POLICY BRIEF

Is it possible to finance livestock in a sustainable manner in Nicaragua's agricultural frontier?

September 2015

Manuel Bermúdez [1]
Selmira Flores [1,2]
Milagros Romero [1]
Johan Bastiaensen [1,2]
Pierre Merlet [2,3]
Frédéric Huybrechs [2]
Gert Van Hecken [1,2,4]
Juana Ramirez [5]

1. Nitlapan Research and Development Institute, Central American University (UCA), Nicaragua.
2. Institute of Development Policy and Management (IOB), University of Antwerp (UA), Belgium.
3. Directorate of Social Research and Projection, Central American University (UCA), Nicaragua.
4. Fund for Scientific Research (FWO), Belgium.
5. ADA microfinance, Luxembourg.

Summary

The historically dominant model of extensive cattle ranching in Nicaragua has led to a concentration of land in few hands and pushed small farmers towards the younger agricultural frontiers. It thereby contributes to social polarization and alarming levels of deforestation. This model is not sustainable in either social or environmental terms. As a consequence, a technological and social transformation is indispensable, moving from an exclusionary production model dominated by cattle raising to diversification into silvopastoral and agro-forestry farms.

This Policy Brief analyzes the problem of extensive cattle-ranching and presents policy recommendations for the micro-finance sector, with an emphasis on the crucial role of research. It proposes a sustainable and inclusionary financing policy based on:

1) A redefinition of the target group, prioritizing small and medium farmers and showing greater receptiveness to their more intensive cattle ranching practices and the diversification of their farms. This redefinition is part of the adoption of a territorial approach that permits better knowledge of the families' context, greater local embeddedness and a greater capacity to identify the power relations that generate exclusion.

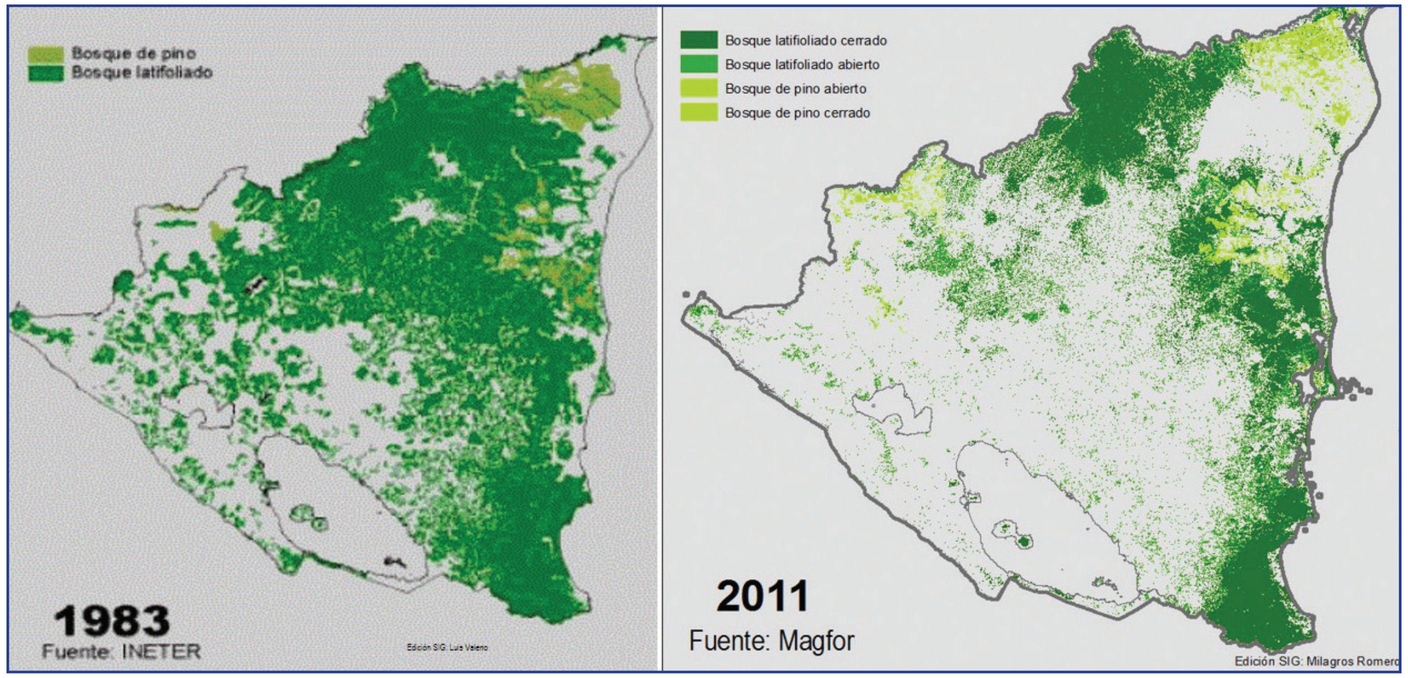
2) A readjustment of the financing approach, geared to medium- and long-term investments for the development of small or medium-scale silvopastoral systems that combine social responsibility, an environmental focus and productive intensification with a better organization of family labor, the incorporation of infrastructure and technology and better market insertion.

