

Microfinance for Ecosystem Services – Lessons from Proyecto CAMBIO in Nicaragua

Abstract for the 2nd Interdisciplinary Symposium on Sustainable Development:
How to accelerate the transition?

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Chosen theme

A.1. Global commons. and A.4 Social economy and transition to sustainable development

Indicative bibliography

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Introduction

In Central America, agricultural activities cover 40% of the land area, employ 57% of the regional labor force and are an important component of the GDP. Present agricultural land use, however, has negative environmental impacts such as loss of biodiversity, land degradation, deforestation,

water contamination. Additionally, rural areas are marked by poverty and climate change vulnerability.

Proyecto CAMBio is an innovative program that was designed to partially tackle such issues, fostering biodiversity conservation and environmentally friendly land-use practices through a combination of incentives. It offers micro-credits to finance agroforestry activities such as coffee, cacao and cattle raising that integrate trees into the rural production. The project also provides conditional incentives, or Payments for Environmental Services (PES), that are supposed to reward the additional efforts towards adopting biodiversity-friendly practices such as planting more trees. A third component is the provision of technical assistance for micro, small and medium rural enterprises located near biodiversity hotspots to actually implement the activities financed with the credit. Proyecto CAMBio aims to increase the productivity and the intensification of rural production, and to increase the ecological connectivity among protected areas. The programme ran from 2007 till 2013 in five Central American countries (Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica). It was lead by the Central American Bank for Economic Integration (CABEI), the Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP) and implemented by 26 local financial institutions. Proyecto Cambio is the first large scale programme mixing micro finance (MF) with PES. The evaluation of some of its main outcomes is then fundamental. This paper provides one of the first quantitative analysis of the environmental outcomes of such program for the specific case of its implementation in the Northern Central region of Nicaragua. It exposes some potential and limitations of this approach, providing a basis for reflection and steps forward for a transition towards development that is more socially inclusive and ecologically sustainable.

Theoretical frameworks

Green microfinance (GMF) aims at a triple bottom lines: providing economic, social and environmental benefits. It is an innovative approach towards economic development and environmental conservation and it has recently attracted growing interest by many stakeholders. The number of GMF activities presently implemented is growing very fast. It is a multidimensional topic that include environmental risk management, credits or non-financial services dealing with access to renewable energy or energy efficient devices, implementation of organic or agroforestry activities, or support of practices to better adapt to climate change, etc. Debates are ongoing regarding the actual ability, willingness and need of MFIs to implement such green MF initiatives. Nevertheless, the actual potential, effectiveness and limitations of such MF intervention to tackle socio-environmental problems is still largely unexplored. This paper aims to contribute to fill such knowledge gap and provide sound basis on how such programs could be better informed to have a role in ecological transition and socio-economic integration in developing countries. The paper focus on a subtype of GMF which seeks to engage in active support of specific environmentally friendly rural practices such as agroforestry and silvopasture activities, by providing direct incentives to its clients. To analyse a specific case of such MF for Ecosystem Services, we employ the framework of institutional ecological economics (mostly regarding the framing of GMF within a wider set of incentive-based mechanisms for natural resource management) and complexity theory for socio-ecological systems. In this approach, we conceive rural territories not simply as a set of individuals rural producers in a given socio-economic and environmental background, but as complex socio-ecological systems, where different elements interact and lead to emerging structures and dynamics that are not simply the sum of individuals dynamics. New properties emerge from the interaction between different actors and the social, economic and political structures: formal and

informal rules, entitlements, access to knowledge, credit and economic opportunities, etc. This makes the system intrinsically non-linear and complex, where the evolution is hardly predictable and feedback effects can strongly modify final outcomes. It is within such a system that an intervention like Proyecto CAMBio is operating.

With these lenses we look at how a market oriented tool focused on individual actors, such as Proyecto CAMBio, interacts with local development pathways. In particular we investigate if it has the potentiality to stimulate better environmental pathways outside the area of the farm dedicated to the program and beyond the time lapse of the program, or if instead it directly or indirectly contributes to existing environmentally destructive and socio-economic unequal dynamics. Our research questions are:

- What are the drivers and characteristics of rural producers that influence the evolution of the environmental value of their farm? More specifically: is Proyecto Cambio able to improve the environmental performance of rural livelihood strategies?
- Is the conditional payment an effective tool to reward the environmental improvement of farm land?

