

Leasing as an alternative for financing agricultural equipment: Initial experiences from Bolivia

Le leasing comme solution alternative de financement du matériel agricole: Expériences initiales de la Bolivie

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Abstract

ANED is a financial NGO working with small farmers and entrepreneurs in the Altiplano region of Bolivia. In 1997, it introduced leasing as a new financial technology to finance investments such as motorised pumps, tractors, ploughs, solar energy panels and other items. Leasing is aimed at meeting the investment capital needs of more progressive individual farmers who are “too big” for traditional group-based microfinance loans and “too small” for mainstream financial institutions. Although still in an initial stage, it appears to be a promising approach to overcome collateral constraints of small farmers and rural entrepreneurs in Bolivia. It might also be an option in other countries, particularly in Africa, where lack of conventional collateral or legal / institutional constraints for enforcement are at the root of a vacuum of investment finance in many rural areas. Key for successful leasing is the careful selection of farmers' clients, a thorough lease appraisal and close supervision of the lessees. Collaboration with NGOs and equipment suppliers providing capacity building and technical training are important tools to reduce client-level risk.

Résumé

L'ANED est une organisation financière non gouvernementale qui travaille en collaboration avec les petits agriculteurs et entrepreneurs dans la région d'Altiplano en Bolivie. En 1997 elle a introduit une nouvelle approche, le leasing, pour financer des investissements en motopompes, charrues, panneaux solaires et d'autres matériels agricoles. Le leasing vise à répondre aux besoins en capitaux des petits agriculteurs les plus progressifs qui sont à la fois 'trop grands' pour avoir accès aux emprunts traditionnels de micro-crédits et 'trop petits' pour traiter avec les institutions financières habituelles de la place. Les résultats initiaux démontrent que le leasing est une approche prometteuse pour surmonter les contraintes de caution et de garantie auxquelles sont confrontés des petits agriculteurs et entrepreneurs ruraux de la Bolivie. Il serait aussi une option dans d'autres pays, notamment en Afrique, où l'absence de garanties conventionnelles et les contraintes institutionnelles et juridiques rendent difficile la mise en application des contrats, ce qui entraîne un vide d'investissement dans de nombreuses zones rurales. La sélection judicieuse des agriculteurs-clients, un bon processus d'évaluation et la supervision rapprochée des bénéficiaires sont les facteurs clés pour réussir le leasing. La collaboration avec des ONG et des fournisseurs d'équipement, la formation et le renforcement des capacités des clients constituent des outils importants en vue de réduire les risques chez les clients.

1. Institutional overview and financial products

1.1 Background of ANED

The *Asociación Nacional Ecumenica de Desarrollo* (ANED) was founded in 1978 by 11 NGOs engaged in capacity-building and technical assistance to rural people. The aim of ANED is to provide appropriate financial services to rural low-income clients and to administer the funds of these institutions destined for lending.

ANED now has 24 branches in eight of the nine regions in the country. The total loan portfolio at the end of 2000 was US\$7.4 million. Slightly more than half of the outstanding amount (including leasing) has terms between one and five years. Around 75 percent of the loan portfolio is for agricultural, livestock and agri-business activities. Over 90 percent of the portfolio is located in rural areas.

1.2 How micro-leasing emerged

ANED initially used two group lending technologies: *Credito Asociativo* and *Credito Solidario*.¹ Group lending is based on small and short term loans and uses group joint liabilities to deal with the lack of conventional collateral. High interest rates and lack of flexibility due to standardised loan products limit the use of this technology to the financing of working capital or very small investments with short amortisation periods.

In the course of time it became more apparent that there was a considerable demand for longer term finance by more advanced farmers and rural entrepreneurs to realise investments in items such as minor irrigation equipment, farm machinery, transport and others. The potential investors demanded these items either for use on their own farms (e.g., irrigation pumps and solar energy panels) or for providing services to other members of the community on a hiring basis (e.g., farm machinery).

Table 1. ANED's outstanding portfolio according to lending modality, end of 2000.

