CHAPTER 13

Microfinance plus for ecosystem services: A territorial perspective on Proyecto CAMBio in Nicaragua

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Abstract

Drawing from discussions on the panacea problem in microfinance and natural resource management, we scrutinize a 'green microfinance plus' programme – Proyecto CAMBio – in a specific setting in Nicaragua, focusing in particular on its interaction with local development pathways. The programme was designed to promote biodiversity-friendly land uses through the combination of credit provision, technical assistance and conditional economic incentives. In our case study, we highlight the focus on individual producers, the implicit targeting of more established medium-sized producers, and the uncritical promotion of a particular technical model of production. The project might thereby have failed to identify and revert some negative processes of environmental degradation and did not consciously engage with the dynamics and political arenas of sustainable development. We call for a more holistic territorial perspective that is conducive to more strategic thinking about the interactive socio-technical dynamics and ensuing opportunities and constraints for different producer types and technical-commercial models. Such strategic reflection is both inevitable and political, as it impacts on the opening and closing of avenues for more or less socially inclusive and environmentally sound development pathways.

Keywords: green microfinance, coffee, environmental services, microfinance plus, microcredit, Nicaragua, sustainable development, development pathways

Introduction

As the social impact of microfinance continues to be the subject of heated debate and contestation, the sweeping claim that it is a panacea for poverty has clearly become unsustainable. In the light of the ongoing discussion on poverty impact, does it make sense to burden the microfinance agenda with yet another, at least as large, challenge, namely that of promoting

http://dx.doi.org/10.3362/9781788530576.013

environmentally friendly development? Is this perhaps yet another example of 'microfinance narcissism' (Bastiaensen et al., 2013), whereby microfinance is seen as the linchpin of global change? Successions of contradictory impact studies (Bauchet et al., 2011; Banerjee et al., 2015) have been unable to demonstrate the effects of microfinance. Indeed, the realization that its impact (or lack thereof) inevitably depends on complex, dynamic interactions – making a system's evolution intrinsically non-linear and unpredictable – renders futile any attempt to unequivocally attribute outcomes to microfinance alone.

One response to this insight has been the plea for a 'microfinance plus' approach (Sievers and Vandenberg, 2007; Bastiaensen and Marchetti, 2011), whereby financial and non-financial services are combined. This could offer better perspectives for promoting beneficial change to interconnected social, economic, cultural and ecological systems. In the present chapter, we consider a 'green microfinance plus' initiative: the Central American Proyecto CAMBio (Central American Markets for Biodiversity) in Nicaragua, as implemented by the Fondo de Desarrollo Local (FDL). The innovative project skilfully combined conditionally subsidized agricultural microcredit with technical assistance and payments for environmental services (PES) for the purpose of inducing environmentally sound land-use changes. This case study highlights the inevitability and the political character of complex interactions between green microfinance interventions and local development pathways. We call for a more holistic territorial perspective that is conducive to strategic thinking about the interactive socio-technical dynamics and ensuing opportunities and constraints for different producer types. Further, by linking our findings to broader debates about the need to go beyond panaceas in microfinance and natural resource management, we reflect more broadly on the potentials and pitfalls of green microfinance plus programmes.

Microfinance, complexity and sustainable development

Before turning to our case, let us briefly reflect on the panacea problem and microfinance plus. Again, the controversy surrounding the supposed poverty impact of microfinance provides an interesting starting point, particularly Susan Johnson's observation that what is lacking from the debate is an adequate theory of the mechanisms and processes that generate poverty, as it commonly adopts a residual approach to poverty (Johnson, 2012). This stands in the way of more adequate understanding of the roles of the different actors involved. Johnson rightly asserts that poverty is not residual at all, but a reality resulting from collective relational processes that distribute aspirations, burdens and opportunities for social groups in society.

With the rise of 'green microfinance' – microfinance taking environmental considerations into account (Muñoz Araya and Christen, 2004; Hall et al., 2008; Schuite and Pater, 2008; Allet, 2012; Huybrechs et al., 2015) – it also becomes necessary to reflect on the analysis of human–nature interactions. In that realm, too, Johnson's argument about poverty remains valid. An adequate

approach to the world's environmental challenges requires an analysis of productive economic systems as embedded in and interacting with both the life-support system of nature and the socio-cultural system of human society (Ropke, 2005). The (im)balance of the emerging dynamics and the associated challenges need to be seen as the outcome of complex relational processes mediated by social institutions, at multiple scales.

