; the effort and costs involved in storage monitoring, a time-consuming activity that demands a certain organizational capacity of the FOs and MFIs; lack of storage infrastructures, above all in rural areas; State or International Organizations interventions in cereals markets during lean seasons that modify seasonal price patterns and threaten gains for farmers.

Warrantage has spread in SSA countries since the end of the '80s, with different degrees of success, particularly in Ghana, Madagascar and Niger, then also in Burkina Faso, Mali, Senegal, Burundi and Rwanda. Here we give a glance to Niger experience and to a case study in Burkina Faso.

### **Niger experience**

In 1999 the FAO 'Projet Intrants' (Input Project) introduced warrantage into Niger, with around EUR 3,000 portfolio. By 2009, the total loan portfolio had (according to Coulter and Sani, 2009) expanded to more than EUR 900,000, involving 10 MFIs and around 125 FOs. The products stored as collateral were mainly groundnuts, millet, cowpeas, sorghum, rice, dried sorrel leaves, beans and paprika. Still, total stock financed in 2009 was estimated only about 5,000 tones, representing just 0.1% of the national production (Coulter and Sani 2009, Marchal 2010). Looking at the situation in 2014, Cortese and Coulter (2014) could not find sufficient data to update this estimate. However, the available data gave the impression that adoption of warrantage had stagnated since the end of FAO support in 2009. Moreover, poor crop seasons and the inflexibility of the double lock system seemed to have slowed down the expected upward trend in adoption. There is a need to study the situation in greater depth.

Significantly, the 'Fédération des Unions des Groupements Paysans du Niger (FUGPN) Mooriben', which in 2008/2009 season accounted for about EUR 134,000 warrantage loans (nearly the 23% of the total), after 2010 had abandoned the system. One major problem, according to Mooriben, was the delay caused by the double lock system in accessing the credit: the first farmer depositing his/her production had to wait for up to two months to access his/her credit while the other farmers made their deposits and the warehouse could be closed. In 2011, Mooriben got round this problem by negotiating an advantageous loan with BAGRI (Banque Agricole du Niger), putting on the table its own capital as guarantee (nearly the 30% of the loan), in order to buy a part of their members harvest (throw its Unions) and postponing the sale. In this way Mooriben was able to find a more advantageous financing arrangement than warrantage. Of course, Mooriben could only do this thanks to its considerable organizational strength and capital assets, features which are often not present in West African FOs.

By contrast, it has to be noticed that the biggest MFI in Niger, ASUSU SA, has started financing warrantage in 2009 and had good results in term of portfolio, with around EUR 485,000 of warrantage credit in 2014

(Cortese and Coulter, 2014). Moreover, many other MFIs continue to finance warrantage in Niger, and some, such as Kokari, started experimenting pre-financing the warrantage campaign (without using double lock system) with some reliable FOs.

### **Lessons from COPSA-C in Burkina Faso**

COPSA-C (Coopérative de Prestation de Services Agricole 'Coobsa') is a 3rd level FO based in Founzan, representing around 2,500 farmers in the Tuy and loba provinces in the southwest region of Burkina Faso. It managed warrantage in partnership with RCPB (Réseau de Caisse Populaire du Burkina Faso) since 2009, then, after 2013, with Coris Bank. Starting in 2007, the Italian NGO CISV (Comunità Impegno Servizio e Volontariato) supported the introduction of warrantage in the area with 3 grassroots FOs, and in 2009 it supported the creation of COPSA-C. Since then, COPSA-C manages warrantage in autonomy on behalf of its member groups which are located in 29 villages, and which bring together around 1,300 members, of which one third are women. By 2014, the total loan portfolio had reached almost EUR 70,000.

At the end of the operation, primary level FOs share with COPSA-C the storage fees collected on a fifty-fifty basis. In the past 8 years, reimbursement has been always 100%. The focus is on food security: most of farmers reimburse cash in order to get back in lean time the bags put in the warehouses during harvest time. COPSA-C calls it a 'second harvest'. It is interesting to notice that a private bank (Coris Bank) heard about this experience and offered COPSA-C better terms than RCPB, in particular a credit line to COPSA-C, leaving to the cooperative the whole management of the double lock system. That means that when COPSA-C fixes a date for the storage in harvest time (e.g.: December 1st), it has already the money in its account. Therefore, if farmers at the village level respect the date and bring their bags on time, the same day they close the warehouse with the double lock system (one lock controlled by a COPSA-C employee and one lock by the warehouseman) they will also have their credit. RCPB did not offer this opportunity to COPSA-C, so Coris Bank captured the whole COPSA-C account. Of course, COPSA-C is responsible for the loan, and has all the interest that the collateral is well secured in the warehouses. Moreover, Coris Bank can send their credit agents to check the warehouses whenever they want. In effect Coris Bank has bet on the creditworthiness of COPSA-C, and this has so far paid off.

Another interesting aspect is that FAO and Swiss Cooperation have since 2012 funded a 'warrantage training centre' in Founzan under the control of COPSA-C, and which has trained several FOs and MFIs from Burkina Faso and West Africa. The International Food Policy Research Institute (IFPRI) also demonstrated interest in this experience and in collaboration with IPA (International Poverty Action), COPSA-C and CISV started an RCT (Randomised Control Trial) impact evaluation in 2014 on warrantage in an area adjacent to COPSA-C (with villages that have not yet



experienced the system). First results are expected in 2016. While COPSA-C, in common with most of FOs in SSA, faces long-term issues of sustainability, its warrantage scheme has demonstrated so far to have the potential as a powerful food security tool against seasonal price crops volatility (FAO 2012, Ghione 2014).

### Final remarks

Concerning the topic of 'Enhancing Food Security and Resilience to Climate Change: What Role for Microfinance', community inventory credit (or warrantage) can be a useful tool to enhance resilience of smallholders in the face of seasonal price crop volatility. Of course, the production first needs to be in place, but this is another issue. Also, as it has been argued, warrantage has its limitations. Central questions have to be investigated more deeply: what is the appropriate role for Governments and international organizations in supporting (or not undermining) community inventory credit? What is the real impact of such a mechanism? Are there better

options in order to better manage rural harvest against seasonal volatility? Nonetheless, there are two central points to be underlined: firstly, as several authors argue (Wampfler, 2008; Coulter and Sani, 2009; Marchal, 2010; Konlambigue 2011), warrantage allows farmers to enhance the food security of their households; secondly, the fact that farmers repeatedly use the tool year after year indicates that it is already providing them with large net benefits (Coulter, 2015, pers. comm).

In conclusion, warrantage seems to be one of the possible strategies for smallholders to better manage their harvest and their cash flow in SSA, but not the only one. When conditions are on the table (such as FO reliability and, above all, confidence is in place between MFIs and FOs), pre-financing warrantage (like Kokari with some FOs in Niger and Coris Bank with COPSA-C in Burkina) might be a partial solution to the double lock inflexibility. There is still huge space for further research by practitioners and academics.

### References

Cortese M.P. (2012), 'Warrantage' or 'Inventory credit' in Burkina Faso: a food security tool against seasonal volatility. MA Dissertation, MA in Poverty and Development, Institute of Development Studies (IDS), University of Sussex, September 2012.

Cortese M.P. and Coulter J. (2014), 'Warrantage. Rapport Pays Niger'. In Coulter J. Consulting and Sullivan & Worcester UK LLP (2014), Study on appropriate warehousing and collateral management systems in sub-Saharan Africa and Madagascar. Prepared for FIDA, AFD and CTA, July 2014.

Coulter J., (2009) Review of Warehouse Receipt System and Inventory Credit Initiatives in Eastern & Southern Africa. A working document for comment commissioned by UNCTAD under the All ACP Agricultural Commodities Programme (AAACP). Available from: [http://www.ruralfinance.org/fileadmin/templates/rflc/documents/Review\\_of\\_Warehouse\\_pdf.pdf](http://www.ruralfinance.org/fileadmin/templates/rflc/documents/Review_of_Warehouse_pdf.pdf)

Coulter J. and Sani M.. (2009), Revue du warrantage paysan au Niger. Rapport élaboré pour l'Agence Française de Développement (AFD), Niger, Décembre 2009. Accessible sur : [http://warrantage.capitalisation-bp.info/Etude\\_Coulter\\_Warrantage\\_AFD2009.pdf](http://warrantage.capitalisation-bp.info/Etude_Coulter_Warrantage_AFD2009.pdf)

Coulter J. Consulting Ltd. and Sullivan & Worcester UK LLP (2014), Study on appropriate warehousing and collateral management systems in sub-Saharan Africa and Madagascar. Final Report. Prepared for FIDA, AFD and CTA. September 2014.

FAO (2012), Le warrantage de la COPSA-C dans le Sud-Ouest du Burkina Faso. Fiche d'expérience Burkina Faso, Projet Capitalisation FAO Burkina Faso. Report realised by Fatouma Déla Sidi et Salmou Hassane.. Available from : <http://www.fao.org/3/a-aq217.pdf>

Ghione A. (2014), 'Warrantage. Rapport Pays Burkina Faso'. In Coulter J. Consulting et Sullivan & Worcester UK LLP (2014), Study on appropriate warehousing and collateral management systems in sub-Saharan Africa and Madagascar. Prepared for FIDA, AFD and CTA. Burkina Faso, March 2014.

Konlambigue M. M. (2011), Rapport sur la revue des expériences de récépissés d'entrepasage et de warrantage pour le financement de l'agriculture en Afrique de l'ouest. Rapport commandité par la CNUCED (UNCTAD), January 2011. Available from: [http://www.inter-reseaux.org/IMG/pdf/1WSTC02Rapport\\_Konlambigue\\_fr-3.pdf](http://www.inter-reseaux.org/IMG/pdf/1WSTC02Rapport_Konlambigue_fr-3.pdf)

Marchal D. (2010), 'Le warrantage au Niger, pour renforcer la trésorerie des paysans'. Grain de sel, n° 49, janvier-mars 2010, pp: 33-34. Accessible on: [http://www.inter-reseaux.org/IMG/pdf\\_p33\\_34\\_Warrantage\\_Niger.pdf](http://www.inter-reseaux.org/IMG/pdf_p33_34_Warrantage_Niger.pdf)

Wampfler B. (2008), Le développement du Warrantage au Niger : Communication du projet Intrants FAO au colloque Farm. Paris, Décembre 2007. BIM n°12, February 2008.

### **Further readings**

COPSA-C (2012), Comprendre et réussir le warrantage avec la COPSA-C. Guide sur les bonnes pratiques du warrantage. Available from : <http://www.fao.org/docrep/017/aq296f/aq296f.pdf>

FAO (2012), Le warrantage au Niger, une pratique adaptée aux besoins des petits producteurs et productrices. Fiche de bonne pratique, réalisé par Salmou Hassane et Fatouma Déla Sidi, Food and Agriculture Organisation (FAO) Niger, Juillet 2012. Available from : [www.fao.org/docrep/017/ap790f/ap790f.pdf](http://www.fao.org/docrep/017/ap790f/ap790f.pdf)

FAO (2012 ), Projet capitalisation de la FAO et le warrantage. FAO Working papers on different warrantage experiences. Available from: <http://www.inter-reseaux.org/ressources-thematiques/article/le-projet-capitalisation-de-la-fao>

Lacroix R. and Varangis P. (1996), "Using Warehouse Receipts in Developing and Transition Economies". Finance & Development, September 1996, International Monetary Fund (IMF), pp.: 36-39. Available from: <http://www.imf.org/external/pubs/ft/fandd/1996/09/pdf/lacroix.pdf>

# Microfinance, Ecosystems Conservation and Adaptation to Climate Change

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## About the author

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His fields of expertise is the link between microfinance and environment in all its dimensions: energy, climate change, ecosystems, rural development, environmental risk management and environmental indicators for MFIs, both in developing and developed countries. He has also sound expertise in microfinance credit risk, overindebtedness, microfinance crisis, and microfinance and communities in post-disasters areas.

In 2013, his research activity received the FIR-PRI Finance and Sustainability European Research Award.

## Abstract

*Small farmers in developing countries are among the most vulnerable population to environmental degradation and climate change. At the same time they are fundamental to assure food security in their communities.*

*Microfinance has recently got involved in promoting environmentally friendly practices and adaptation strategies to climate change, under the bigger umbrella of what is right now known as green microfinance. This short paper briefly explores three main aspects of green microfinance:*

*1-Ecosystems conservation: I illustrate Proyecto CAMBio, a seven years long project in Central America, composed by credit, technical assistance, payment for environmental services and partial guarantee, to promote agroforestry and silvopasture, and the conservation of biodiversity;*

*2-Climate change vulnerability: I discuss Agroamigo, the largest rural microfinance programme in Brazil, operating in the North-East of the country; the poorest region in Brazil and among the most affected by Climate Change;*

*3- Adaptation to Climate Change: I describe the Microinsurance Facility for Climate Change Adaptation by Save The Earth Cambodia, that is a specific small scale program of savings, credit, technical assistance and in-kind insurance, to increase the resilience of rural population.*

*These three examples point out that microfinance could be an important tool to support food security, rural development and climate change adaptation, but at the same time I argue that microfinance alone, without well designed strategies to redirect dominant development pathways toward environmentally friendly and socially inclusive rural development, is not effective enough to build resilience and conserve ecosystems.*

## Introduction

Family farmers cultivate 80% of the agricultural land and produce about 80% of the world food, yet 70% of poor and food-insecure people live in rural areas (FAO 2014; World Bank, 2015).