3) The adoption of a research agenda as an instrument to support the fostering of sustainable cattle ranching, which implies that the micro-finance institutions (MFI)s contributing to this goal should invest in studies that seek to better understand the capitalization trajectories and livelihoods of small and medium producers who make use of productive intensification on their farms.

I. The dominant model of extensive cattle ranching on the agricultural frontier and its consequences

Nicaragua's agricultural frontier has advanced through the rapid destruction of the native forests. This dynamic was only slowed down temporarily during the years of armed conflict in the 1980s. The statistics of the National Forestry Institute indicate that the country lost 2 million hectares of forest in the 1983-2000 period, 1.11 million ha. between 2000 and 2011, and 189,810 hectares between 2011 and 2013, drastically reducing forest cover (see Figure1). The excessive exploitation of timber and the

Illustration 1: Change of the forest cover in the country between 1983 and 2011



development of extensive cattle-raising are associated with this problem.

The extensive cattle-ranching model responded to the strong demand for beef in the US market at the start of the last century, strongly supported by external financing. Between 1960 and 1983, at least 60% of all World Bank credit to Central American governments was geared to cattle production.(1)

During the 1980s, state investment projects worth millions of dollars supported cattle-rearing (e.g. the Rancherías project in Matiguás ($126 million). Between the mid-1990s and 2000, Nicaragua had 13 large investment projects to develop cattle-rearing, focusing on the improvement of the herd and infrastructure (roads, electricity grids, collection centers) to support production.

As of December 2014, financing for cattle registered by the Nicaraguan Association of Microfinance Institutions (ASOMIF) represented 12.9% of the total portfolio of its 21 member organizations. The credit for cattle amounted to US$26.88 million, financing 13,604 clients (34% women). In 2013, the US$24.37 million cattle credit portfolio represented 13.2% of the t o t a l portfolio, and it was disbursed to14,791 clients (34.5% women).

On the other hand, the Superintendence of Banks and other Financial Institutions (SIBOIF) reported private banks providing 2,188 cattle loans for a total amount of US$ 66.4 million in 2013, while these were doubled in 2014 with 4,330 cattle loans for a total of US$ 93.06 million. While the number of clients dropped between 2013 and 2014, the cattle portfolio grew, which means fewer clients receiving larger amounts.

The investments made by two Mexican megacompanies in 2015 will further dynamize the demand for milk and beef.

Parallel to this economic boom of the sector, cattle expansion has been criticized in the last few decades for producing cheap beef at the cost of destroying forests (2)(3). The dynamics of the agricultural frontier is characterized by a migratory domino effect in which the same pattern is repeated over and over again. It starts with the initial settlement of individuals on virgin lands[i], followed by a gradual hoarding of opportunities and lands by larger cattle ranchers who push away less prosperous producers (see figure 2 for a schematic overview of the typical evolution). The latter are then obliged to move to the younger agricultural frontier, where land is cheap (4).

The colonization of forest begins with ' introducing improvements': opening paths, clearcutting a small area for agriculture and constructing shelter. At the initial stages of colonization, there is little differentiation

i 'Virgin lands' are de facto appropriated by the new users, without having formal titles deeds recognized by the State. There is a legal mechanism (known as título supletorio) to legalize de facto rights after years of cultivation, but many farmers do not feel the need to obtain one because they experience sufficient tenure security. In the agricultural frontier there i s no cadastral registry of the legalized properties either. The State does not have the capacity to intervene in the acquisition process and definition of use and ownership rights in the agricultural frontier (5).

among the inhabitants of the agricultural frontier, although some appropriated greater extensions of land (6). The lack of rotation and fertilization makes the agricultural areas lose fertility, gradually transforming them into grassland, while new forest areas are incorporated for the production of staple crops.