Financing modality	Outstanding (US\$)	%	Number of loans	%	Number of clients	Overdue amount (US\$)	% overdue
Crédito Asociativo	3,716,994	49.9	3,497	18.4	18,556	376,228	10.1
Crédito Solidario	1,810,141	24.3	13,161	69.4	13,161	200,355	11.1
Individual credit	765,454	10.3	1,483	7.8	2,483	103,288	13.5
Leasing	505,671	6.8	481	2.5	642	42,203	8.4
Credit line	212,228	2.8	20	0.1	735	40,790	19.2
Others	436,375	5.9	318	1.7	3,265	19,273	4.4
Total	7,446,864	100	18,960	100	38,842	782,138	10.5

Despite the potential of many more progressive farmers to manage these investments profitably, they are generally unable to access suitable external financing: For the reasons mentioned above they are "too big" for the traditional microlending technologies offered by ANED and others. On the other hand, they are "too small" to be considered viable by mainstream financial institutions, mainly due to lack of suitable collateral and their relatively small size. Non-financial institutions such as equipment suppliers have equally high collateral requirements – normally a mortgage on an urban property – for accepting deferred payment.

ANED first tried to provide term loans for financing tractors, irrigation pumps and other farm implements under their group lending modality *Crédito Asociativo*. However, contractual conditions did not provide sufficient motivation for repayment when guarantees proved to be inadequate. Legal action has been taken against several defaulting borrowers who had credit for equipment purchase, but almost all loans are irrecoverable.

Table 2. Outstanding loan portfolio (including leasing) according to term, 31December 2000.

Type of Loan	Outstanding amount (US\$ '000)	%	No. of loans	%
Working capital	3,819	51	16,333	86
Investment capital	3,627	49	2,627	14
Total	7,446	100	18,960	100

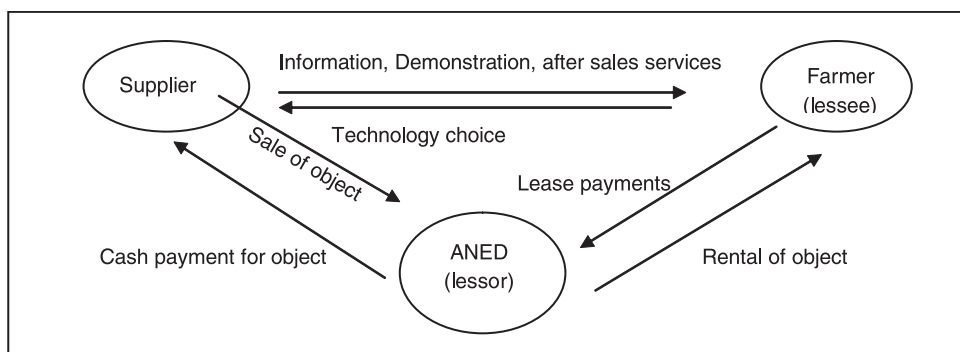
¹*Credito Asociativo* was developed by ANED to complement the technical assistance activities of other institutions (NGOs, local governments, etc.). Loans were given to pre-existing formal and informal groups consisting of at least ten people. The loans were secured by different types of non-conventional collateral such as joint liability, personal guarantors and pledging of assets. *Credito Solidario* is granted in small amounts and for short periods to informal groups using joint liability as collateral substitute. Group size is 3–8 persons.

In the second half of the 1990s, ANED therefore developed two new financial products which allow the financing of the investment needs of more advanced farmers and small entrepreneurs: term loans and leasing. Because of the widespread absence of suitable collateral in rural areas, term loans are limited to 3 years and to a maximum amount of US\$3,000. Leasing in turn is granted up to an amount of US\$30,000 and up to 5 years. This paper focuses on leasing as an innovative mechanism for financing agricultural term investments and illustrates its use for financing tractors and irrigation pumps.

1.3 Types of leasing offered by ANED

The main type of lease used by ANED is the so-called *Financial Leasing* or *Full Payment Leasing*. ANED buys an investment item selected and requested by the client, which is handed over to the farmer for an agreed period on a rental basis. The lease contract has to be registered and contains the main conditions such as lease period, residual value, purchase option, and the amount and frequency of the lease payments. The lease period normally amounts to two-thirds of the economic life of the leased asset. During this period the lessee meets all operational and maintenance costs and pays regular instalments covering capital and interest. After the lease period he has the option to buy the item at its residual value, normally 1–5 percent of the purchase price.