In rural regions, one can usually discern the emergence of one or a few dominant development pathways, connected to agricultural or other economic activities, which create opportunities and impose constraints for distinct groups (de Haan and Zoomers, 2005; Bastiaensen et al., 2015). This is the emergent outcome of power-laden territorial collective action by interacting groups of actors in multiple organizations and social networks, inspired by certain sets of (sufficiently shared) ideas and motivations, and governed by particular 'rules in use' or 'practical norms' (Bastiaensen et al., 2015).

These complex socio-ecological dynamics cannot be captured in straightforward predictive models, especially not in the context of profound systemic change, which usually requires a more thorough reshuffle of social networks, ideas, motivations, and 'rules in use'. Yet, it is common practice among scientists and practitioners alike to approach these complexities with simplified, reductionist models in laying the foundation for policy design and action. It is this tendency that Ostrom and Cox (2010) have dubbed the 'panacea problem'. Simplified, manageable and often unidisciplinary models of reality create an appealing semblance of control. This often results in decontextualized, one-size-fits-all policy recommendations, however, and ineffective and unjust policies (Leach et al., 2010; Ramalingam, 2013). Ostrom and Cox (2010) therefore suggest to embrace more holistic heuristic frameworks that try to make sense of contextualized complex interactions.

The economic conceptualization of society as a set of rational individuals, responding to price signals and interacting with each other through markets, is a well-known and influential example of a reductionist model. The initial microfinance model is also derived from a reductionist model of the world, where financial capital is the key constraint facing poor 'entrepreneurs' (Johnson, 2012; Aitken, 2013; Mader, 2014; Schwittay, 2014). The provision of microcredit to excluded sectors is seen as an obvious and comprehensive solution. At the same time, in natural resource management there is a tendency to relate the depletion or provision of environmental services (ES) to the (in)effective pricing of environmental costs and benefits. The introduction of adequate payments for ES (PES) is assumed to restore the balance in provisioning ES (Ferraro and Simpson, 2002). And in yet another model, where a lack of producer knowledge about ecosystem-friendly production technologies is considered the key problem, technical assistance is held to provide the solution.

The three aforementioned models might be amalgamated into a single framework: a combination of microcredit with PES and TA, as in the green microfinance intervention analysed in this contribution. However, a mere

aggregation of three supposed solutions to partial problems does not necessarily guarantee an adequate holistic understanding of and response to the problems facing the evolving socio-ecological systems as a whole. A 'complex' worldview rather requires these proposed solutions to be understood in their mutual interactions as well as their interaction with the prevailing system more generally.

These insights form the basis for our case study, where we discern prevailing opportunities and constraints for different social groups; look at how the implementation of the green microfinance project interacted with this setting; and reflect on the emerging outcomes in terms of environmental performance. To take a significant step beyond panaceas, we suggest a more proactive and conscious engagement with these complex interactions, and a recognition of the inevitably political role herein.

Development pathways and socio-ecological systems

The Macizo de Peñas Blancas (hereafter Peñas Blancas) is located in the northern central highlands of Nicaragua. Declared a nature reserve 25 years ago, it is part of the Mesoamerican Biological Corridor and one of six conservation nuclei in the Bosawás Biosphere Reserve. Its exceptional status set it apart as a priority area for the implementation of Proyecto CAMBio in Nicaragua. The climatological and topographical features of this 'cloud forest' make it suitable for coffee cultivation, an economic activity that strongly characterizes the local development pathway.

Peñas Blancas is part of the 'old agricultural frontier' (Maldidier and Marchetti, 1996). Farmers first arrived there in search of unclaimed land in the 1940s, having been pushed east by the expansion of the major coffee estates in consequence of government policy to boost coffee production (Rocha, 2001). Upon their arrival, the displaced farmers would typically clear forest to grow staple crops and raise fowl and pigs for subsistence. Whenever savings or credit permitted, they would generally plant coffee shrubs.

The construction of a road in the 1970s improved opportunities for the commercialization of coffee and opened up the region to newcomers, pushing the agricultural frontier even further. This process was interrupted during the 1980s, when the country was gripped by an armed conflict between the Sandinista regime and the counter-revolutionary Contras. The coffee industry, which had been nationalized in the 1980s, was liberalized again in the 1990s, as state credit was withdrawn and cooperatives and state-led production units were dismantled. This created opportunities for larger entrepreneurs to purchase land. Increasingly, growers chose to cultivate newer coffee varietals, which are more densely sown and are more resistant to sunlight. They also offer higher yields, though this requires more intensive use of agrochemicals.