The 75% of the world's poor are indeed people that live in rural areas, and the majority of them is involved in farming activities (WBe; World Bank, 2008).

Small holders rural farmers are not only food insecure, but they are also affected by many other issues. They have reduced access to electricity and clean cooking facilities: among the over 1.3 billion people without access to electricity, and the 2.6 billion people without clean cooking facilities: 84% live in rural areas (IEA, 2011).

Moreover poor people, especially farmers, in developing countries are the most exposed to Climate Change and environmental degradation (IPCC, 2014). They pay high energy costs, and they are vulnerable to energy and food price volatility. Many of these problems are related to each other: the Climate Change negatively affects food security; unsustainable agricultural practices and land use induce deforestation, decrease resilience of farmers and contribute to Climate Change.

## Climate change and food security

There are plenty of possibilities to improve this situation and support fair, socially inclusive, and environmentally friendly development. However, we should avoid taking a too simplistic view of the problem. It is indeed tempting to conclude that "smart" investments in agriculture, could support poverty reduction, improve food security, and reduce climatic risk; issues such as growing world population and the consequent increase in demand for food and energy could be solved by increasing food production, and improving technologies; or that we could cope with climate change by adopting financial transfer mechanisms and focus on CO2 reduction. While

such initiatives are for sure important, required and valuable, it is important to acknowledge that we live in a complex socio-economic-environmental world, in which poverty, inequalities, and environmental degradation are not accidental phenomena, that can be simply cured with some marginal correction to our development paradigm, but they are instead systemic, intrinsic part of the socio-economic tissue in which we live. Quite too often some of the problems just listed are not only related to absolute deprivations but instead linked to asymmetries: power, access to resources, technologies, opportunities are heavily uneven distributed among countries and people. The evidence suggests complex inter-relational dynamics as some of the causes of the major problems of our century, instead of simply the attitude, opportunity, or livelihood of a single actor or group of actors.

Reconsidering for example the issue of food security a simple reflection allows to conclude that food insecurity is not only a matter of production, but also, and very importantly, of access to food (Sen, 1981): historically famines indeed have been mainly due to the inability of the most fragile population to buy food and not to only due to food production (in famous famines such as Ethiopia in the nineties or Ireland in the nineteenth century, food outflowed from affected regions to area/country where there were people able to afford the price to buy the food. In the quest for better market food was escaping from the ones that needed it more towards the ones that could pay for it). Historical research allows to conclude that democracy prevents famine, however it is observed that socio-economic inequalities are growing and so the effective possibility of real democracy is decreasing. Availability of cultivable land and water, fundamental to assure food security, is greater, and it will remain quite constant in the future, in rich countries than in poor ones where moreover cultivable land and water per person are doomed to decrease fast.

These simple reflections related to food security bring us to the conclusion that there is an urgent need for major change in our "development" paradigm that aim to challenge forces and relations among different actors and not simple corrections looking to transfer goods, technology, access to finance, etc.. However every path starts with the first steps, and it is probably important to look at the best directions where to move the first steps among the available choices we have nowadays.

### **A possible role for Microfinance?**

Microfinance is certainly not the solution to this complex problem, but it can be an important tool to support adaptation to climate change, conservation of ecosystems and food security, if its limitations are understood, realistic expectations are employed, and if microfinance is included in a broader set of strategies, alliances and actors.

Microfinance institutions can, or sometimes have to, decide to play a role in fostering food security and limiting the impact of climate change for various

reasons, among which:

- vulnerability: clients and institutions are vulnerable to the effects of climate change and food prices;
- opportunity: deciding to engage in food security and climate change adaptation could reduce the risk for clients and MFIs, provide a better income for clients, develop new products for MFIs, and assure to the institutions new funding and external assistance;
- comparative advantage: among the various available delivery mechanisms for climate change adaptation and food security mechanisms, microfinance has the advantage of "proximity" (socially and geographically) to a considerable amount of poor or vulnerable people, and it has already established mechanisms to foster the adoption of certain practices. MFIs could indeed, and various of them have already started to, develop specific products for agroforestry, silvopasture, or organic farming; or to foster diversification of incoming activities, finance the use of adapted seeds/activities, foster insurances, etc.

Two natural questions come to mind:

- Can microfinance effectively do it?
- If MFIs will engage with food security and climate change adaptation, would it actually have positive and sizable impacts on ecosystems?

In the remaining sections we briefly investigate such questions following a two-step approach assessing the two dimensions: 1. to what and how microfinance can contribute to climate change adaptation and ecosystem conservation; 2. what are its limitations and what would it would need more to improve its outcomes.

We build our analysis along three related dimensions and we will base our analysis on the study of three programmes:

- Climate Change vulnerability: the case of Agroamigo in the North-East region of Brazil;
- Climate Change adaptation: the case of the NGO STEC in Cambodia;
- Ecosystems-Biodiversity conservation: the case of Proyecto CAMBio in Central America

### **Climate Change vulnerability and microfinance**

There are reasons to believe that Climate Change increases the risk of microfinance institutions: directly due to the exposure of physical assets and employees to natural hazards, and indirectly due to the increased credit and liquidity risks of the institutions that have as target population unbanked or poor households, that are in general more vulnerable (especially if engaged in agriculture). In literature there are some theoretical discussions and few empirical studies.

In this section we briefly analyze the vulnerability to climate change of MFIs presenting the case of Agroamigo. Agroamigo is the largest rural microfinance programme in Brazil. It began its operations in 2005,

and at the end of 2013 it had disbursed more than 2.5 million of credits. Its operations are concentrated in the North-Eastern region of Brazil (9 states), that it is a very poor area, extremely dry, and so, vulnerable to Climate Change.

The programme provides productive investments in livestock and agriculture for smallholder-poor farmers that are indeed much needed.

However, in a study conducted in 2013 (Moser et al. 2015, Forcella et al., 2015), we find that the programme is very vulnerable to Climate Change, even if it aims to foster local rural development. Indeed due to local development pathways, consisting mainly in livestock raising, the programme can hardly foster the diversification of clients' economic activities that would reduce the climatic (drought) risk for clients and MFI: indeed 81% of the credit provided is used for livestock raising, moreover the programme is not able to foster adaptation practices. As a snapshot of the programme's vulnerability it is enough to highlight that the in 2012-2013 the North-East region of Brazil was affected by major droughts, that costed to the programme USD 1.5 billion in emergency loans equivalent to around 75% of the the total loan volume cumulated since the beginning of the project. Clients organised protests asking for debts write-off, and the livestock price fell by 28%-50% in certain regions.

Even if the programme is so exposed to weather shocks, it has a hard time coping with it. Indeed a more in-depth analysis shows that the geographical credit distribution of the programme in the nine states increased its credit risk, because it allocated more credit amount (total gip) to states more vulnerable to climate change, while at the same time it was not able to provide more resources or coping mechanisms to people in regions that are more vulnerable to climate change, because indeed it allocated less credit per person (considering the full state population) in states that are more vulnerable to climate change.

This example hints that there are opportunities for microfinance to support vulnerable populations and increase resilience, but there are also potential pitfalls and possible side effects of standard microcredit distribution and provision that need to be properly addressed and integrated in broader adaptation policies.

### **Climate change adaptation and microfinance**

As highlighted in the section above MFIs and its clients are vulnerable to climate change. It is then natural to investigate the possible role of microfinance to support climate change adaptation. In this section we briefly illustrate this aspect with the example of a specific programme that aims to promote climate change adaptation for poor rural households and increase clients' resilience: the Microinsurance Facility for Climate Change Adaptation developed by the NGO Save The Earth Cambodia (Forcella, 2013a; Forcella, 2013b). The programme started in 2007 and it phased out in 2009. From 2009 till now the programme has been completely managed by the community. The

programme was originally implemented in one village in West Cambodia, and at the period of investigation (2013) it was planned to expand in other villages as well. It is composed by multiple tools: savings accumulation, credit, technical assistance, external fund, and in-kind insurance (rice). It mainly consists in a revolving fund owned and managed by the community, that provides credit for income diversification. The investments are supported by a purposely developed climate adapted farming calendar. It offers an investment in rice stock (to prevent high price in dry season), and it is combined with gender empowerment, education and food security strategies. The programme is successful, indeed:

- 3 years after the phasing out, the programme was still active, and 68% of the households were part of the programme;
- interviewed clients declared to have on average 2.8 different sources of income, and have started an average of 2.2 new activities since the beginning of the programme;
- the number of animals per client increased more than 2 times since the beginning of the programme (from 10 to more than 22), and the number of households that based its livelihood mainly on the income of one of the family member forced to migrate in other areas or countries decreased from 40% to less than 10%.
- However a more in depth analysis shows some limits about the actual outcomes in terms of reduction in vulnerability. Indeed even if the households in the village increased their number of income generating activities, it turns out that the number of activities from which the family obtain most of their income (principal activity) has remained constant at an average of around 1 per household. Moreover the importance of rice as principal activity has constantly grown starting from being the principal income generating activity for only the 22% of the households, to being the principal activity for 54% of the households three years after the phase out of the programme. This trend is quite worrying, indeed the rice is very vulnerable to climate change, and in particular droughts that constantly affect the region. This is even more relevant due to the extreme conditions of the area where the programme has been implemented: dry land and very primordial system of irrigation. However such (climatic risky) investment strategy is very normal in the local culture for which rice is the pillar of rural work. This programme shows once more that interaction of a project with the local socio-economic-cultural dynamics can generate side effects also for programmes that are well designed and implemented. Local development pathways, habits and culture should be carefully considered to generate systemic change and improve the resilience of poor populations.

### **Ecosystems and microfinance**

Climate change threatens important ecosystems for human survival and exacerbates biodiversity losses.



Microfinance can contribute to cope with it developing financial products that support its clients to start new activities that can generate a greater income and, at the same time, improve biodiversity conservation. In this regard, Proyecto CAMBio is a very interesting example (Forcella, 2014). It is the first large scale microfinance programme for biodiversity conservation. It was implemented in 5 Central American Countries, in the period 2007-2013, and supported by GEF-CABEI-UNDP. It aims to finance agroforestry, silvopasture, organic farming, ecotourism, protection of forest and water sources. In order to do so it offers credit, technical assistance and a conditional payment rewarding the producers that have actually planted the number of trees agreed on at the time when the credit was disbursed. In certain cases the programme also offer a guarantee to reduce the risk. The CABEI claims that 26 financial institutions participated to the programme disbursing USD 52 million in credits that benefitted around 25,000 clients. Here we briefly focus on the implementation of the project done by the MFI FDL and the NGO Nitlapan (Forcella, 2012). One of the reason to focus on these cases is that those institutions have very successfully implemented the project. The credit was provided by FDL to support clients' investment in silvopasture or agroforestry, whereas Nitlapan offered technical assistance, and the GEF payed for the environmental rewards that were equal to 14% of the credit amount to the successful producers and 6% to FDL. The programme proved to be thriving:

- more than 1,000 farmers were financed with a loan of around USD 2,000 on average, a maturity of up to 3 years, and with a very low credit risk: PAR30 of 0.7%;
- clients invested on average 1.6 Ha of their lands to the new environmentally protecting activity;
- more than 90% of clients were successful.

However, also in this case, a more detailed analysis provides less optimistic conclusions. Indeed the programme interacts with locally pre-existing environmentally dangerous development pathways and socio-economic inequalities that resulted in reduced effects or in some cases even fostering the negative dynamics it was supposed to offset. More resources were indeed allocated to more capitalised and environmentally damaging producers. The poorer and more environmentally friendly farmers were instead underfinanced. A quantitative analysis (Forcella and Huybrechts, 2015) shows that the consequences were that credits provided by Proyecto Cambio were not able to influence the ecosystem conservation at the level of the farm, and the environmental reward was not able to reward environmental improvement. Credit indeed, even if financing agroforestry and other green activities, was allocated according to standard finance-credit logic, and it ended rewarding the more capitalised small producers, that however were also the ones with more environmentally dangerous activities.

## Conclusion

The three cases presented show that microfinance can contribute to cope with the risks brought about by climate change and support food security. Some positive aspects are:

- there are good potentialities to implement successful and efficient programmes;
- there are evidences of the ability of microfinance to support adaptation strategy at the micro level ;
- there are evidences that certain MFIs can implement complex programmes for biodiversity conservation -rural development - food security.

However from our discussion it also appears that microfinance is just one tool but not the solution.

The complexity of environment-society system should be understood. To be successful Green microfinance should probably:

- develop a careful environmental policy and not stuck on credit logic only;
- carefully articulate with local actors, territorial dynamics, support new alliances;
- contribute to redirect environmentally dangerous pathways;
- assume a long term, social and environmentally inclusive perspective.