As social differentiation unfolds, a group of large dominant producers emerges[ii]. Their large herds and various farms in different places allow them to practise transhumance[iii]. They become leaders by engaging in animal fattening for beef production and by establishing clientelistic relations of cooperation with smaller farmers. As these cattle ranchers expand their male herds, they cede some of their animals for share-cropping production to the smaller farmers, making use of their superfluous grasslands. They also provide transportation services, buy grains, sell consumer goods and provide small amounts o f credit. Their privileged position as leaders of the area also grants them privileged access to the institutions that offer services to the area's producers.

Another socio-economic group emanating from thedifferentiation process consists of medium-sized producers, who have smaller farms and who work with dual-purpose cattle (beef and dairy). There are also small farmers who focus on basic staple crops and have pastures but few cattle. The big ranchers play a central role in the survival of the other groups and also skew public investment toward their own cattle activity, promoting a cattle development pathway to the detriment of agricultural alternatives for farmers with less land. Their success leads to the acquisition of even more land, while the other strata are tempted to sell their land and migrate to the agricultural frontier, where land is cheaper and whe r e they can continue the land accumulation process tryingt o imitate the logic of the larger ranchers.

In the interior of the country, in areas such as Matiguás and Río Blanco, small farmers are usually considered those with a land tenure range of up to 35 hectares and a herd of 20-25 animals. Their production system is diversified (staple crops, cocoa and musaceae), including the production of milk and the occasional sale of male animals. Medium farmers in this region, on the other hand, typically hold extensions of up to 70 hectares of land and a herd of up to 50 animals, mainly geared to dairy farming.

The large ranchers exceed the other two groups both in amount of land and animals, and are mainly focused on fattening steers for industrial slaughterhouses.

In this area, colonization of the forest has occurred through a gradual transformation of the forested area into a livestock landscape in which three factors are intermixed: a) a social differentiation of producers shaped by clientelistic relations between largeranchers (referred to here as patron ranchers) and small and medium farmers (referred to as client cattle-ranchers and farmers); b) the expulsion of farmers to the new agricultural frontier; and c) an increasingly greater insertion of farmers into themarkets (mainly for milk, cocoa and beef).

ii The group of large ranchers is not homogenous and can be differentiated into two basic types: Entrepreneurial owners of large properties who live in the city and do other types of activities, and those who may or may not reside on the farm but depend on the agricultural activities for their living.

iii Transhumance is a mechanism large ranchers often turn to in order to deal with the problems of forage and water availability for the animals during the dry season. It involves moving the herd to farms in different zones with varied climatological conditions, thus avoiding cultivating forage or buying feed. It is a key process of extensive cattle ranching that avoids investing resources in pasture or in feed. It is part of an opportunistic extractive behavior toward nature that is harmful to ecosystems and puts the future of cattle ranching in the country in check.

Figure 2: Evolution of a micro-territory in Rio Blanco (6).