Over the past 15 years, the coffee region has been hit by two severe crises. In 2000, international coffee prices plummeted, affecting farmers' incomes and their access to credit (credit provision was cut by 70–90 per cent the next

year) (Rocha, 2001). More recently, the 'coffee rust' fungus decimated mainly weaker plantations and less resistant and older varietals. After the 2011–12 harvest, the disease left 20 per cent of the national coffee fields in need of renovation (Avelino and Rivas, 2013). The epidemic strongly affected the least privileged coffee farmers, in part because of their different approach to coffee production: they tend to use fewer agrochemicals, to cultivate in more shaded areas, and generally try to benefit from the long productive life of coffee. Moreover, smaller farmers tend not to have access to longer term commercial credit from banks. Instead, they must rely on forward sales to middlemen or coffee exporters (Mendoza et al., 2013), or on mostly short-term microfinance loans. Longer term credit is key to renovating plantations, however, as it takes three years before newly sown coffee plants become productive.

The 2000 coffee crisis drew attention to the plight of small coffee farmers, resulting in various projects and initiatives, including 'fair trade' coffee certification. However, as certification demands high fees and alternative commercialization channels, the scheme is not readily accessible to small family farmers, with the exception of farmers who managed to organize themselves in cooperatives, often as part of a project or external support programme. Other labels, such as Rainforest Alliance, UTZ and 4C, currently tend to benefit mostly large-scale estates (Gómez et al., 2011).

These historical evolutions – mediated by a differential access to credit, markets, projects, certification, and social and political support – have resulted in the following local typology of producers (based on Maldidier and Marchetti (1996) and Arribard (2013)):

- 'Poor peasants with land' rely exclusively on family labour, sometimes complementing agricultural revenues with remunerated work on other farms. They produce subsistence staple crops, keep fowl and pigs, and install small plots of coffee. Their holdings are generally smaller than 3 hectares.
- 'Small-scale coffee farmers' hold areas between 3 and 30 ha and employ temporary workers during harvest. They have easier, yet limited, access to credit. In lower-lying areas, some of these farmers also engage in small-scale cattle raising. Like the 'poor peasants with land', they sell their coffee mostly to intermediaries or to the main export companies in the region.
- 'Medium-scale coffee farmers' own between 30 and 100 ha and complement family labour with the employment of both temporary and permanent workers. These farmers tend to devote most of their land to coffee production, though some, particularly those operating at lower altitudes, engage in medium-scale cattle rearing and milk production.
- The 'coffee estates' are the largest actors in the region, with holdings measuring up to 350 ha. Their approach is based on an entrepreneurial model of production and they often operate as part of a larger, more integrated enterprise that is also involved in the processing and trade stages of the value chain.

The majority of farmers in the region belong to the first two groups, with more than half their farms measuring under 7 ha (Gómez et al., 2011). The largest 10 per cent of producers own over half the available arable land.

While the proposed typology is inevitably a simplification, it does allow us to reflect on the territorial development pathway in a more synthesized and yet sufficiently diversified way. Considering the environmental concerns that Proyecto CAMBio tried to address, it is important to note that smaller farmers tend to cultivate coffee with denser and more diversified shade cover, and to use fewer agrochemicals (Cuadra Mayorga and Alvarado Narváez, 2011). They also generally diversify their economic activities as a mitigation strategy for their vulnerability to coffee crises. Even though small-scale coffee farming in this region is economically viable, such crises are a recurring threat. They can force smaller producers to reduce their coffee areas – eliminating the shade and replacing coffee with staple crops or renting out land for vegetable contract farming – or even to sell their holding altogether. Conversely, such crises create opportunities for the larger farmers to acquire additional land at bargain prices, leading to an even greater concentration of land holdings. This may, in turn, result in landless farmers moving to the new agricultural frontier in search of new farmland, a process previously observed in other regions in Nicaragua (Polvorosa, 2015). Hence, the privileged position of the larger estates, the economic vulnerability of the smaller farmers, and the general trend towards production methods involving more agrochemicals and less shade – as a merely technical response to the aforementioned crises – may be seen as important dynamics within the currently dominant development pathway.