## References

- FAO 2014. The state of food and agriculture 2014. In: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (ed.). Rome: Food and Agriculture Organization of the United Nations.
- Forcella, D. (2012). "Payments for Environmental Services and Microfinance - Proyecto Cambio in Nicaragua". European Microfinance Programme Master's thesis, Université Libre de Bruxelles.
- Forcella, D. (2013a) "Preliminary Assessment of Microinsurance Facility for Climate Change Adaptation by Save The Earth Cambodia". Evaluation paper, March 2013.
- Forcella, D. (2013b) "Microfinance and Adaptation to Climate Change", 10th UMM Thematic Paper: New challenges in microfinance – Mobile banking, remittances and green microfinance, Frankfurt School of Finance & Management, 4-5th July 2013.
- Forcella, D. (2014): [http://www.universitymeetsmicrofinance.eu/uploads/2/5/8/2/25821214/poster\\_forcella.pdf](http://www.universitymeetsmicrofinance.eu/uploads/2/5/8/2/25821214/poster_forcella.pdf)
- Forcella, D., Moser, R., Gonzales Farias, L.E., (2015). "Rural Microfinance and Climate Change: Geographical Credits Allocation and Vulnerability. An Analysis of Agroamigo in Brazil's Northeastern States", working paper. SSRN-id2599056.
- Forcella, D. and Huybrechts, F. (2015). Green Microfinance for Ecosystem Services, an empirical quantitative study of a project's results, the variables influencing its outcomes and the effectiveness of the related conditional payments. Working Paper SSRN: <http://ssrn.com/abstract=2635228>
- IEA2, (2011). World Energy Outlook 2011 - Special Report - Energy for All. International Energy Agency.
- IPCC, (2014). Climate Change 2014: Impacts, Adaptation, and Vulnerability. Working Group II contribution to the 5th assessment report of the IPCC, 2014.
- Moser, R., Forcella, D., Gonzales Farias, (2015) "Microfinance and climate change: threats and opportunities, the case of Brazil's largest rural MFIs, Agroamigo and Cresol", working paper. SSRN-id2571999.
- Sen, A., (1981). Poverty and Famines: An Essay on Entitlement and Deprivation, Oxford University Press 1981.
- WBe, <http://www.worldbank.org/en/topic/agriculture/overview#1>
- Word Bank, (2008). World Development report 2008: Agriculture for Development. The World Bank
- Word Bank, (2015). Agriculture & Rural Development Data.

# A Multidimensional Approach in Response to Major Climate Change Threats: the Case of the LIFE FUND in the Philippines

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## About the author

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## Abstract

*Etimos Foundation is a foundation of members, which represents a wide range of organizations based in four continents. It concentrates on social finance and social economy. Through the years Etimos Foundation focused on finance for development and microfinance, and implemented several programmes in the area of post-emergency microfinance.*

*The idea behind the Life-Fund is to involve stakeholders with different backgrounds, setting up an array of instruments to support the socio-economic recovery of the communities affected by the typhoon Haiyan. Philippines are among the countries most at risks to disasters and integrating innovative microfinance solutions with training facilities also appears as a sustainable path to mitigate potential future risks.*

## Introduction

The Philippines ranks third among the countries most at risk to disasters in the World Risk Report 2013<sup>1</sup> with commonly occurring hazards including:

- **Typhoons** - Over 20 typhoons affect the country annually, with 8 or 9 making landfall. These come from South-East and are generally the strongest and affect Samar, Leyte, and Luzon islands.
- **Floods** - Often result from prolonged rainfalls associated with typhoons and tropical depression. Philippine is particularly vulnerable to sea level rise and storm surge since approximately 60% of its municipalities are located along the coast.
- **Earthquakes** - Philippines is located between two major tectonic plates and experiences almost 900 earthquakes annually.
- **Droughts, landslide, mudslides and volcanoes**

**The typhoon Haiyan**, considered one the heaviest ever registered, hit the central region of the Philippines on November 8th, 2013 resulting in casualties and destruction.

The dramatic results of this event were: 16 million affected, more than 6,000 deaths, 44 provinces involved, more than one mil houses destroyed

1. World Risk Report, 2013, Alliance Development Works. United Nations University, Institute for Environment and Human Security, Bonn University, 2013.

## The approach of Etimos Foundation

Etimos Foundation has experienced the use of microfinance in some post-emergency contexts: in particular in Sri Lanka after the Tsunami of December 2004, in Italy (Abruzzo and Emilia) after the earthquakes (2009 and 2012) and in the Balkans after the conflicts.

The organization learnt that microfinance cannot be an instrument of first aid in emergency, when tools of immediate relief are needed. Restarting credit activities and supporting micro-enterprises helps restoring their pre-existing level of economic well-being and psychological health. Moreover the instrument of credit allows to increase the available resources, optimizing their use.

A new cooperation approach is needed to respond to the beneficiaries' needs and to be sustainable on the long term. This means joining efforts, resources and expertise in large programmes, rather than focusing in an array of micro interventions. It also means promoting synergies among different tools and organizations: grants, patient capital and other resources, from public and private organizations, also through impact investing.

In the mean time it appears strategic to involve strong local partners, promoting the ownership of programmes and processes in the implementing countries, where local organizations must have a pivotal role in the project design, management, and assessment of the actions. Thus building effective and flexible local management models that can be replicated on a wider scale.

## The Life Fund initiative

Etimos decided to give shape to this approach under the implementation of the Life Fund: "Livelihood Intervention through Financing and Entrepreneurship".

It is an intervention that aims to restore the livelihoods and support the recovery of the micro-enterprises in the communities most affected by the typhoon.

The Life Fund involves different components:

- The capitalization of local MFIs, which have seen their loan portfolio seriously affected by the economic damages of the typhoon;
- A rotating fund to grant loans to restore the operational capacity of the MFIs, so they can support

the affected micro-entrepreneurs;

- Technical assistance to strengthen the capacity of the MFIs;
- Skill trainings for the final beneficiaries ( business development, risk reduction management, micro-insurance);
- Community socio-economic development projects

During the project design beneficiaries highlighted the following needs, which the Life Fund is primarily addressing: a) a subsidized credit to repair or rebuild houses and buildings; b) new commercial credits to restart their economic activities destroyed by the typhoon; c) help in claiming the insurance benefits.

Microinsurance proved to be an effective tool to reduce vulnerability, also in this framework. Most of the APPEND's clients (Alliance of Philippine Partners in Enterprise Development, a MFIs network and Etimos Foundation local partner) were insured, then after the typhoon Haiyan they received a contribution to repair their houses.

The micro-insurance products proved to be a great contributor to support the poor communities in case of eventualities resulting from the climate change.

A key element for the implementation of the programme is the country microfinance environment: the Philippines have a strong and dynamic microfinance market, defined by some strengths: a) excellent performance; b) one of the best law infrastructures to support microfinance; c) innovation on products and instruments to respond to clients needs and support financial inclusion, contributing to poverty eradication; d) presence of different actors: NGOs, cooperatives, microfinance banks (NGOs having the deepest outreach, serving the poorest clients).

On the overall programme financial structure, represented by around € 7.2 Million investments and around € 0.8 Million grants for technical assistance, Etimos Foundation already invested 500,000 USD from its own recourses to sustain TSKI, one of the most hit MFIs. The tool used is Etimos Fund, a specialized investment fund (SIF-SICAV) that aims to reach poor and low-income, excluded from the traditional banking sector,

offering an access to basic financial services.

An integrated and customized social performance and social impact assessment tool has been designed to measure the impact of the overall structure on the short and the long term among the institutions and the final beneficiaries.

### **Discussion with the audience**

Q: How do you decide where to operate? Why didn't you intervene in Haiti for example.

A: Etimos Foundation decided to operate where the socio-economic environment could benefit from a development finance initiative and where some pre-disaster conditions were in place. Some emergencies probably need for a stronger infrastructure and relief intervention, before development finance can successfully operate.

Q: Did you ever consider to develop a social lending platform?

A: Yes, Etimos Foundation consider this opportunity, also as an awareness raising and communication instrument on the topic of development finance toward the general public, but it had to be interrupted due to the Italian (where Etimos Foundation is based) regulatory framework.

Q: Why was crowdfunding an unsuccessful tool in your experience?

A: Probably because crowdfunding need a deep cultural and communication work to be done with the general public, when Etimos Foundation historically operated as a second level organization, dealing more with institutional counterparts.

### **Hot issues to be addressed**

- What role for micro-equity finance in rural environments?
- How are impact-investment decisions driven by appropriate social and environmental reporting?
- How can technological innovation support access to finance in developing countries? How to overcome the limits of large infrastructure investments through smart choices?

### **Further readings**

UNDP. (2013). Livelihoods & economic recovery in crisis situation. New York: UNDP - Bureau for Crisis Prevention and Recovery.

United Nations. (2011). Revealing risk, redefining development - Global assesement report on disaster risk reduction.

Becchetti, L., & Castriota, S. (2007). Fall and recovery. Distruption and cathing up effect after tsunami ona sample of MFI borrowers. Department of Economics, Università Tor Vergata.

Becchetti, L., Castriota, S., Conzo, P., Libralesso, D., & Urbinati, I. (2013). Microfinance in post-emergency contexts: the case of the 2004 Tsunami in Sri Lanka. Etimos Foundation.

# Innovative Technology for Weather Index Insurance Solutions in Order to Enhance Resilience to Climate Change

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## About the author

**Diana Urbani**, currently works at CelsiusPro Switzerland in the areas of Climate Insurance and Microinsurance. Previously, she worked at the Munich Re Foundation on topics related to microinsurance, resilience and sustainability as well as for a microinsurance intermediary in Mexico. Diana holds a Master (MA) in Political Science from the University of Lausanne in Switzerland. Her Master's thesis focused on microinsurance as a global poverty reduction strategy and its local implementation, analysing the case of the G20 and Mexico respectively.

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## Abstract

*Index microinsurance in order to enhance resilience of low income people to weather related events has become increasingly important. However, existing projects do often not go beyond the pilot phase and the need for sophisticated technology as well as comprehensive solutions is still unserved.*

## Microinsurance and climate change

When talking about microfinance we need to bear in mind that even though the term is often used as synonym to microcredit, it is not strictly limited to it. Apart from credits, several products such as savings and insurance are also part of what is known as microfinance (Servet, 2005: 12-20). Insurance becomes even more important in the context of climate change related risks. Low-income people are particularly vulnerable to those risks and are the least able to cope with them. In this sense, microinsurance, understood as the "protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved" (Churchill, 2006:12), plays an important role in order to diminish the negative consequences of risk exposure. It is important to note that all the effects of climate change cannot be insured. For example, the melting of glaciers does not satisfy the insurance principles of unpredictability, calculability and sudden occurrence. However, climate change has also a major impact on weather-related events such as floods or droughts – and these effects of climate change are insurable (Loster and Reinhard, 2012). Yet, only about 20% of the losses from weather-related events have been insured from 1980-2003, this low insurance penetration is also true for the developing world. Nonetheless, innovative index-based microinsurance solutions have been created lately in order to cope with weather-related risks (Aldunce et al., 2012).

## Index insurance as a solution to insure weather-related risks

Apart from traditional, indemnity-based insurance, index-insurance is one possible form of climate insurance. The insurance pays out a predefined amount when a predefined condition is reached, e.g.

when the rainfall level over a certain period falls below the agreed amount. The payment is activated as soon as the index is triggered, thereby an on-site visit of a loss adjuster is not necessary (Roth and McCord, 2008). Thus this solution is of special interest when it comes to microinsurance as it helps to reduce costs significantly. One crucial condition to offer index based insurance is the availability of historical as well as current, ongoing data. Given the fact that especially in developing countries availability of ground-measured weather data is limited, satellite data is getting more and more important (Müller, Ramm and Steinmann, 2014). However, although some index microinsurance schemes already exist, they remain in their pilot stage or have been discontinued since they did not achieve sufficient scale (Loster and Reinhard, 2012). In addition to the common challenges in microinsurance, index insurance faces some more difficulties such as the handling of big weather datasets that need to be treated in an efficient manner for pricing, product design and payout.

## CelsiusPro – a full service provider for weather index insurance

CelsiusPro is a Swiss based weather index and parametric natural catastrophe insurance service provider active across the globe. The company was founded in 2008 and started offering its services to a broad range of weather dependent clients such as energy companies, construction associations and leisure parks. After creating and using its proprietary platform for the own direct business, an online white label solution for insurance companies and microfinance institutions has been developed. The insurance management software includes both connectivity to front-end solutions such as mobile phones as well as back-end services such as automated pricing, execution, policy issuing, transaction management, loss calculation, settlement and reinsurance booking. Hence, CelsiusPro helps to overcome the potential limit of innovative front-end systems for the insurers' interaction with clients but which cannot fulfil their potential because they do not have an effective back-end systems to manage information (Smith, Gerelle, Berende and Chelwa, 2012). In addition to the insurance software CelsiusPro



offers solutions for visualisation and analysis of climate data. Overall, these tools allow to efficiently access and manage big data from all over the world.