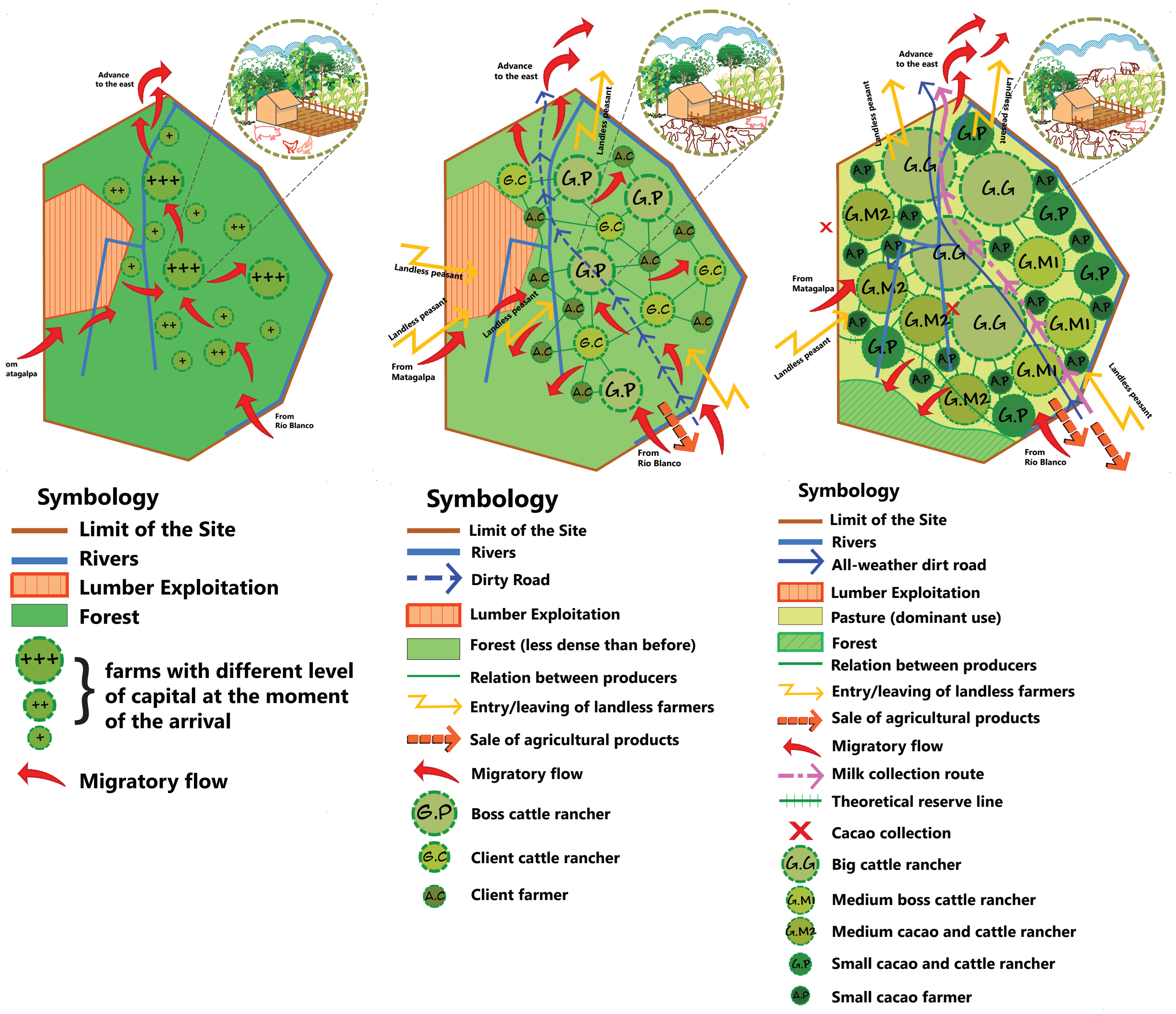


Figure 2 summarizes the dynamics of the dominant cattle pathway based on the availability of land in the agricultural frontier. Studies have shown that land purchase is more profitable than the intensification of cattle ranching on current holdings (7), thus generating a growing inequality of land distribution over time and space. The more the agricultural frontier is pushed toward the Caribbean Coast, the more consolidated cattle ranching becomes within the old frontier where the trend is to increase the concentration of land among a few owners[iv]. This repeated pattern of a moving agricultural frontier, the consolidation of extensive cattle ranching through the concentration of land among few owners and a strong social differentiation, is unsustainable.

After the 1990s, the availability of land in the old agricultural frontier has shrunk and the value of the land has increased. At the same time, the expansion of the fresh milk collection network for the national industry and the semi-industrial cheese makers has helped increase the potential aggregate value of cattleranching.

In these conditions, many expected and predicted technological changes in cattle production, not only with respect to the hygienic conditions of milk treatment, care of animal nutrition and health conditio ns of improved dairy breeds,but also with respect to the introduction of planted pasture grass, forage crops and trees for shade, evolving toward more silvopastoral systems (8). Nonetheless, even with more than a decade of expansion of collection centers and cheese factories in Matiguás, the results of increased productivity of the land are disappointing (9). The bulk of the dairy expansion continues to capitalize on the reduction of the forested areas within the farms.