From an ecological perspective, this reflection on development pathways would seem to point towards the need for strategies to strengthen the viability and stability of smaller producers in the face of increasing land concentration and in reaction to a yield-oriented entrepreneurial approach to coffee production. In this context, opportunities may present themselves in connecting such producers to rewarding markets. This would require, among other things, a degree of organization among farmers and the questioning of current market relations, as well as careful reflection on how to enhance their diversified farming activities. Such a strategy would not only seek to promote more environmentally friendly coffee production, but it would also strive to support farmers who, under the current development pathway, feel like 'a species at risk of extinction', as one farmer poignantly put it. In other words, it would need to take account not just of biodiversity, but also social diversity, as well as any interactions between these two dimensions.

Microcredit for ecosystem services/biodiversity: Proyecto CAMBio

Proyecto CAMBio was implemented in Guatemala, Honduras, El Salvador, Costa Rica and Nicaragua between 2008 and 2013. It was financed by the Central American Bank for Economic Integration (CABEI), the United Nations

Development Programme (UNDP) and the Global Environment Facility (GEF). The aim of Proyecto CAMBio was to support biodiversity-friendly activities by 'removing barriers' for financial institutions and micro, small and medium-scale enterprises to engage with these practices (Proyecto CAMBio, 2013). With the guiding idea that pro-environmental change can be achieved through economic incentives (GEF, 2005; UNDP, 2006; Ervine, 2010), the project provided credits, conditional biopremiums and technical assistance (TA) for promoted practices.

The project allied with 24 intermediary financial institutions (including banks, credit cooperatives and microfinance institutions) in the five target countries. In practice, there were variegated implementation modes (Forcella, 2012; Lucheschi, 2014; Proyecto CAMBio, 2014; Forcella and Lucheschi, 2015). Here, we focus on Proyecto CAMBio as implemented by the Nicaraguan microfinance institution Fondo de Desarrollo Local (FDL) in association with its partner organization Nitlapan. The implementation mode of FDL–Nitlapan has been described as 'exemplary' and worthy of emulation (Vargas et al., 2011; Mendoza et al., 2012; Proyecto CAMBio, 2014). We do not imply that the specific outcomes of this case apply to the rest of Proyecto CAMBio, and we do not purport to make an analysis of the whole project. Rather, we rely on our conceptual framework of complex local dynamics and development pathways to present an in-depth analysis of the case at hand (Flyvbjerg, 2006). Our critical analysis aims to further improve the valuable green microfinance plus strategy of FDL-Nitlapan.

In its implementation of Proyecto CAMBio, FDL combined credit, TA and the so-called biopremium. For the provision of credit, FDL had access to a credit line from the CABEI at a 4.5 per cent annual interest rate. This enabled it to provide CAMBio loans at a slightly cheaper interest rate of 20 per cent annually, as compared to FDL's average rural interest rate at the time around 27 per cent. The loans were provided to finance investments in agroforestry and silvopastoral practices. They were capped at US$10,000 and averaged $2,070 per credit, which is low in comparison to many other implementations of Proyecto CAMBio.

Upon ex post verification of the agreed ecological goals (or transformations) – chosen from a list of possibilities provided by CABEI – the producer would receive a cash premium equal to 14 per cent of the loan. These conditional biopremiums were seemingly inspired by the notion of PES, with GEF acting as a biodiversity 'buyer'. Further reference to the notion of PES in the project is implied in its name, 'Central American Markets for Biodiversity' (neatly abbreviated as CAMBio, which is Spanish for 'change'). It is worth noting that Nitlapan had previous experience with the implementation of a supposedly successful PES pilot project in Nicaragua, namely the Regional Integrated Silvopastoral Ecosystem Management Project (RISEMP) (Van Hecken and Bastiaensen, 2010; Huybrechs et al., 2015). In addition, among the participating intermediary financial institutions, FDL was the one that gave the most biopremiums (Proyecto CAMBio, 2013).

When a producer successfully obtained the premium for the agreed transformations, FDL would also receive an amount equal to 6 per cent of the loan; hence both the producer and FDL had an incentive to comply. Finally, the project also provided funds for TA, helping producers make the envisaged ecofriendly investments. The funds amounted to 10 per cent of the disbursed loans and this money was used to pay Nitlapan for the provision of the TA.