### **Enabling local partners to unlock climate insurance solutions**

In addition to requiring sophisticated technology solutions, companies, especially in developing countries, are often lacking internal capacity, market knowledge and financing. Therefore a comprehensive approach is needed. In this sense, the Climate Insurance Fund (CIF) of KfW was created not only to provide financing but also technical assistance to companies based in ODA<sup>1</sup> recipient countries. CelsiusPro was awarded the role of technical assistance facility manager for CIF. The fund's objective is to facilitate the adaptation to climate change by improving access to and the use of climate insurance solutions for micro, small and medium enterprises as well as low-income households. Even though operations only started in January 2015, important experiences can already be shared: (Potential) investees lack access to weather data and in-house capacity to offer climate insurance with a certain independency from development institutions or reinsurers. They have no possibility to visualise big weather data, analyse it and learn how to design insurance products with their own staff. Therefore, they feel that through CIF and CelsiusPro's white label platform they can develop both understanding for climate insurance products as well as ownership of their business. Furthermore, in the context of CIF, throughout product development including feasibility studies, education of end clients and other is implemented together with investees. This, combined with the use of smart technologies, supports sustainable climate insurance products, which go beyond pilot and donor dependent programmes.

### **Discussion**

During the discussion it became clear that people agree on the need of sophisticated technologies to offer climate insurance in an efficient way. If the frequency of extreme weather events and the average risk increase as expected, insurance premium are also likely to increase due to the fact that they are calculated based on historical data. Thus, technology for handling big data (weather data as well as big number of small premiums) is the key to keep premiums low and serve the mass market efficiently. It is a deciding element when it comes to climate insurance and thus enhance resilience to climate change for the low-income people. Last but not least it is important to bear in mind that insurance is not the one and only solution, it has to go hand in hand with complementary mitigation and adaptation strategies if we want to really enhance both food security and resilience to climate change.

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1. Official Development Assistance Countries as defined by the OECD <http://www.oecd.org/dac/stats/daclist.htm>

## References

Aldunce, P., Auld, H., Mechler, R., Miyan, A., Romano L.E. and Zakaria, S. (2012). "National Systems for Managing the Risks from Climate Extremes and Disasters" in Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation – A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge and New York, p. 339-393.

Churchill, C. (2006). "What is insurance for the poor?", in C. Churchill (ed.), Protecting the Poor – A Microinsurance Compendium Volume I. ILO and Munich Re Foundation, Geneva–Munich, p. 12–24.

Loster, T. and Reinhard, D. (2012). "Microinsurance and climate change", in C. Churchill and M. Matul (eds), Protecting the Poor – A Microinsurance Compendium Volume II. ILO and Munich Re Foundation, Geneva–Munich, p. 83–110.

Müller, S., Ramm, G., Steinmann, R. (2014). Agriculture, Microinsurance, and Rural Development. Microinsurance Network Thematic Paper, Luxembourg.

Roth, J. and McCord, M. (2008). Agricultural Microinsurance – Global Practices and Prospects. MicroInsurance Centre, New York.

Servet, J.-M. (2005). "Le besoin d'objectifs principaux nouveaux pour la microfinance : lutter contre les inégalités et faire face aux risques", Techniques Financières et Développement, 78, p. 12–20.

Smith, A., Gerelle, E., Berende, M. and Chelwa, G. (2012). "The technology revolution in microinsurance", in C. Churchill and M. Matul (eds), Protecting the Poor – A Microinsurance Compendium Volume II. ILO and Munich Re Foundation, Geneva–Munich, p. 528–547.

## Further readings

Hazell, P., Anderson, J., Balzer, N., Hastrup Clemmensen A., Hess, U. and Rispoli, F. (2010). The Potential for Scale and Sustainability in Weather Index Insurance for Agriculture and Rural Livelihoods. IFAD and WFP, Rome.

Greatrex, H., Hansen, J., Garvin S., Diro, R., Blakeley S., Le Guen M., Rao K., Osgood, D. (2015). "Scaling up Index insurance for smallholder farmers: Recent evidence and insights.", CCAFS Report No. 14. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Copenhagen.

## Websites

<http://www.celsiuspro.com/>

<http://www.climateinsurancefund.com/home>

# Do not Forget the Big Picture! The Upcoming Planetary Feedback Loop and the Role of “MICRO”

Grammenos Mastrojeni

## About the author

**Grammenos Mastrojeni**, born in Milan 1965, is a career diplomat, currently coordinator for eco-sustainability of Italian development aid. Since the early '90s he was among the first to investigate the relationship between environmental degradation, peace, human rights and security, he anticipated the first official alerts on the climate change – conflicts nexus. He has researched and taught Conflict resolution and Environment and Geo-Strategy in various universities and has authored numerous articles and six books. He collaborates with the Climate Reality Project led by Nobel Laureate Al Gore.

## Abstract

*Climate change is bringing the “Earth system” on the verge of a global shift of paradigm: it is modifying a “global balance” in which mankind is a part, an actor and potentially a victim. A broad political and financial effort is necessary and urgent, but it will be fruitless if it is not declined on concrete territories and on the day-to-day relationship of individuals, families and local communities with their own environment.*

*Marginal gains in efficiency, crucial in order to contain emissions and adapt to unavoidable changes, are higher – given a fixed amount to invest – in communities that do not benefit of up to date and efficient infrastructures and technologies, i.e. in developing countries: local communities and their concrete relationship to real territories are indeed the most natural contexts and targets of micro-finance tools.*

## A true emergency

Towards the end of the 80's a small and visionary group of scientists started cautioning that mankind and the environment shared a common fate in ways much more complex than it was commonly thought. Well beyond the obvious – and yet then misunderstood – links between production and pollution, they started to identify an intimate connection between the state of the ecosystem and the general welfare of mankind, in the framework of a long neglected truth: we are all parts of a global balance that interconnects everything at a planetary scale.

Their intuitions came against the tide: it was a common feeling that mankind and nature were related but not the same, with us “above creation” and entitled to model the Earth according to our vision of a never ending progress and expansion. In that mindset, environmental balance was taken for granted: of course, our experience had been that Mother Earth generally provided it for free so that we did not give it a value. While the environmental side of global balance was taken for granted, in the human sphere balance it had started to be recognized as a value to protect.

In that perspective, fundamental innovations had been injected in human society as a result of the suffering caused by two world wars and the ultimate danger

for mankind posed by the nuclear Armageddon that loomed on us during the Cold War era: itself managed in the terms of a “balance of terror”. Besides that strategic settlement, a series of much deeper and advanced innovations were introduced: basically, the idea that the actors of balance are not only the States but also the populations. It was an extraordinary progress that legitimated an unprecedented mandate given to the top international machinery set up to take care of peace, the United Nations, to face also the socio-economic aspects of human global balance. In other words, it was due to this new awareness if the UN were not only conceived as a Security Council, but mainly aim at a universal satisfaction of basic needs and a universal protection of human rights and dignity: in the name of global human balance, health, nutrition, schools, sanitation, welfare, just income distribution and much more became the 20th century recipe for peace.

But all this happened while we felt “above nature”, so that we systematically forgot the ecosystem in our balance equations, and siloed goals of economic growth. Economic expansion is not in itself incompatible with balance, both human and environmental; on the contrary, it is probably the way to grant progressive universal sustainability, once we manage growth in the awareness of global balance. But so far we did not and nowadays the awareness of global interconnectedness has been forced unto us by threats like climate change. We are now obliged to admit that our millennium development goals were too simplistic and we are negotiating the formula of new “sustainable development goals”, with the Post 2015 Development Agenda. We are now compelled to take into account the fact that environmental disruption is linked to food insecurity, State collapses, migrations and so on. We are finally reading even on the New York times that a tragedy like ISIS has some roots in the unusual droughts that hit Syria in the four years that preceded the insurrection, that Lake Chad shrinking has something to do with Boko Haram, and examples could be multiplied indefinitely: to the point that we are now facing a serious and imminent global shift in planetary balance that threatens to take the form of a single, gigantic – planetary scale - and tragic positive feedback loop cycle where both human and natural components of the ecosystem could concur

in making our mother Earth a barren inferno. It's only normal: we forgot about it, but we are indeed part of the ecosystem and we are naturally induced to react accordingly.

As the overall rapidly degrading situation forces us to stop reasoning sector by sector we are giving ourselves the instruments to analyze and manage our common home Earth as a global balance sustained by a collection of interlinked sub-balances. What we are realizing is that local or sectorial unbalances, beyond critical thresholds, tend to impact other balances and can spread at an ever accelerating pace to the whole system. Climate change and its feared tipping points – permafrost melt and consequent methane release, albedo feedback loops, etc. – are becoming more well known to the public. Yet, fearsome as they are, they are nothing compared with the big picture that emerges once we put together the intricate series of interlinked environmental and human unbalances that we have pushed to the verge of a tilt towards catastrophically accelerating cumulative cycles.

If we look exclusively at the ecosphere, global warming comes together with ocean acidification and a biodiversity loss that is already occurring at an unprecedented pace: they are not time coinciding isolated dynamics, they are alarmingly and cumulatively interacting faces of one and single human choice that is making the whole system fragile. It looks very much like a playing cards castle from which we have started to extract cards: a sturdy and well built one, that resists as a whole at the beginning but that, once we go too far, will fatally enter an ever faster disruption of contiguous structures until it reaches a general collapse, or transitions to a new balance that could possibly prove not really hospitable for mankind.

It is generally feared by the scientific community that we are either too close or even beyond many of these natural tipping points. But we have to look at an even bigger picture, and we cannot consider exclusively the ecosphere as though we were not part of it, because we represent one of its sub-balances and will fatally be conscripted in the cycle of global destruction if we do not react quickly: at least, quickly enough to remain capable of rational collective countermeasures before growing scarcity pushes us all into a general state of competition and conflict.

Scenarios of this kind are growing increasingly likely and are forecasted – with a certain degree of approximation – as near in time: be it a scientifically sound projection, a metropolitan legend or a strategist's nightmare, we are all hearing about the 2030 perfect storm.

### **Macro, micro, and the need for swift action**

The huge scope of the challenge instinctively prompts global macro actions, international coordination, and public commitment: they are all too necessary, but they cannot overshadow the fact that the environment is a concrete reality, one that concrete communities manage day to day. And if some dangerous CO<sub>2</sub> emissions are born of highly organized industrial

scale sectors – like energy - many others come as a result of summing up local mismanagements of one specific factor: land. The sum of emissions due to wrong agricultural practices and deforestation is very significant.

Big organized markets can respond to macro-policies but, with respect to land, these have to become instrumental to a responsible management by micro-actors especially in poor countries where, with limited investments, great gains in efficiency and savings in CO<sub>2</sub> emissions can be achieved. The focus is on the poor regions, where we need to encourage action by micro-actors because large scale land uses are generally disruptive. Furthermore, no matter what the originating patterns of environmental modification are – if they primarily concern, climate, water, glaciers, biodiversity or else – how they reflect on the capacity of soils to provide services represents the fundamental mechanism of involvement of mankind in a potential cycle of instability, societal collapse, and conflict, that will in turn lead to even greater ecosystem failures. The good side of this central and fundamental link between humanity and land is that it could work also in the opposite direction: chances are that protecting soils could trigger a general peace, stability and ecosystem recovery cycle, extending far beyond soils themselves. Because recovering soils and applying good agricultural practices means building large and renewable carbon sinks and biodiversity havens.

Land is so directly relevant to mankind that it is only normal for it to be frequently a delicate political and economic issue; it represents the basic interface between nature and production, as it serves as the most immediate and concrete value extracting context. At the same time and for the same reason, human relationship with soils is so primary, deeply rooted and spontaneous that:

- practical protection and recovery interventions are generally within the reach of less organized, technologically endowed, or rich communities;
- results are generally short term and visible, readily understandable by socially and educationally less sophisticated groups, making it easier for them to subscribe to individual, family scale, and larger collective initiatives;
- as a result, in many contexts effective interventions do not need to be large scale and supported by top-down, complex and costly organization;
- almost every community has a portion of degraded lands that have become marginal on the market, and thus accessible for socially and environmentally oriented interventions without a political or economic competition too unrealistic for non-dominant subjects; but, globally summing up these surfaces, the protection or restoration of their vitality could make a crucial difference for planetary balances.

In other words, land presents itself as an accessible mean of synergic empowerment for both nature and human communities, both concurring in long term

sustainability.

This is within reach, and a potentially quick strategy. One element is missing, a fundamental enabling condition: small scale security allowing the poorest to plan for the future, and locally viable means of investment. It has a name: microfinance.