Between 2001 and 2011 the average estimated milk yield per cow increased slightly, from 3.8 to 4.1 litres. This increase occurred among small and medium producers, but not amo n g the large producers, who continued to find it more profitable to invest in expanding farms rather than t o improve productivity. It has also been demonstrated that large producers who wish to focus more on dairy products face labour constraints, as they have problems finding permanent workers to milk the cows. This limits their capacity to manage the lactating cows on the farms. The small and medium producers, on the other hand, face most constraints in terms of access to better/more profitable markets, which in turn reduces their access to credit (particularly if they are located more than two hours away from the main roads or highways). The relative lack of capital and accessto credit impedes their potential to invest in the infrastructure needed to comply with the quality norms of the better markets and t o invest in improved pasture or forage crops to improve productivity (9).

II. Limits to the dominant cattle development pathways and the need for a sustainable and inclusive financing policy

The rainforest reserves that still remain are strongly disputed by other interests. On the one hand they are valued for their extraordinary global value in terms of biodiversity and carbon capture (Bosawás, Indio-Maíz) and their impact on the local water sources (Cerro Musun-Rio Blanco). On the other hand, they are also considered the property of indigenous communities.

The above description shows the process through which the cattle development pathway consumes the availability of abundant and cheap virgin forest land. Nonetheless, the finite natural resource on which the model depends is being used up. This exclusionary, concentrating and rainforestdevouring cattle development pathway must be transformed.

Access to financial resources, or a lack thereof, plays a decisive role in the social and environmental problem of the cattle development pathway. In its current configuration, the provision of credit permits certain producers to buy more cattle and land while the absence of credit for other producers prevents them them from making the necessary investments to diversify and consolidate their farms. Financial institutions that want to combine financial, social and environmental objectives and that operate in the agricultural frontier as financiers for cattle ranching and agricultural and non-agricultural activities need to redefine their strategy very carefully.

Given the comparative advantages that large and some medium producers have in their access to infrastructure (road, collection centers, transport), value chains, and government- or cooperativefinanced development projects, it is not surprising that the credit supply tends to be skewed toward them, given that -at first glance- they have fewer risks and greater repayment capacity [v].

This privileged access to credit also plays a key role in the logic of accumulation and concentration of land ownership by large and, to a lesser extent, mediumproducers. Although MFIs are generally not focused on the segment of large producers, they do have a secondary role to the extent that the purchase of cattle for relatively successful medium producers is financed. MFIs almost never agree to finance land, but the existence of a cyclical process of accumulation of buying and selling land and cattle means that the credit for cattle is very often equivalent to credit for the purchase of land (7).

In this context, there are instances of producers of peasant origin who have been successful with this modality and are MFI clients with an excellent record of successive credits with which they have succeeded in accumulating farms of hundreds of hectares. Other medium-sized clients with access to credit have settled their sons on farms in neighboring districts where they gradually buy land; eventually appropriating nearly all the land in the community. "They are the ones who grab on hard here (...) Soon everything will belong to the Sánchez" as the peasants of the area told a researcher (10) regarding the case of an excellent MFI client in the zone who repeatedly buys up land.

Unless they would accept becoming an accomplice of the environmentally destructive model and of the increasing social inequality of the dominant cattle route in the agricultural frontier, the MFIs must consider the following aspects for the financial policies with the cattle sector.

iv The data of the 2001 and 2011 Agricultural Censuses reflect a growing GINI coefficient from 0.67 to 0.69 in Matiguás and from 0.54 to 0.58 in Río Blanco between those two years.

v Although the crisis of the "Non-payment Movement" has also demonstrated that these producers have more political capital and boldness to resist the financial institutions t h a t insist that they settle their debts even when the latter are affected by a problem with their income flows.

First, redefine the target group of the credit policies for sustainable and inclusive cattle-raising. This involves limiting the credit clientele for cattle-raising to particular segments of producers that show greater receptivity to cattle intensification and diversification on their farms, opposing the logic of transhumance and mono-production. Two segments of producers for sustainable and inclusive cattle-raising are small and medium producers with logics geared to the productive diversification of their farm, those who feel the need to increase their land's productivity.

Within these two segments both men and women who own land, as well as their sons and daughters who have inherited land must be considered. It has often been observed that women and their children try to follow their parents' productive logic but show openness to changes based on innovation in the production systems. Small and medium producers, given their limited opportunities and lack of resources, do not succeed in introducing the desirable transformations toward more value added per unit of land. The opportunity costs (little land and more labor) and their peasant logic point to the necessity for increased productivity of the land through agro-forestry and silvopastoral diversification.