Analysis of Proyecto CAMBio in the Macizo de Peñas Blancas area

Given the limited funds and the struggle to maintain client relations during a severe repayment crisis in Nicaragua at the time (Bastiaensen et al., 2013), FDL focused CAMBio on selected loyal, long-term clients. Hence, in addition to its ecological objectives, the project was used to reward clients with a good credit record. Furthermore, most probably due to perceived risks and concern with financial indicators, there was an additional bias towards somewhat larger, medium-sized farmers. This can be seen in Table 13.1, which shows the distribution of the types of farmer in our survey sample (consisting of 88 Proyecto CAMBio beneficiaries and a control group of 42 other FDL clients), according to the evolution of stated farm characteristics between 2008 and 2013. The bias is also reflected in the average size of the farms: 31.3 ha for the Proyecto CAMBio group compared to 22.2 ha for the other group (for details on the survey and its quantitative analysis, see Forcella and Huybrechs, 2015).

The bias towards medium-sized farmers may also have been induced by the CAMBio incentive system. In particular, the 10 per cent for TA and monitoring was deemed insufficient for clients with smaller loans, while the 6 per cent premium for FDL was also more easily earned on fewer loans of larger amounts. Few considered the focus on medium-sized farmers to be problematic, as this was believed to guarantee a greater environmental impact. As we will see, however, targeting certain types of farmer also impacts on how the project engages with local development pathways.

In Proyecto CAMBio, farmers received credit for investing in either silvopastoral cattle farming (21 per cent of the contracts) or (mainly coffee-related) agroforestry (79 per cent). Considering the relative importance of coffee-related credit, and the fact that our fieldwork was carried out in areas closest to

Table 13.1 Distribution of types of farmer in the survey sample (n = 130)

	Proyecto CAMBio beneficiaries (%)		*Other FDL clients (%)*	
	2008	*2013*	*2008*	*2013*
Poor peasant with land	18	8	39	14
Small-scale coffee farmer	42	47	39	60
Small-scale cattle farmer	14	11	15	14
Medium-scale coffee farmer	19	27	5	10
Medium-scale cattle farmer	7	7	2	2

the core of the nature reserve and best suited to coffee cultivation, our analysis focuses primarily on coffee farmers.

In order to analyse the interactions between Proyecto CAMBio and the envisaged environmentally friendly practices, we applied the Ecosystem Services Index (ESI) in our survey. This index attributes quantitative values per hectare in terms of biodiversity and carbon capture to different land uses (see Murgueitio et al., 2003). ESI is just one of several possible indicators and it does not allow measurement of all elements of ES or biodiversity. However, for the analysis at hand it hints at possible evolutions on the surveyed farms, and its adoption is inspired by the above-mentioned GEF-funded RISEMP project. We will look at this proxy's evolution for the farms as a whole (but dividing the ESI by the number of hectares for reasons of comparability), not just for the areas targeted by the project within the participating farms. This allows us to take better account of the types of farmer reached and the land-use evolutions promoted in interaction with the local development pathway.

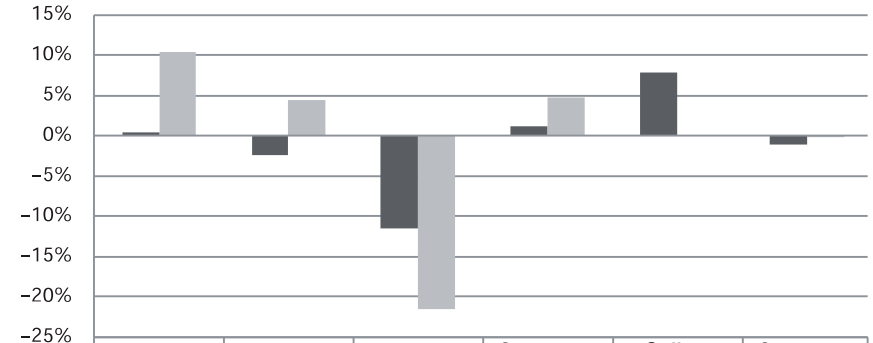
Conditions for eligibility to the biopremium were set on a farm-by-farm basis, as farmer and technician agreed on one or more targets, based on a list of options provided by CABEI. These included the installation of live fences, the conservation of forest around water springs, filters for treating water contaminated by coffee husking, and the planting of shade trees in coffee fields or pastures. Many participants indicated that they had already applied most of these practices prior to the intervention (80 per cent). All indicated that they would continue to do so afterwards. Strikingly, eight in 10 responded that they would have made the investments regardless of the project incentives. Insofar as the planting of shade trees is concerned (a condition specified in 90 per cent of the coffee-related contracts), the conditionality did not compel producers to go far beyond common practice. Medium-sized producers were not systematically required to attain the denser levels of shade commonly applied by the more diversified poor and small farmers. They were also offered the option of adopting the dominant yield-enhancing model.