## References

- 2nd Climate Vulnerability Monitor, Madrid (DARA), 2012.
- Adapting to climate change - SOER 2010 thematic assessment, Copenhagen (EEA), 2010.
- A Decent Life for All: Ending Poverty and Giving the World a Sustainable Future, Bruxelles (Commissione Europea), 2013.
- A National Strategic Narrative, Washington D.C. (Wilson Center), 2011.
- A New Climate for Peace, Bonn (Adelphi et al.), 2015.
- Agriculture and Climate Change: A Prairie Perspective, Toronto (International Institute for Sustainable Development), 1997.
- Bridging the Emissions Gap: A UNEP Synthesis Report, New York (UNEP), 2011. Climate Change: Adaptation and Mitigation in Development Programs, Washington D.C. (World Bank), 2010.
- Climate Change and the Financial Services Industry, Nairobi (UNEP), 2002.
- Climate Change and International Security – Paper from the High Representative and the European Commission to the European Council, Bruxelles (UE), 14 marzo 2008.
- Climate Change Vulnerability Index 2011, Bath (Maplecroft), 2011.
- Climate Change Vulnerability Index 2012, Bath (Maplecroft), 2012.
- Climate Change and its Possible Security Implications, Report of the UN Secretary General to the General Assembly, New York (U.N.), 2009.
- Climate in the 21st Century, Cambridge (WMO), 2003.
- Climate Migration Gains the World's Attention, Washington D.C. (U.S. State Department), 2011.
- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions - An EU Strategy on adaptation to climate change, Bruxelles (Commissione Europea), 2013.
- Conflict and the Environment: Proceedings of the NATO Advanced Research Workshop, Dordrecht (NATO/Kluwer), 1997.
- Conflict Barometer, Heidelberg (Heidelberg Institute for International Conflict Research), 2010.
- Cost of implementing methodologies and monitoring systems relating to estimates of emissions from deforestation and forest degradation, the assessment of carbon stocks and greenhouse gas emissions from changes in forest cover, and the enhancement of forest carbon stocks. Technical paper, Bonn (UNFCCC), 2009.
- The Development of Environmental Indicators and Contribution to Green Accounting, Copenhagen (EEA), 1995.
- Economics of Adaptation to Climate Change, Washington D.C. (World Bank), 2010.
- Environmental Refugees, Nairobi (UNEP), 1985.
- The Environmental Dimension of Security in the Horn of Africa: The Case of Somalia, Nairobi (UNEP), 1991.
- Environmentally-induced Population Displacements and Environmental Impacts Resulting from Mass Migrations, Ginevra (IOM), 1996.



## References

- Environment and Security in an International Context, Bruxelles (NATO/CCMS Pilot Study Report n. 232), 1999.
- Environnement fragile, Etat fragile: conflits, crises et changements climatiques, Enviro Security Assessment – Congo Basin, Africa, The Hague (Institute for Environmental Security), 2009.
- Enviro Security Assessment – Great Lakes, Africa, The Hague (Institute for Environmental Security), 2005-2009.
- Enviro Security Assessment – Horn of Africa, The Hague (Institute for Environmental Security), 2011.
- From Conflict to Peacebuilding : The Role of Natural Resources and the Environment, Nairobi (UNEP), 2009.
- Funding adaptation in developing countries: extending the share of proceeds used to assist in meeting the costs of adaptation; and options related to assigned amount units of Parties included in Annex I to the Convention. Technical paper, Bonn (UNFCCC), 2008.
- The Future We Want (Outcome Document of the Rio + 20 UNCSD Conference), Rio de Janeiro, 2012.
- Global Environment Outlook – 4, New York (UNEP), 2007.
- Global Trends 2025, Washington D.C. (National Intelligence Council), 2008.
- Global Trends 2030: Alternative Worlds, Washington D.C. (National Intelligence Council), 2013.
- Green Economy – Why a Green Economy Matters for the Least Developed Countries, New York (UNEO, UNCTAD, UN-OHRLS), 2011.
- Health in the Green Economy: Health Co-Benefits of Climate Change Mitigation, Ginevra (OMS), 2011.
- Identification and implementation of medium- and long-term adaptation activities in least developed countries. Technical paper, Bonn (UNFCCC), 2011.
- The Impact of Climate Change on Insurance against Catastrophes, Sidney (Insurance Australia Group), 2003.
- IPCC Fifth Assessment Report, Bonn (IPCC), 2013/14.
- Land Use, Land-Use Change and Forestry, IPCC/Cambridge University Press, Cambridge, 2000.
- Livelihood Security: Climate change, conflict and migration in the Sahel, New York (UNEP), 2011.
- North Africa: The Impact of Climate Change to 2030, Washington D.C. (National Intelligence Council), 2009.
- North Africa: The Impact of Climate Change to 2030- Geopolitical Implications, Washington D.C. (National Intelligence Council), 2009.
- Physical and socio-economic trends in climate-related risks and extreme events, and their implications for sustainable development. Technical paper, Bonn (UNFCCC), 2008.
- Policy Options and Possible Actions to Expedite Implementation: Climate Change – Report of the Secretary General, U.N. Economic and Social Council – Commission on Sustainable Development, New York, 2007.
- Potential costs and benefits of adaptation options: A review of existing literature. Technical paper, Bonn (UNFCCC), 2010.
- Reaping the Rewards – Financing Land Degradation Neutrality, Bonn (UNCCD), 2015.
- Scaling up ecosystem benefits - a contribution to The Economics of Ecosystems and Biodiversity, Copenhagen (EEA - TEEB), 2010.
- Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication – A Synthesis for Policy Makers, New York (UNEP), 2011.
- World Development Report 2010 – Development and Climate Change, Washington D.C. (World Bank), 2010.
- H. Fountain, Researchers Link Climate Change to a Drought Made Worst by Climate Change, New York (New York Times), March 2, 2015.

# The Use of Cash Transfer in Enhancing Food Security and Resilience in the Sahel: The Case of Niger

Nourou Macki Tall

## About the author

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This paper was prepared with the support of **Alexis Bonte**, regional resilience coordinator, FAO.

## Abstract

Cash transfer activities have been introduced in Niger in the framework of reducing risk and vulnerability to droughts and malnutrition. The cash transfer conditional or not can contribute to support adaptive capacity (natural resource management and/or climate change adaptation), absorptive capacity (meeting the immediate food and other basic needs) and transformative capacity (adoption of good climate smart agriculture or nutritional practice) of the vulnerable households and their environment. The strengthening of persons, communities and countries' food security, climate change adaptation and resilience will require comprehensive social, financial and environmental investments that enable to absorb loss, minimize impact and build back better.

## Vulnerability, food insecurity and malnutrition on the rise

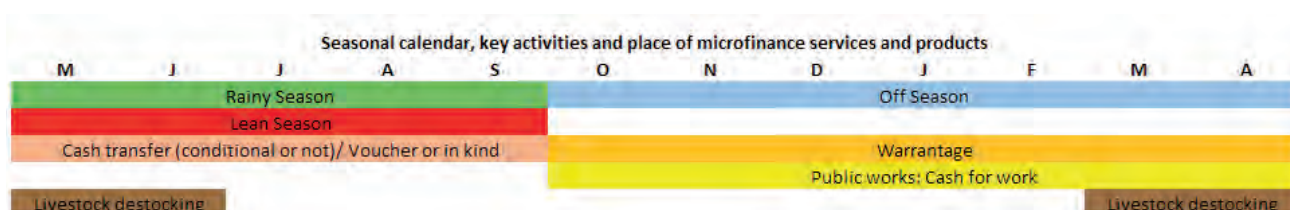
Niger, one of the poorest countries in the world, is a landlocked country located in the Sahel with an estimated population of 17 138 707 inhabitants in 2012 (General population census, 2012). Rural subsistence agriculture (70% of active population) and animal husbandry dominate Niger economy. The high population growth rate, the low level of education, gender inequality and the insecurity in the sub region (Libya, Mali, Nigeria) are also additional burdens to the

development of the country.

Climatic variations are pushing the republic of Niger towards a chronic vulnerability to food and nutritional insecurity associated with recurrent agricultural and pastoral deficits. During the last decade, the country has recorded 3 major food crises: 2004/2005, 2009/2010 and 2011/2012, which significantly weakened the livelihoods means of small producers. This results in severe food and nutrition crisis and alarming national prevalence of global acute malnutrition among children 6-59 months. Agriculture and livestock are entirely depending on the only precarious raining season of the year. Climatic hazards, drought, flood and locusts outbreaks are recurrent with direct effects on agricultural domestic production. Hence, household's livelihood suffers from malnutrition, food insecurity, decapitalization and debt.

An estimated two million people are chronically food insecure and unable to meet basic food requirements even under normal conditions. This vulnerability to food insecurity is mainly determined by the options available to households (individuals, communities) for making a sustainable living (Alinovi et al, 2009). This includes assets accumulation, income access and diversification, market and non-market institutions, and public service provision.

**Figure 1: Seasonal calendar and place of microfinance products and services**



### **Cash transfer to build assets and diversify the incomes**

During the 2010 food crisis, FAO, through its cooperating partners, carried out cash for work activities during the pre-lean season period (March-May) and unconditional cash transfer during the planting period (June). The cash for work was very relevant to support natural resource management and climate change adaptation activities such as dune fixation, land restoration, replanting etc. The unconditional cash transfer in June was coupled with the distribution of improved short cycle variety seeds for food production (within 3 months). It is a good example of productive safety net where the cash is responding to the immediate food needs, avoid shortage of on farm labour (people selling their workforce to others instead of working in their own farms), support socio-economic investments and the seeds provided will support food production in a three months period.

The cash transfer can also be used to prevent herder's losses. In this case, herders are offered an attractive price in order to be able to recapitalize their assets if the situation comes to a normal.

The activities contributed to foster the local economy and enhance the food security of vulnerable people by providing income for immediate food access and other essential needs including for women and youth.

The cash for work specifically supported the reclamation/restoration of degraded lands with the plantation of *Acacia senegal*, *Acacia raddiana*, *Ziziphus mauritiana*, *Mucuna pruriens*.

The destocking of animals prevented pastoralists to sell their animal at a very low Price (5 Euro for cattle in certain area).

### **Increased accountability of the funds**

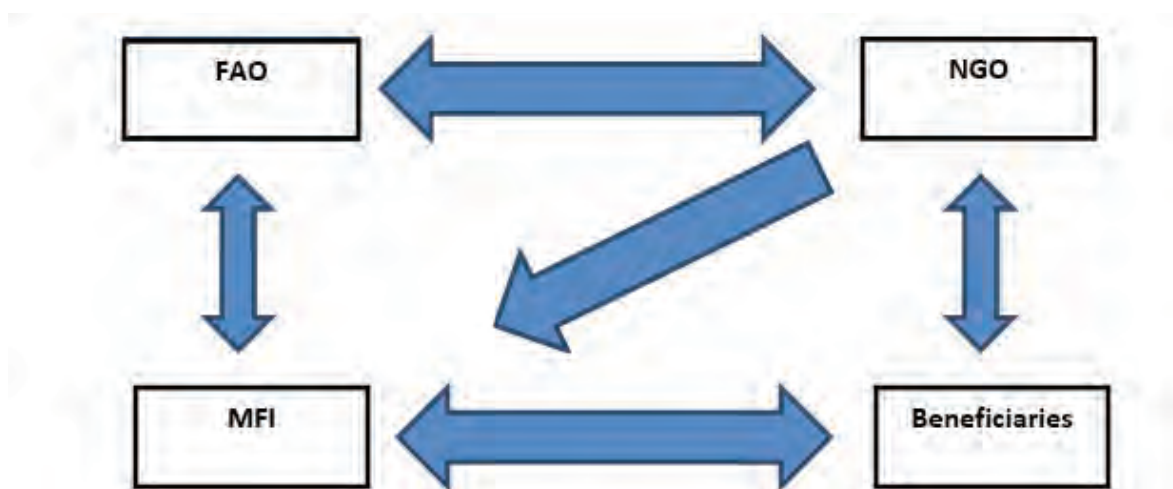
Microfinance institutions were used to fulfill the payment to the beneficiaries.

In the old system the implementing NGO controlled the distribution of the funds, prepared lists of beneficiaries, oversaw the rehabilitation works in the case of a cash for work scheme, paid beneficiaries and submitted reports to FAO.

In order to enhance separation of duties and accountability for activity funds, microfinance institutions were introduced to ensure the beneficiaries receive the intended cash payment. Two contracts were prepared. The first one with the implementing partner (NGO) to mobilize the communities, identify the infrastructure to be rehabilitated in close collaboration with relevant national technical services, select the beneficiaries according to defined criteria and supervise the implementation of works. The second contract with the MFI, identified through relevant performance criteria, to handle the payments directly to beneficiaries. Both parties account for the funds to FAO.

At the end of the exercise the MFI will have collected the certified payment forms which he presents to FAO to account for the funds he advanced as payments to beneficiaries. Based on request by the MFI and certification by the partner NGO, FAO reimburses an equal amount of money to the MFI, adding reasonable fees for the services rendered. The MFI can use the cash payment opportunity to sensitize and foster financial inclusion of the vulnerable households in their savings and loans products and services.

**Figure 2: Cash transfer with MFI in charge of payment**



## Discussion

An important point rose during the workshop is the perception of the beneficiaries vis à vis the microfinance role. First of all, it should be noted that Microfinance refers to broad array of financial products (savings, payment transfers, credit, and insurance) specifically designed to meet the needs of low-income households and small-scale businesses, both in urban and rural areas (Röttger, D. 2013). Furthermore, putting together MFI and vulnerable households including women particularly in remote areas can play a pivotal role in their financial inclusion.

## Concluding remarks

Risk and vulnerability contribute to poverty directly, e.g. through the depletion of productive assets from bad weather, but also through the response of poor households to risk (Barrientos, A. & Shepherd, A, 2003).

Investing in cash transfer only will not be enough. We need to consider an approach for women and farmers groups to strengthen their food security and resilience, integrating social, technical and financial capacities. Financial skills and opportunities are critical to create income for asset acquisition and diversification, improving the purchasing power of households, and building savings or contingency funds, in particular for women who generally have less access than men to productive assets and services.