Explanation of data

To answer these questions, we analyse a unique set of primary data concerning 130 rural producers: 88 that participated to Proyecto Cambio and 42 that did not participate. Data were collected by one of the authors in the period October-November 2013 in the Northern region of Nicaragua near the natural reserve Macizo de Penas Blancas. In addition, long-term presence in the zone, conducting semi-structured interviews and participatory observation, provides for necessary qualitative data to understand and interpret better the quantitative results; and vice-versa.

The geographical location was chosen due to its importance for biodiversity and environmental connectivity, as part of the Meso-American biological corridor, and due to the concentration of rural producers that participated to Proyecto Cambio. The questionnaire was inspired by previous assessments done for PES and Proyecto Cambio in Nicaragua, and asked, among others, for information concerning: the economic activities, credit sources and use of credit, family structures, membership of organisations, livelihood strategies, and these characteristics' evolution during the last five years, etc.. For the evaluation of the environmental performance of the farms, we used the Ecosystem Services Index (ESI) as a proxy for the environmental outcomes of the livelihood strategies of the rural producers. The ESI is a specific index designed by local rural development organisations, indicating the biodiversity and carbon offsetting potential of the various activities in the farm. Based on the survey information, we look at the evolution of the ESI per hectare (ESI/ha) in the last five years, which we will try to frame in relation to participation in the programme. We performed various statistical and econometric test of the data: we implemented mean difference tests of the evolution of the ESI/ha in term of various characteristics of the producers such as: their main activity, the surface of their farm, the access to credit and in particular to credits of Proyecto Cambio, the evolution of their farm and economic activities, the social and physical capital of the producers, etc. We implemented various econometric multivariate regressions to assess the characteristics and drivers that influenced the evolution of the ESI/ha of the farm. We further analysed the correlation between the PES and the actual evolution of the ESI/ha of the farm and its correlations with various

characteristics of the producers. Finally, we implemented some multivariate regression to assess the effect of PES on the evolution of the ESI/ha of the farm.

Diagnosis

Our analysis provides some sharp results. It assesses that in the analysed region there is an ongoing process of land accumulation and in particular of increase of ecosystem value of the farms. However such dynamics are not directly influenced by Proyecto Cambio, yet mainly by other producers' characteristics and the interaction of the producers with existing development pathways. In particular producers with higher environmental value five years ago have a lower environmental evolution. Producers that changed their activity to coffee production achieved a better environmental value, while producers that changed their activity to cattle raising decreased the environmental value of their farm. Producers that had coffee as their main activity five years ago achieved better environmental results, while producers with bigger farm surface five years ago had a worse environmental evolution. Land accumulation worsens the environmental value of the farm. The access to credit in general, and in particular the provision of the specific green credits from Proyecto Cambio, do not have a significant impact on the evolution of the environmental value of the farm. However it turns out that MFIs have a significant tendency to provide more credits under the Proyecto Cambio to producers that had bigger farm and increased their farm surface in the last 5 years, which relates to their choice to focus on the best and most loyal clients. The reward in term of PES per tree was very heterogeneous, and there are even some farmers that received the PES even though the overall ESI/ha of their farm diminished. This makes us wonder about the actual relation between PES and the additional environmental services provided by the producers and the actual drivers that allocated the PES to the various producers. Indeed it turns out that the higher PES was received by producers with bigger farm and relatively easier access to credit. From a multivariate regression analysis we observe that the PES paid per tree has actually a negative influence on the evolution of the environmental value of the farm.

Conclusions

The analysis of Proyecto Cambio shows that complex programs linking credit, technical assistance and PES can be actually incorporated into the operations of certain MFIs and that they can fulfil the indicators required by the programme. This result opens the way to the implementation of innovative GMF approaches to incentivize better environment management and conservation. However the detailed analysis of the data shows that microfinance per se cannot change the existing development pathways, and interacting with the local existing cultural background and socio-economics dynamics it ends to do not have a significant influence on the evolution of the environmental value of the farm, while instead have the tendency to provide credits to the producers that have a worse environmental evolution. The message from this paper is to build on the actual experience of Proyecto Cambio to push for a more territorial approach that recognise the intrinsic link between socio-economic inequalities, existing power structures and environmental degradation and it aims toward a more proactive role in reshaping existing livelihood strategies toward more socially inclusive and environmental friendly pathways. In this case, in the context of land accumulation and social differentiation in the region, we want to raise attention to the inevitable political stance taken by suchlike projects and MFIs more broadly when wondering about whom to support, how, and what for.