At the same time a territorial approach needs to be adopted by MFIs. This approach can provide betterunderstanding of, and engagement with the families' surroundings, greater local embeddedness and ability to differentiate exclusionary power relations and the logic of cattle expansion by each individual, given that the criteria of land and heads of cattle are related to the particularities of each territory and thus should not be generalized. A better understanding of the local dynamics would also include knowledge of the accumulation process the families in a territory have gone through. This would enable us to identify more effectively the families willing to work with a more intensive cattle-raising model and with diversified systems.

Socio-technological production changes will not be possible without structural changes to accompany them to reverse the unequal power relations among producers. Projects which only have a technological dimension (even if this dimension tries to include the environmental issue) are counterproductive if they do not have an explicit focus on social dynamics/ priorities in development pathways. Only a more active engagement with a territorial strategy, prioritizing resources (subsidies, comprehensive technical assistance and credit) for assisting small and medium producers in the transformation/ consolidation of their production practices offers better social and environmental perspectives.

The second aspect to consider is a readjustment of the financing approach. An intervention strategy has to aim to strengthen the small and medium producers in their productive diversification, and in so doing it indirectly obliges larger producers to invest at least in intensification (11). This requires the development of a credit policy and specific financial products oriented to medium- and long-term investment in the development of small- and medium-scale cattleraising that combines social responsibility, an environmental focus and productive intensification through improvements in the organization of family labor, the creation of productive infrastructure, incorporation of technology and better market insertion.

The MFIs are called upon to actively and consciously support the creation of a model different from that of extensive cattle-raising, which is destroying the forests and fuels inequality and social exclusion. The need for a comprehensive technological and social transformation requires the promotion of an effective silvopastoral intensification of cattle activity, which involves promoting credits for the planting of improved grass, forage crops and a better integration with agriculture (stubble, cultivated forage), more productive cattle breeds, pastures with more divisions that permit better use of the grass and soil rotation; infrastructure investment (systems to supply water for pasture and corrals, solar panels, live fences); and above all education and cultural assimilation of new management practices to benefit from the potential advantages of these technological transformations.

The dominant model of extensive cattle ranching should be abandoned in favor of diversifying the sources of income with agro-forestry activities using appropriate or novel categories in the zone. The idea is to stabilize the people in the available areas, to stabilize more farms with diverse production that provides different incomes.

It is also indispensable to foster the incipient trend toward reforesting the farms, something that could also be stimulated by introducing innovative payments for environmental services in the framework of a comprehensive policy to protect the remaining forest reserves (11). Credit products could be designed to offer preferential rates or co-investment schemes to provoke changes and the emergence of a new sustainable cattle-raising model. A co-investment scheme might, for example, imply that young producers pay 85% of the total credit requested and receive the remaining 15% as non-reimbursable funds once they have made the investments to which they have committed, which could be a joint effort among MFIs and development programs. This, in turn, assumes an intensive process of training, follow-up, technical advice and a periodic evaluation of the changes made on the farms and in the management of the animals.

The financing approach must also consider a value chains perspective regarding access to better markets. It is not only a matter of encouraging producers who receive credit to enter on their own in market circuits in which win-win relations are established. MFIs should also create alliances with other actors in the chains to help create and strengthen the links among the segments of producers it supports and the other actors in the chains. Indeed, part of a territorial approach could be the construction of a negotiated strategy of complementary financial support for "green products" or "products with ecological seals" that can be developed with the segments of small and medium producers open to change.

The third aspect to consider is research as a key instrument of support for sustainable and inclusive cattle-raising. Inordertoengage with local developme nt pathways in a conscious and informed way , it is indispensable for the MFIs to invest in research on the capitalization trajectories followed by the small and medium producers. There is an absence of information about cases that show it is possible to construct a model other than extensive cattleraising. The investigation must contribute not only to generating knowledge about the changes required for sustainable and inclusive cattle-raising, but also to offer opportunities for the construction of a new social self-image of the cattle rancher in the country. These aspects must be framed within the existing social responsibility policy of the MFIs established in the legislative framework, which goes beyond just earmarking a percentage of the portfolio for social issues. In this regard, the National Commission of Micro-finance Institutions (CONAMI) could play a fundamental role in defining norms of social responsibility that incentivize MFIs to change their approach and comply more effectively with what the institutional missions say in their pronouncements about contributing to inclusive development.