This is the nexus of the FAO "Caisses de Résilience" (CdR) approach. It is an integrated community-centred , linking social, technical and financial dimensions in a mutually reinforcing way. The direct objective of CdR through the combined efforts of the three dimensions is to diversify and accumulate assets, two key sources for increasing resilience of livelihoods at household and community levels.

## References

Alinovi, L; Mane, E; Romano, D. (2009): Measuring household resilience to food insecurity; application to Palestinian households, EC-FAO Food Security Programme Linking Information and Decision Making to Improve Food Security [www.foodsec.org](http://www.foodsec.org)

Barrientos, A. and Sheperd A. (2003): chronic poverty and social protection, Paper prepared for presentation at the CPRC Conference on Chronic Poverty, University of Manchester

FAO (2012): Policy on cash based transfers

FAO (2015): A case for resilience: caisses de resilience

Organisation Nigérienne pour la Défense de l'Environnement et des ressources naturelles (2010): Mission de Suivi/évaluation des Activités de Récupération des Terres Dégradées par le Cash for Work (evaluation work commanded by FAO Niger)

Röttger, D (2013): Agricultural finance for smallholder farmers-rethinking traditional microfinance risk and cost management approaches, University Meets Microfinance, Vol.11

# Take-up of Weather Microinsurance: Theory and Insights from East Africa and France

Yann Gelister

## About the author

**Yann Gelister** is a microinsurance specialist who worked with Grameen Credit Agricole Microfinance Foundation until July 2015. Yann has experience working on health and agricultural insurance schemes in Tanzania, Cameroon and Malawi.

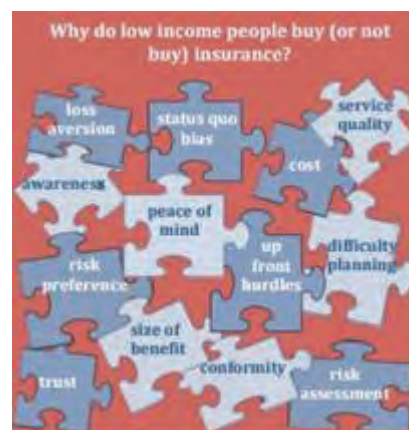
## Abstract

As part of the 12th "University Meets Microfinance" Workshop held at the University of Bergamo on 12 June 2015, Grameen Crédit Agricole Microfinance Foundation contributed to discussions by examining questions pertaining to the take-up of weather microinsurance. Under this thematic area, a presentation on the links between theories of demand and experience from the field was made.

## Article

The theoretical dimension was largely drawn from papers widely circulated in the microinsurance space, whilst the practical component of the presentation called on the experience of three companies that either partner with or are well known to GCAMF. These companies are Weather Risk Management Services Ltd, an entity aiming "to be the world's No. 1 climate management company that uses data, technology and financial services to transform climate related challenges into business opportunities"<sup>1</sup>, and deeply involved in the Indian agri-insurance sector; ACRE Africa, "the largest agricultural insurance program in Kenya - and Africa - and the first agricultural insurance program worldwide to reach smallholders using mobile technologies"<sup>2</sup>; and Pacifica Assurances, the non-life insurance wing of Crédit Agricole Bank and first to pioneer index based insurance for pastures/forage in French agriculture.

Before delving into theoretical determinants of demand, the following diagram from the MILK briefs<sup>3</sup> was deemed to be instructive:



It was suggested to the audience that the commonly held assumption that 'insurance is not purchased, it is sold' needed to be qualified, largely because it presupposes an absence of genuine demand from farmers. In qualifying this statement, it was suggested that demand needs to be assessed theoretically from 3 dimensions – including supplier characteristics, products design, and the client situation and cultural dimension – and not extrapolated from insights derived from studies on willingness to pay, a theoretical framework judged overly optimistic as an indicator of demand by De Bock and Gelade (2012).

In the area of supplier characteristics, the chief areas impacting on demand for agri-insurance products include, inter alia, the ease of transaction for farmer in purchasing insurance; the level of financial literacy and the ability of insurers/brokers to simplify contracts for ease of understanding; the degree of trust at all levels of a transaction, itself informed by client familiarity with the point of sale, the extent to which local community representatives vouch for the insurance product, and the memory of recent experiences (good and bad) of insurance in the community; and finally, the existence of supplier incentives for their staff to sell microinsurance (Cai et al, 2009).

On the question of product design, two key factors are prominent in explaining demand according to studies. First, the pricing of insurance is key, particularly when assessed through the lens of utility maximisation. In the area of pricing, a farmer's assessment of opportunity costs in purchasing insurance, as well as his/her wealth, are crucial. Secondly, the level of product coverage is also important, with claims payout frequency, the

1. <http://www.weather-risk.com/company.aspx>

2. [http://www.ifc.org/wps/wcm/connect/industry\\_ext\\_content/ifc\\_external\\_corporate\\_site/industries/financial+markets/retail+finance/insurance/agriculture+and+climate+risk+enterprise](http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/retail+finance/insurance/agriculture+and+climate+risk+enterprise)

3. McCord et al, MILK Brief #7: A Microinsurance Puzzle: How do Demand Factors link to Client Value?, 2012



level of basis risk, and alignment of product features with client needs either driving client demand up or down.

Insofar as client situation and the cultural dimension are concerned, the interesting factors affecting demand include education and the availability of irrigation, with the latter unexpectedly be correlated with higher take up. Age, particularly old age, are associated with a higher desire to benefit from insurance. Factors that had little relevance to demand included gender and the size of households.

Following the insights from the academic world, actual experience from the 3 companies mentioned earlier confirmed the importance of products and processed being aligned with farmer needs, as well as the ease of transaction. It also emerged that recency bias, particularly the memory of the last 3 cropping seasons, is an important determinant of demand. Not mentioned in the theoretical analysis that was researched was the issue of whether a agri-insurance product in bundled with other products directly sought after by a farmer, including credit and/or contracting farming products such as fertiliser or inputs. Indeed, these products drive up purchase of insurance, especially when it is sold as a mandatory product alongside them. Finally, farmer education in France was key in making farmers aware enough of the value of insurance, so much so that it was the farming community alongside the MoA that made a direct request for insurance solutions, index-based or other, to be developed.

### **Concluding remarks**

It was hypothesised that one of the most important missing ingredients in the activating demand was the general absence of state involvement, both through subsidies and public policies conducive to an enabling environment for agricultural insurance take up. Without a greater involvement of the public sector in support of private initiatives, scale, and a the unlocking of demand across national smallholder farming communities, will likely remain elusive.

### **References**

- Greatrex H, Hansen JW, Garvin S, Diro R, Blakeley S, Le Guen M, Rao KN, Osgood, DE. 2015. Scaling up index insurance for smallholder farmers: Recent evidence and insights.
- Cole, S., X. Gine, J. Tobacman, P. Topalova, R. Townsend, and J. Vickery (2011), "Barriers to household risk management: Evidence from india."
- De Bock, O.; Gelade, W. 2012. The demand for microinsurance: A literature review
- McCord et al, MILK Brief #7: A Microinsurance Puzzle: How do Demand Factors link to Client Value?, 20

# The Role of Collective Action in Shaping the Value Chain Governance: Lessons from Farmers' Collaboration in Chad

Stefano Corsi and Luigi Orsi

## About the authors

**Stefano Corsi** is an assistant professor at University of Milan. PhD in agricultural economics. His research focus is on value chains analysis in developing countries. He is involved in several international projects and he is research unit leader in FP7, EuropAid and national projects.

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## Abstract

*Smallholder farmers in Chad are facing economic challenges and structural limitations to enhancing their market performance. 40 Chadian farmers were surveyed in 2015 to understand which drivers, mediated by the role of collective action, might boost the smallholder market performance. This study demonstrates the fundamental role of collective action in strengthening the Chadian farmers' performance, but it also highlights that there is still a gap to be filled between the collective action possibilities and the farmers' needs in shaping a well-structured value chain. The study is part of the EU Project "Peanut and sesame food chain support: from production to marketing" led by COOPI.<sup>1</sup>*

## Introduction

In African countries, as in other parts of the developing world, agro-food supply chain and their actors are facing important challenges in front of significant changes in economic, environmental, and social context (Markelova and Mwangi, 2010).

The recourse to the use of farmer cooperation and collective action is not new and continues to be sponsored by policy makers and practitioners all over the world as a valid growth strategy, especially for Africa, since agricultural development is linked with the smallholders' ability to produce and commercialize their products (Bernard and Spielman, 2009; Markelova and Mwangi, 2010).

The primary aim of this study is to pinpoint the underlying drivers that enable small farmers to increase their market performance. Precisely, we aim to examine the extent to which certain characteristics, such as the role played by the associations in shaping the social context, facilitate collective action initiatives to improve smallholders' market performance.

Our approach is based through an analysis of an aid programme in the Chadian agro-food value chain, which aims to increase smallholder farmers' output, and improve farmers' marketing performance by enhancing their levels of collaboration, learning, access to inputs and outputs, productive competences and social and relational capital.

## The role of collective action in transforming the agro-food value chain

Marshall (1998) defines collective action as an action taken by a group (either directly or on its behalf through an organization) in pursuit of members' perceived shared interests. These commonly shared goal actions can enable African farmers/producers to take advantage of the changes in the global value chains and deal with existing market imperfections.

Generally, the agro-food value chain in developing countries is "captive" (Gereffi, 2005) and it is characterized by high levels of influence of powerful multinational firms from the trading, processing, manufacturing, and commercial domains (Pimbert et al., 2001).

Understanding how collective action can face market inefficiencies, barriers to market access or coordination problems and how farmers' cooperation can transform the structure of the agro-food value chain from 'captive' to 'relational' is particular important (Gereffi, 2005).

The literature on collective action in shaping the governance of the value chain has identified important factors. These main drivers are group composition and farmers' characteristics, the level of cooperation inside and outside the organization, the role played by training and learning, the relational competences and the social context/structure (social capital and the relations with other actors in the supply chain), the access to input, information and output, the sectoral policies and external environment, among others, which influence successful cooperation around resource management. It has shown that effective local collective action that was built with consideration of these factors can indeed be a useful approach for the poorer resource-dependent communities to sustainably manage their resources, generate marketable surplus, improve market performance

1. COOPI is an independent non-governmental organization, founded in Italy in 1965, committed to fight against social injustice and poverty in the developing countries.

and, as a virtuous consequence, improve their position in the value chain (Markelova et al., 2009; Barham and Chitemi, 2009; Trebbin and Hassler, 2012).

### Background on aid programme, preliminary findings and conclusion

This project is part of the Development Support Program for Local & Natural Resource Management (PADL-GRN). The European Union is committed to strong cooperation with Chad in the fields of good governance, economic growth and the fight against poverty through an approach based on the agro-food value chain actors for local development, shared management of natural resources and support to most vulnerable people. PADL-GRN receives funding from the 10th European Development Fund (EDF) nearly 32 million euros for a period of 6 years from. Its objectives are to improve the living conditions and food security of rural populations and strengthen the participatory dynamics of local development and natural resource management.

Within the program PADL-GRN, the "Peanut and sesame food chain support: from production to marketing" project led by COOPI involves thirty producer organizations (POs) and each PO is made of about 40-50 farmers. The POs have been supported during the soil preparation and processing phase, in the picking, storage and marketing activities of products such as peanut and sesame. The project will focus its actions in the development of relationships between actors in the agro-food supply chain.

Our analysis is based on material collected from smallholder farmers in 14 Chadian villages (Abchour, Amkharuba, Amsatarna, Ardilik, Gagna, Ganachour,

Gandoyan, Gassirè, Gourou, Gouroukoune, Koubigou, Koutoufou, Sanour and Tcharaw) including 9 different ethnic groups in the region of Sila (far east of Chad) during the period March 2015 – June 2015. In this preliminary phase, 40 questionnaires were submitted to farmers belonging to producer organizations managed by COOPI. Multi-item scales are used and measured by 5-point Likert scales (ranging from 1 = 'lowest rating for the question' to 5 = 'highest rating for the question').

Our empirical results are reported in Table 1. We show that the role of collective action seems to be very important in the upstream stages of the value chain. Especially, the associations play a key role in the farmers' training phase (see Table 1 – training), for the access to production inputs and for the access to services (see Table 1 – input and services). The training phase has been performed by COOPI on several aspects including soil preparation (4,85), seeding (4,88), plantation management (4,78), harvesting (4,75), storage (4,78) and commercialization (3,70). These elements have led to enhanced efficiencies in the production phase and, consequently, they have led to a significant improvement in the market performance.