Analysis of the biopremium payments indicates that some farmers obtained the premium even though their ESI/ha had diminished. Furthermore, the distribution of the predominant tree-related biopremium (which ranged from $0.34 to $12 per tree planted) was found to be erratic. The higher biopremiums were received by farmers owning larger holdings and with better access to credit, while the biopremium paid per tree correlates negatively with the evolution of the farms' environmental index. Thus, the link between the biopremium paid and the ES provided is weak and biased towards relatively larger producers. On this basis, the system can be questioned in terms of both the innovativeness of the promoted practices and their effectiveness. These findings are in line with other studies of Proyecto CAMBio in Nicaragua (Forcella, 2012) and Guatemala (Lucheschi, 2014).

More generally, the survey data indicates an overall tendency towards land concentration as well as an improved ESI on most farms in the region. Logically, these dynamics cannot be attributed wholly to Proyecto CAMBio,

as they depend mainly on other farm characteristics and their interactions with existing development pathways. An important driver of evolutions in ESI is change in the farmer's main economic activity. Our quantitative analysis indicates a positive effect from switching to coffee cultivation and a negative one from changing to cattle raising. As hinted at in Table 13.1, the 'control' group had a higher proportion of farmers who, over the five years, evolved from being 'poor peasants with land' to becoming small-scale coffee farmers. This implies a switch to more environmentally friendly land-use practices in the non-CAMBio clients, related to a transition from staple crops to coffee as a main economic activity, as shown in Figure 13.1. This leads to the paradoxical conclusion that the normal, unconditioned credit without subsidies might have had a greater ecological impact than did the subsidized Proyecto CAMBio credit, through its greater engagement with farmers making the switch from staple crops to coffee, although we do not pretend credit is the only factor explaining this change in livelihood trajectory. Hence, the choice for the more established medium-sized coffee farms – which was inspired by a combination of financial, marketing and ecological concerns – might not have been the most ecologically rewarding option after all.

This conclusion is further corroborated if we look at the promoted technical approach to coffee farming. Smaller coffee farmers tend towards a more traditional way of producing coffee, with less use of agrochemicals and more diversified shading. Our interviews with this group indicated that they valued the TA promoted by CAMBio (and beyond) in response to the devastating coffee rust crisis, in particular the choice for the presumably more resistant catimor varietal, but that they often found the technical recommendations for fertilizer and pesticide use to be unattainable. One can hypothesize that



	Coffee	Cattle	Staple crops	Coffee and staple crops	Coffee and cattle	Cattle and staple crops
PC	0%	–2%	–12%	1%	8%	–1%
Non-PC	10%	4%	–22%	5%	0%	0%

Figure 13.1 Evolution in main economic activity of CAMBio and non-CAMBio clients between 2008 and 2013.

smaller farmers' preferences were not met by the promoted technical model. Still, there might be opportunities for an alternative pathway, supporting collective action among small-scale producers to renew their more traditional approach to coffee farming and helping them to obtain certification or access to specialty coffee markets, as in other regions of Nicaragua (though certification in itself is not unproblematic: see Mendoza and Bastiaensen, 2003; Westphal, 2008; Valkila, 2009). Collective engagement might also generate new opportunities for other crops, like cocoa, which could be incorporated into diversification and climate-change adaptation strategies.

Given our overall analysis, more decisive priority to actual and potential small-scale coffee farmers in our study region and in the current coffee crisis is strongly advisable, ecologically as well as socially. It would contribute to reducing the conversion of devastated coffee fields into staple or vegetable-growing land; avoid distress sales of land and possible outmigration to other agricultural frontiers; and represent a counterweight to the expansion of the input-intensive entrepreneurial approach to coffee production. Small-scale coffee production might in particular also offer better prospects in terms of interconnectivity in the necessary (yet overlooked) landscape approach to the biodiversity corridors in Central America. The individual approach stands in the way of critically assessing the logic of the intervention in terms of more or less desirable territorial pathways and related social dynamics among different types of producer, erroneously concentrating efforts on larger farmers for the sake of generating a greater impact.