References

(1) Stonich, C., & DeWalt, B. (1996). The political ecology of deforestation in Honduras. In L.E. Sponsel, T.N. Headland & R.C. Bailey (Eds.), Tropical deforestation, the human dimension (pp. 187-215). New York: Columbia University Press.

(2) Myers, N. (1981). The hamburger connection: how Central America's forest became North America's hamburgers. Ambio, 18, 3-8.

(3) Kaimowitz, D., Mertens, B., Wunder, S. & Pacheco, P. (2004). Hamburger connection fuels Amazon destruction: cattle ranching and deforestation in Brazil's Amazon. Center for International Forestry Research (CIFOR). Recovered from http://www.cifor.org/publications/pdf_files/media/

(4) Maldidier, C. (2004). Agricultural pioneer fronts, the crest of a far-reaching wave. The social and spatial dimension of lowland colonization in Nicaragua. In D. Babin (Ed.). Beyond tropical deforestation. From Tropical Deforestation to Forest Cover Dynamics and Forest Development (pp. 185-192). Montpellier: Unesco-Cirad.

(5) Bastiaensen J., d'Exelle B., Famerée C. (2006) Arenas políticas alrededor del ac- ceso a la tierra: un diagnóstico de las prácticas de la propiedad en el interior de Nicaragua.- Cuaderno de Investigación No. 26. Nicaragua: Nitlapan).

(6) Merlet, P., Collado, C., Lemoine, L. & Polvorosa, J.C. (2015). Acceso a tierra y rutas de desarrollo en el municipio de Río Blanco. In J. Bastiaensen, P. Merlet & S. Flores (Eds.),Rutas de Desarrollo en Territorios humanos: las dinámicas de la vía láctea en Nicaragua, (pp. 191-228). Managua: UCA Publicaciones.

(7) Maldidier, C. & Martinez, S. (2015). Apoyar a una ruta campesina de desarrollo en una antigua frontera agrícola: dinámicas territoriales y prácticas de desarrollo en Rio Blanco. In J. Bastiaensen, P. Merlet & S. Flores (Eds.), Rutas de Desarrollo en Territorios humanos: las dinámicas de la vía láctea en Nicaragua, (pp. 313-352). Managua: UCA Publicaciones.

(8) Van Hecken, G., & Bastiaensen, J. (2010). Payments for Ecosystem Services in Nicaragua: Do Market-based Approaches Work? Development and Change, 41(3), 421-444.

(9) Polvorosa, J.C. (2015). Ruta de Desarrollo Lechero: el caso de Matiguas. In J. Bastiaensen, P. Merlet & S. Flores (Eds.), Rutas de Desarrollo en Territorios humanos: las dinámicas de la vía láctea en Nicaragua (pp. 125-158). Managua: UCA Publicaciones.

(10) Crucifix, C. (2015). Los desafíos de un escalamiento incluyente en la cadena del queso en Río Blanco. In J. Bastiaensen, P. Merlet & S. Flores (Eds.), Rutas de desarrollo en territorios humanos: las dinámicas de la Vía Láctea en Nicaragua (pp. 353-372). Managua: UCA Publicaciones.

(11) Bastiaensen, J., Merlet, P., & Flores, S. (Eds.). (2015). Rutas de desarrollo y territorios humanos en la vía láctea de Nicaragua: las dinámicas de la vía láctea en Nicaragua. Managua: UCA Publicaciones.

(12) Huybrechs, F., Bastiaensen, J., Forcella, D., & Van Hecken, G. (2015). Enfrentando la vía ganadera extensiva: potenciales y limitaciones de los pagos por servicios ambientales y de las microfinanzas verdes. In J. Bastiaensen, P. Merlet & S. Flores (Eds.), Rutas de desarrollo en territorios humanos: las dinámicas de la Vía Láctea en Nicaragua. Managua: UCA Publicaciones.

Acknowledgements:

This Policy Brief has been financially supported by ADA microfinance Luxembourg which works in Nicaragua with the Nitlapan institute of the Central American University and the Institute of Development Policy and Management of the University of Antwerp in the research line on "microfinance plus" or "inclusive micro-finance" and their link with territorial development.

Nitlapan-UCA

IOB
Institute of Development Policy and Management
University of Antwerp

ada