The farmers' involvement seems to be a critical factor with large potential for improvements. In particular, our results (see Table 1 - involvement) show a very low collaboration rate with other actors in the supply chain (1,70) and a neutral score on the cooperation with other farmers (3,05). These issues, if not dealt properly, can lead to increased transaction costs and a high level of information asymmetries. Furthermore, another critical aspect is represented by the access to the outputs provided by the farmers' association, especially related to processors, retailers and

**Table 1: farmers' perception on the listed items (Likert scale 1-5)**

	Items	Mean	Median	St. Dev.	Min	Max	Obs.
involvement	How frequently are you involved in <b>meetings</b>	4,25	5	1,19	1	5	40
	How frequently are you involved in <b>trainings</b>	3,58	4	1,62	1	5	40
	How frequently are you involved with <b>other farmers</b>	3,05	4	1,66	1	5	40
	How frequently are you involved with <b>other actors</b>	1,70	1	1,20	1	5	40
training	How much do you think it is important the role played by trainings in <b>soil preparation</b>	4,85	5	0,36	4	5	40
	How much do you think it is important the role played by trainings in <b>seeding</b>	4,88	5	0,33	4	5	40
	How much do you think it is important the role played by trainings in <b>plantation management</b>	4,78	5	0,58	2	5	40
	How much do you think it is important the role played by trainings in <b>harvesting</b>	4,75	5	0,63	2	5	40
	How much do you think it is important the role played by trainings in <b>storage</b>	4,78	5	0,58	2	5	40
	How much do you think it is important the role played by trainings in <b>commercialization</b>	3,70	4	1,44	1	5	40
input	How important is the role of the association to assure the access to <b>seeds</b>	4,83	5	0,38	4	5	40
	How important is the role of the association to assure the access to <b>equipment</b>	4,65	5	0,83	1	5	40
	How important is the role of the association to assure the access to <b>crop protection</b>	4,80	5	0,46	3	5	40
services	How important is the role of the association to assure the access to <b>agricultural activities</b>	4,63	5	0,74	2	5	40
	How important is the role of the association to assure access to <b>storage</b>	4,15	4	0,86	2	5	40
	How important is the role of the association to assure access to <b>products' transport and delivery</b>	3,08	3,5	1,44	1	5	40
output	How important is the role of the association to assure access to <b>local intermediaries</b>	2,65	2	1,42	1	5	40
	How important is the role of the association to assure access to <b>retailers</b>	2,28	2	1,22	1	5	40
	How important is the role of the association to assure access to <b>processors</b>	1,73	1	1,01	1	4	40
	How important is the role of the association to assure access to <b>local markets</b>	3,28	4	1,26	1	5	40
	How important is the role of the association to assure access to <b>international markets</b>	1,05	1	0,22	1	2	40
performance	Have you noticed any improvement referring to <b>production quantity</b>	4,63	5	0,74	2	5	40
	Have you noticed any improvement referring to <b>production quality of peanuts</b>	4,28	5	1,01	1	5	40
	Have you noticed any improvement referring to <b>production quality of sesame</b>	4,20	5	1,02	1	5	40
	Have you noticed any improvement referring to <b>profit</b>	4,59	5	0,50	4	5	39
	Have you noticed any improvement referring to <b>variety</b>	3,95	4	0,89	3	5	39

international markets (see table 1 – output). This criticality precludes the possibility to jump into high value markets allowing rural producers to better compete with larger farmers and incumbents.

Finally, in spite of several criticalities previously highlighted, the significant progress in trainings and in the access to production inputs allowed a substantial increase in the farmers' performance, especially, as regards the quantity produced, but also with respect to quality and profit (see Table 1 – performance). In fact, almost all of our respondents noticed 'good' or 'very good' improvements in comparison with the previous year's performances related to quantity (4,63), quality of peanuts (4,28), quality of sesame (4,20), and value added by harvesting (4,59).

In the near future, the opportunity for smallholder farmers to raise their incomes and profits will mainly depend on their ability to participate successfully in the markets. Consequently, the focus on the role of collective action has broadened from building up farmers' production capabilities to facilitating farmers' access to markets (Shepherd, 2007).

Thus, market access proponents make a strong case that, for small farmers to thrive in the global economy and to enter in a relational value chain, it is necessary to create an entrepreneurial culture in rural communities (Lundy et al., 2002). This means shifting the focus from only production-related programs to more market-oriented interventions (Barham and Chitemi, 2009).

## References

- Barham, J., & Chitemi, C. (2009). Collective action initiatives to improve marketing performance: Lessons from farmer groups in Tanzania. *Food Policy*, 34(1), 53–59.
- Bernard, T., & Spielman, D. J. (2009). Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy*, 34(1), 60-69.
- Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of international political economy*, 12(1), 78-104.
- Lundy, M., Ostertag, C., Best, R., 2002. Value adding, agro-enterprise and poverty reduction: a territorial approach for rural business development. Rural Agro-Enterprise Development Project Paper. CIAT, Cali, Colombia.
- Markelova, H., & Mwangi, E. (2010). Collective action for smallholder market access: evidence and implications for Africa. *Review of policy research*, 27(5), 621-640.
- Markelova, H., Meinzen-Dick, R., Hellin, J., & Dohrn, S. (2009). Collective action for smallholder market access. *Food policy*, 34(1), 1-7.
- Pimbert, M. P., Thompson, J., Vorley, W. T., Fox, T., Kanji, N., & Tacoli, C. (2001). Global restructuring, agri-food systems and livelihoods. International Institute for Environment and Development.
- Shepherd, A. W. (2007). Approaches to linking producers to markets: A review of experiences to date (Agricultural Management, Marketing and Finance Occasional Paper 13). Rome: Food and Agriculture Organization of the United Nations.
- Trebbin, A., & Hassler, M. (2012). Farmers' producer companies in India: a new concept for collective action? *Environment and Planning-Part A*, 44(2), 411.



## Closing Remarks

Davide Castellani

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### *Introduction – Microfinance and Climate Change*

The base of the pyramid is strongly impacted by food insecurity and climate change. As suggested by **Grammenos Mastrojeni**, changes in the environment, and so in the size and quality of natural resources, are correlated with development, peace and human rights. He points out that the poor would enjoy huge cost-saving and productivity benefits from abandoning the old “micro” technologies and adopting new “micro” (eco-friendly) innovations. This idea was also put forward by **Adrian Fenton**. The goal of the **12th UMM workshop** was to discover how innovative microfinance services and approaches can play a role in promoting the ability of smallholders and poor households in developing countries to: mitigate the economic impacts of climate change and increase food security and resilience to extreme weather events. Through appropriately designed financial services, microfinance can foster the accumulation of assets, the adoption of economic activities such as agroforestry, silvopasture and organic farming or provide index-based insurance against weather-related risks. However, in some cases, there is a strong need for technical capacity and sophisticated technology, or there is even an absence of demand from the poor. These gaps can be filled primarily through the financial and technical support of governments and donors. Also microfinance institutions can themselves be affected by natural hazards and so, be constrained in their capacity to provide financial services. This issue can be addressed by developing ex-ante and ex-post strategies. Ex-ante strategies include, for instance, weather insurance linked to the loan portfolio, technical assistance, skills trainings for clients, or community socio-economic development projects. Ex-post strategies can include the recapitalization of the affected institutions or rotating funds to restore the operational capacity.

### *Food Security and Microfinance*

Most agricultural systems in developing countries are rain-fed and therefore, fragile and exposed to rainfall shortages. Besides, tiny and inefficient agricultural markets lead to high volatility in crop prices. In Niger, for example, 2 million people per year are food insecure because of drought events. **Nourou Macki Tall** presented an initiative implemented by FAO whereby the objective was to promote the diversification and accumulation of assets of Nigerien rural households through two combined interventions: cash-for-work activities during the pre-lean season to support the reclamation/restoration of degraded lands and unconditional cash transfers during the planting period. In this framework, the MFIs were involved as a channel to distribute cash transfers to the beneficiaries in a timely and efficient fashion. A better management of agricultural harvests is also a key determinant of food security. The Community Credit Inventory or warrantage, discussed by **Matteo Cortese**, allow smallholder farmers to receive credit from an MFI using part of their harvest stored by a producer

organization as collateral. The stored crop can then be sold or consumed during the lean season. However, they point out that such schemes have to be designed properly to be sustainable. Based on experiences from Niger and Burkina Faso, they find that flexibility (such as in the locking system) and trust between all the actors (especially MFIs and producer organizations) involved are important conditions for success.

### *Microfinance Services for Adaptation to Climate Change*

Access to financial services is crucial for confronting climate change. By offering financial products and services linked to ecosystem-based adaptation and with incentives for rural livelihoods diversification, MFIs can support their clients' resilience against climate change, reduce exposure to risks and increase yields. **Alicia Rondón-Krummheuer** described the activities and preliminary results of the Microfinance for Ecosystem-based-Adaptation to climate change (MEbA) project in Peru and Colombia. The project was conceived to: (1) promote and support the introduction of micro financial products and services tailored to rural populations (e.g. small agricultural producers); (2) provide customized capacity building to MFIs; and, (3) raise awareness through training activities with a focus on Ecosystem-based Adaptation via partnerships with key local technical actors.

**Davide Forcella** carried out a crossed-analysis of three ecosystem conservation programs that also use microfinance services: Agroamigo in the North-East region of Brazil; the case of the NGO STEC in Cambodia; Proyecto CAMBio in Central America. Despite supporting the role of microfinance, it seems that all these initiatives have encountered pitfalls and side effects. The main lesson is that the provision of financial services needs to be integrated in local adaptation policies. Local development pathways, habits and culture are indeed to be considered in order to generate systemic change and foster the resilience of smallholder farmers. For example, mobility is one of the adaptation strategies implemented by rural populations in developing countries. **Barbara Bendandi** reflected on a new initiative that aims to involve Senegalese migrants in adaptation to climate change and the rehabilitation of local land. The idea is to use remittances as an “alternative source” of international climate finance.

MFIs that offer financial services for adaptation (as well as mitigation) and their stakeholders may have a vested interest in tracking their “green” performance over time as they now provide triple bottom-line returns: economic, social and environmental. So far, several indices have been developed to measure the environmental performance of MFIs but only at the institutional level. **Natalia Realpe Carrillo** illustrated the idea of developing a Progress out of Energy Poverty Index (PEPI) to track the performance at the client level. The first pilot and testing of this new instrument will be carried out in collaboration



with an MFI in Colombia.

### **Weather microinsurance**

Insurance against climate risks is traditionally a risk management strategy but can also be considered an adaptation strategy. Whereas semi-commercial and commercial farmers as well as big size enterprises have access to crop, livestock or, in general, weather insurance, smallholder farmers and SMEs in developing countries are often excluded from the formal insurance sector. Because of sizeable asymmetric information problems and high transaction costs, traditional insurance companies do not deem them to be a profitable segment. Index-based insurance seems to overcome most of these problems but suffers from others, including a potentially high basis risk, especially if the product is not well developed. Another relevant problem is that the demand at the client-level is still limited and initiatives at the meso- and macro-level are just emerging.

Despite traditional microfinance services and products, the design, development and distribution of index-based weather microinsurance can entail the involvement of many actors (government, donors, brokers, weather risk management specialists, research centers, insurance companies, reinsurance companies, microfinance institutions, farmer associations, and so on). All these actors are key in the success of insurance programs.

**Benjamin Collier** focused on index-based insurance linked to the loan portfolio of MFIs. He argues that MFIs are exposed to natural disaster risk because of two motivations: they rely mainly on "soft" information and operate in small geographic areas. When a disaster occurs the demand for credit increases along with the concern about borrower creditworthiness, whereas MFIs' capital decreases because of credit losses. From the analysis of a sample of MFIs, he finds that disaster risk clearly hinders the supply of credit; in particular of less capitalized MFIs. Index-based insurance at the MFI-level seems to entail less basis risk and less over-insuring than at the client-level. Benjamin presents a case study from Peru and shows how index-based insurance for disaster risk reduces credit market disruptions and the size of capital buffer. **Davide Libralesso** offered an example from the Philippines of how donors can support MFIs effected by natural disasters by effectively providing a combination of fresh capital, a rotating fund, training and technical assistance.

The success of index-based weather insurance depends on the value perceived by farmers and so, also on the extent to which the insurance program is integrated in the farmer's economic system. **Anaar Kara** presented the experience of PlaNet Guarantee, a microinsurance intermediary, with index crop insurance in West African countries. In order to foster access and value to weather insurance, the products were designed taking a value chain approach and the premium was included in the inputs or microcredit costs. Thanks to this approach, since 2011, they have been able to insure more than 50,000 farmers. Index-based insurance provides even more value in the management of risk if offered along with other services. Weather risk indeed has multi-faceted components. **Sophie Romana** presented the

R4 program that Oxfam International implemented in collaboration with the World Food Programme in Ethiopia and Senegal. The program combines the supply of index-based insurance with credit, savings and risk reduction services.

The lack and quality of historical and current weather and yield data is one of the main constraints in the scalability of weather insurance. **Diana Urbani** discussed how CelsiusPro, a weather risk management company, facilitates access to weather data for insurance and reinsurance companies. The online platform they developed allows access to big climate data globally, measured by satellites as well as ground weather stations. In order to continue to expand the platform, the availability of data could also be assisted by donors. **Emily Coleman** presented the experience of IFAD in supporting innovative data solutions for index insurance that replace weather-station-based data with satellite-based data.