From this angle, one might also worry about the indirect effect of the implementation of the CAMBio project, particularly at a political and cognitive–motivational level. The current implementation of CAMBio – including the relatively high-profile public distribution of the biopremium to relatively more established and 'modern' coffee farmers – might indeed contribute to legitimizing the current pathway of coffee development, which is possibly environmentally and socially sub-optimal. Indeed, it rewards entrepreneurial production, and input-intensive and yield-optimizing (sun-exposed) coffee technologies as being ecologically friendly, while implicitly and probably unintentionally denying support for the arguably ecologically more interesting practices of smaller farms.

This at once brings us to a crucial issue: that concepts such as 'environmental friendliness', 'biodiversity', and 'environmental concern' – which may seem unproblematic and which, indeed, we have used unquestioningly throughout this chapter – are inevitably ambivalent and intrinsically politically contentious, as they do not mean the same to all people; nor do they affect all in the same manner or to the same extent. Our argument for a territorial approach inspired by a socio-ecological perspective thus inevitably requires engagement with the political struggles around the definition of environmental problems and solutions, their relation to other objectives, and the distribution of the ensuing costs and benefits (Fabinyi et al., 2014). A further analysis of Proyecto CAMBio would, for example, need to engage with the a

priori focus on biodiversity. We wonder to what extent projects can meaningfully engage with local problems of environmental governance without prior reflection on how those problems are perceived locally and on which practices are most likely to yield worthwhile social and ecological outcomes given the broader local dynamics.

It would also be worth exploring further the dynamics and political arenas between and within different institutions in the process of defining and implementing programmes and their evaluation. The consideration of Proyecto CAMBio as a 'success' by its executors might also relate to other objectives and valuations beyond the environmental objective, such as the fact that the project provided 'green' credits in a financially sustainable way, bringing together different donors, financial institutions and their clients. Further, there may not be much room for manoeuvre to go against the tide of the financialization of poverty and nature, which is enforced through epistemic communities, funding opportunities and the prevalent political–economic structure (Sullivan, 2013; Mader, 2014; Schwittay, 2014; Van Hecken et al., 2015).

Conclusion

This chapter analysed Proyecto CAMBio – an innovative rural 'green microfinance plus' project that strives to go beyond mere credit provision by adding components of TA and PES – in the specific context of its implementation by FDL–Nitlapan in the Macizo de Peñas Blancas area in Nicaragua. Our analysis indicates that such an integrated microfinance plus approach can be a step in the right direction towards inducing relevant ecological (and social) transformations. However, the mere addition of a biopremium (PES) and TA to individual investment credit provides no guarantee for optimal targeting and attainment of the ecological goals set, even if important positive results are achieved by individual client-beneficiaries. In our case study, the implicit priority given to more established medium-sized coffee producers led the project to ignore relatively more rewarding opportunities offered by engaging more strongly with smaller producers, where normal, non-subsidized credit provision paradoxically generated relatively greater ecological impact and contributed towards the social objectives by consolidating poor peasant producers under threat of losing their land due to the coffee crisis. The rather uncritical adoption of an input-intensive, yield-enhancing technical model as the most adequate socio-technological solution to the current coffee crisis might also be questionable.

Therefore, a more holistic territorial perspective needs to be adopted whereby greater attention is paid to strategic reflection on the interactive socio-technical dynamics and emerging pathways in terms of predominant producer types and the associated 'good' technical-commercial models. Such reflection is both inevitable and inevitably political. Any choice made will generate different responses insofar as the perspectives, values and opportunities

of determinate groups are concerned. It will thus open and close different avenues for their respective development, as it provides or denies access to credit, subsidies, technological and business assistance, while at the same time promoting certain types of research and development. Additionally, it promotes or hinders particular ideas (e.g. about the 'good' and the 'ecologically sound' technical model of coffee production) and engages with alliances among local and external actors. A more substantial transformation of the current – often socially and ecologically detrimental – development pathways requires the promotion of more drastic structural changes in the ideas and processes of development than has been in evidence thus far in Proyecto CAMBio. Going beyond the individual approach and adopting a more explicit and holistic territorial perspective might be a further step in the right direction.

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