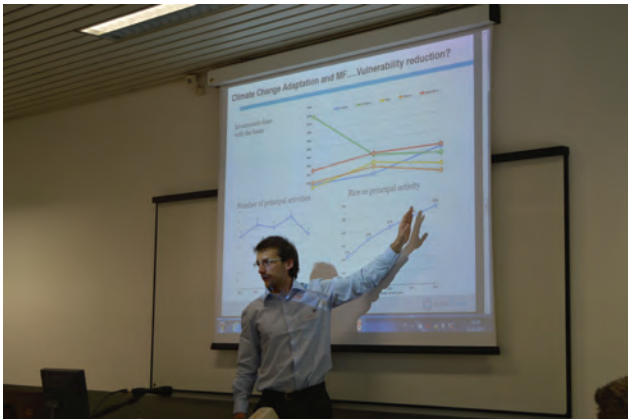
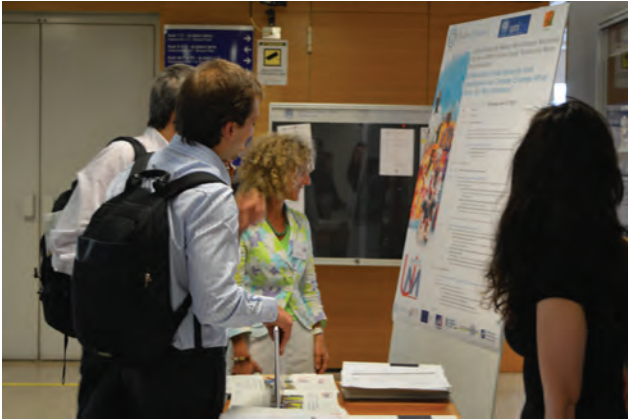
Another constraint in weather microinsurance is the limited demand from the intended clients. **Yann Gelister** discussed the low take-up of weather microinsurance. The main drivers of demand seem to be the supplier characteristics, the product design and the client situation and cultural dimension. As also argued by the other speakers, he hints that the take-up can be increased by offering weather insurance to risk aggregators, bundling insurance with other financial and non-financial products, and favoring the "institutionalization" of insurance in the value chain and national agricultural landscape. Besides, in order to reach scale, different factors have to be in place: adequate infrastructure, smart subsidies, adequate segmentation with reinsurance and efforts to limits costs to smallholders.

All the speaker's presentations are available on the UMM website: <http://www.universitymeetsmicrofinance.eu/12th-umm-workshop.html>

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

Sincerely,  
Davide Castellani

# Annex I: Photo Gallery



## Annex II: Workshop Program (1/3)



### 12th University Meets Microfinance Workshop of the e-MFP Action Group "University Meets Microfinance"

### Enhancing Food Security and Resilience to Climate Change: What Role for Microfinance?

Hosted by the University of Bergamo & the Research Center on International Cooperation  
June 11th – 12th 2015

Thursday, June 11<sup>th</sup> 2015

Time	Program	Room
14:00 – 14:30	Registration	
14:30 – 16:00	<b>Welcome and Plenary</b>  Azalea Carisch, University Meets Microfinance and PlaNet Finance Dorothee Heller, Deputy Chancellor for International Relations, University of Bergamo Laura Viganò, University of Bergamo and Research Center on International Cooperation  <b>Impact of Climate Change on the Micro Level</b> <ul style="list-style-type: none"> <li>Grammenos Mastrojeni, Italian Ministry of Foreign Affairs and Italian Development Cooperation "A tale of two balances..."</li> </ul>	<b>Sala Galeotti</b>
16:00 – 16:15	Coffee break	
16:15 – 17:45	<b>Parallel Presentations and Open Discussion</b>	
<b>Panel A</b>	<b>Enhancing Food Security through Microfinance*</b> Moderator: Grammenos Mastrojeni, Italian Ministry of Foreign Affairs and Italian Development Cooperation <ul style="list-style-type: none"> <li>Nourou Macki Tall, Resilience Operations Team, FAO Regional Office for Africa "The use of cash transfer in enhancing food security and resilience in the Sahel: The case of Niger"</li> <li>Matteo Cortese, Comunità Impegno Servizio Volontariato (CISV) "Community inventory credit – warrantage"</li> <li>Félicité Kambou, Coopérative de prestation de services agricoles (COPSA-C) "Warrantage: the case of COPSA-C in Burkina Faso"</li> </ul>	<b>Sala Galeotti</b>

\*this session will be conducted in French with simultaneous translation to English





## Annex II: Workshop Program (2/3)

Thursday, June 11<sup>th</sup> 2015

Time	Program	Room
16:15 – 17:45	<b>Parallel Presentations and Open Discussion</b>	
<b>Panel B</b>	<b>Microfinance and Adaptation to Climate Change</b> Moderator: <i> Davide Castellani, University of Bergamo, University Meets Microfinance</i> <ul style="list-style-type: none"> <li>▪ <b>Alicia Rondon- Krummheuer, Frankfurt School-UNEP Collaborating Centre for Climate &amp; Sustainable Energy Finance</b>  <i>“The role of public-private partnerships and microfinance mechanisms within EbA initiatives: the MEbA project”</i></li> <li>▪ <b>Davide Forcella, Université Libre de Bruxelles and Centre for European Research in Microfinance (CERMi)</b>  <i>“Microfinance - ecosystems conservation - adaptation to climate change”</i></li> <li>▪ <b>Barbara Bendandi, International Organization for Migration</b>  <i>“Promoting adaptation and land rehabilitation through diaspora investments”</i></li> </ul>	<b>Room 11</b>
17:45 – 19:15	<b>Plenary Session</b>	<b>Sala Galeotti</b>
	<b>Role of Investors and Donors: Microfinance in the Climate Change and Food Insecurity Context</b> Moderator: <i>Sophie Romana, Oxfam America</i> <ul style="list-style-type: none"> <li>▪ <b>Davide Libralesso, Etimos Foundation</b>  <i>“A multidimensional approach in response to major Climate Change threats: the case of the LIFE FUND in the Philippines”</i></li> <li>▪ <b>Emily Coleman, IFAD-WFP Weather Risk Management Facility</b>  <i>“Supporting innovative satellite data solutions for index insurance”</i></li> </ul>	
19:15	Cocktail	

Friday, June 12<sup>th</sup> 2015

Time	Program	Room
09:00 – 09:30	Registration	
09:30 – 11:30	<b>Welcome</b>	
	<i>Azalea Carisch, University Meets Microfinance and PlaNet Finance</i>	
	<b>Plenary Session 1</b>	<b>Sala Galeotti</b>
	<b>Weather Microinsurance – Part 1</b> Moderator: <i>Laura Viganò, University of Bergamo</i> <ul style="list-style-type: none"> <li>▪ <b>Benjamin Collier, The Wharton School, University of Pennsylvania</b>  <i>“The pervasive role of severe climate risk in microfinance and strategies to manage it”</i></li> <li>▪ <b>Sophie Romana, Oxfam America</b>  <i>“R4, The Rural Resilience Initiative”</i></li> <li>▪ <b>Federica Di Marcantonio, Joint Research Centre European Commission</b>  <i>“Review of pilot projects on Index-based Insurance in Africa: Some insights and lessons learned”</i></li> </ul>	



This project is co-financed by European Commission



Freie Universität Berlin



## Annex II: Workshop Program (3/3)

Friday, June 12<sup>th</sup> 2015

Time	Program	Room
11:30 – 11:45	Coffee break	
11:45 – 13:15	<b>Presentation of student field research</b> <ul style="list-style-type: none"> <li>▪ <b>Adrian Fenton, PhD Candidate, University of Leeds</b>  <i>"Microfinance and climate change: insights from Bangladesh"</i> <ul style="list-style-type: none"> <li>○ Comment by <i> Davide Forcella</i>, Université Libre de Bruxelles and Centre for European Research in Microfinance (CERMI)</li> </ul> </li> <li>▪ <b>Natalia Realpe Carrillo*, PhD Candidate, Technische Universität Berlin and MicroEnergy International</b>  <i>"Development of a Progress out of Energy Poverty Index (PEPI) for the Microfinance Industry: Colombia"</i> <ul style="list-style-type: none"> <li>○ Comment by <i> Davide Castellani</i>, University of Bergamo</li> </ul> </li> </ul> <p>*Video conference</p>	<i>Sala Galeotti</i>
13:15 – 14:30	Lunch	
14:30 – 16:30	<b>Plenary Session 2</b> <p><i>Weather Microinsurance – Part 2</i></p> <p>Moderator: <i> Benjamin Collier</i>, The Wharton School, University of Pennsylvania</p> <ul style="list-style-type: none"> <li>▪ <b>Yann Gelister, Grameen Crédit Agricole Microfinance Foundation</b>  <i>"Take-up of weather microinsurance: theory and insights from East Africa"</i></li> <li>▪ <b>Anaar Kara, PlaNet Guarantee</b>  <i>"Index-based crop Insurance: West Africa"</i></li> <li>▪ <b>Diana Urbani, CelsiusPro</b>  <i>"Innovative technology for Weather Index Insurance Solutions"</i></li> </ul>	<i>Sala Galeotti</i>
16:30 – 17:30	<b>Plenary Session 3</b> <p><i>Reflecting on EXPO Milano 2015: Food Value Chains, Fair Trade and Development</i></p> <p>Moderator: <i> Laura Viganò</i>, University of Bergamo</p> <ul style="list-style-type: none"> <li>▪ <b>Stefano Corsi, University of Milan</b>  <i>"Strengthening food chains and promoting social business. Case studies in Sierra Leone and Chad"</i></li> <li>▪ <b>Gianluca Bozzia, Chico Mendes Onlus</b>  <i>"The role of finance in fair trade"</i></li> </ul>	<i>Sala Galeotti</i>
17:30 – 17:45	<b>Closing Remarks</b> <p><i> Davide Castellani</i>, University of Bergamo, University Meets Microfinance</p>	<i>Sala Galeotti</i>
17:45	Cocktail	





## Annex III : List of Participants (1/2)

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Adrian, Fenton; University of Leeds, Sustainability Research Institute  
Ahmed, Shahid; FINCA  
Akwasi, Addai; Boateng Cape Coast Polytechnic, Department of Accountancy Studies  
Alicia, Rondón-Krummheuer; Frankfurt School/UNEP Centre/MEBA  
Anaar, Kara; PlaNet Guarantee  
Andrea, Ronchi; Scienze economiche, aziendali e metodologie quantitative  
Ayako, Iba; World Bank  
Bara, Hodjilaou Bede; Université Evangélique du Tchad/Institut Evangélique Polytechnique  
Barbara, Bendandi; IOM  
Benjamin, Collier; The Wharton School / University of Pennsylvania  
Daniela, Pensotti; Coopi  
Davide, Forcella; CERMI  
Davide, Libralesso; Etimos Foundation  
Diana, Urbani; CelsiusPro  
Diego, Luigi; Dagradi Fondazione Giordano Dell'Amore  
Djiby, Ndiaye; Université de Ziguinchor  
Emily, Coleman; IFAD  
Enrico, Ubiali; University of Bergamo  
Ephrem, Demena; National Bank of Ethiopia  
Fatou, Mbodj; University of Bergamo  
Federica, Di Marcantonio; European Commission Joint Research Centre Institute for Environment & Sustainability  
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Filippo, Tessari; Fondazione Eni Enrico Mattei  
Frank, Owusu; Sarpong Sekyeredumasi Rural Bank  
Gabriel, Acheampong; University of Bergamo  
Gabriela, Cassetti; Engineers without borders  
Giada, Florino; University of Bergamo  
Gianluca, Bozzia; Chico Mendes  
Giuseppe, Urbani;  
Grammenos, Mastrojeni; Italian Foreign Ministry  
Guilio, Arsenio; Bper Banca  
Joseph, Kakweza; Microensure  
Laura, De Matteis; Fondazione Giordano Dell'Amore  
Luca, Ghislandi; University of Bergamo  
Luca Maria, Torre; University of Bergamo  
Lucia, Foglia; Università degli Studi di Macerata  
Mahinde, Wijesiyi;  
Marco, Ten-Pow; University of Bergamo  
Maria Lina, De Rubeis; Universität Catholica  
Mario, Gesualdi;  
Mario, Masini; University of Bergamo  
Marta, Domini; unibs, DICATAM  
Marta, Loprete; Unibg SEMQ Economia Aziendale  
Matteo, Cortese; CISV  
Merina, Siriwardena; University of Bergamo  
Monserath, Ximena Lascano Galarza; University of Pavia, Departement of Economics, DREAMT program  
Natalia, Realpe Carrillo; Technische Universität Berlin/ MicroEnergy International  
Nourou, Macki Tall; FAO  
Oladunni, Onanuga; Miss Touch Foundation

## Annex III : List of Participants (2/2)

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Oloo, Okech; Engitanapa (formerly Maarifa) Consultants Limited  
Peter, Cincinelli; University of Bergamo  
Pierpaolo, Pettrone; SDA Bocconi  
Richard, Opoku; University of Bergamo  
Robert, Balogh; Institute of Historical Studies, Hungarian Academy of Sciences  
Rohan, Chaudhry; Khushhali Bank Limited  
Roshan, Borsato  
Sangare, Moustapha; Unuversity of Palermo  
Silvia, Bettinelli; University of Bergamo  
Simona, Leo; University of Bergamo  
Simone, Pomata; University of Bergamo  
Simoneta, Chiesi; University of Bergamo  
Sophie, Romana; Oxfam International  
Stefania, Licini; University of bergamo. Dep. Management and Economics  
Stefano, Corsi; University of Milan/ Coopì  
Timpano, Nossella; University of Bergamo  
Veronica, Vergani; University of Bergamo  
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