Figure 1. Illustration of how straight leasing works.



Source: Based on Dupleich, 2000.

The second financial product is *Leaseback* (also called *Retro-Leasing*). The client liquefies a specific asset (e.g., land or equipment) by selling it to ANED for a certain amount agreed on in the lease contract. The client can then use this amount to make other productive investments. The sold item is then leased back to the farmer who can continue using it against a periodic lease payment. At the end of the leaseback period the farmer has the option to buy back the item at the residual value. Basic parameters such as leasing rates and buy back options are specified in the leaseback contract.

1.4 Principal advantages of leasing

The core principle of leasing is the separation of legal ownership of an asset from its economic use: the leased item remains the property of the lessor (ANED) who rents it to the client (lessee) over an agreed period. This has two important advantages over a conventional term loan:

- no additional collateral requirements;
- in-kind delivery, no diversion of funds.

The relaxation of the collateral requirements is possible, because the leased asset remains the property of the lessor and therefore stands as collateral itself. In case of default the asset can be repossessed, avoiding lengthy court procedures. In the Bolivian context where settling claims and

getting court approval for seizure of property can take up well over one year this proves to be a considerable advantage.²

The Bolivian land reform law prevents small farmers whose land is qualified as "peasant holding" from mortgaging it.³ However, there are no sales restrictions on any type of privately owned land. In such a setting, leaseback as a type of "productive pawning" constitutes an alternative to the conventional mortgaging of land. The farmer sells land (or any other productive asset) to ANED, which then leases it back to the farmer. This allows the farmer to continue using the asset productively on his farm against periodic lease payments. After an agreed period the farmer has the right to buy back the asset from ANED. Depending on the price of the assets and the lease period, the sales receipts can be used by the farmer for working capital or investment purposes.

From the perspective of the financial institution, the ownership of the land which would normally be mortgaged means more security and less transaction costs if foreclosure becomes necessary. Therefore, it could offer more attractive conditions concerning the financial terms of the contract or the valuation of the land/other assets.

A major drawback to the leaseback of land is that a registered title is required to allow the financial institution to realise the market value of the land if the lessee defaults. It also requires the financial institution to have enough access to suitable medium term funds. These requirements reduce the scope for leaseback in Bolivia.

1.5 The leasing portfolio

Leasing started in 1997 on a pilot basis. Since then it has expanded rapidly. The total portfolio amounted to about US\$505,671 constituting 7 percent of the total portfolio of ANED at the end of 2000. Currently (end of 2000) ANED has 481 leasing contracts in six regions of the country, 95 percent of them for agricultural purposes. As table 3 shows, the most important items are tractors and motorised irrigation pumps.

Table 3. Most important items financed under leasing at the end of 1999.

Item	Total amount outstanding (US\$)	Share in total portfolio	Number of leases
Tractors	331,845	53.2%	19
Motor pumps	178,829	28.7%	294
Truck	17,800	2.9%	1
Ploughs	15,689	2.5%	10
Others	69,430	12.7%	31
Total*	623,591	100.0%	355

* This category includes items such as solar energy panels, sowing machines, harvesters, electric pumps, 4-wheel drives and others.

Despite the considerable growth in leasing, the outreach of the programme is still low. Until now, there have been only a few cases of leaseback. The main constraints for the clients are the absence of suitable property titles, and for ANED, the lack of funds to buy rural assets on a larger scale.

² According to Dupleich (2000) the average period is 269 days without rejection of the borrower and 670 days in case of rejection.

³ The somewhat outdated land reform law in Bolivia makes a distinction between peasant plots that cannot be mortgaged and commercial smallholder plots.

2. How leasing works in practice

2.1 Client selection

An important prerequisite to the selection of individual clients is the selection of suitable regions for the leasing programme. These must have an above-average growth potential in terms of production and marketing conditions. The local credit culture is also examined before ANED expands into a new village or region. ANED does not work in villages where, due to donor grants in the past or political organisation of borrower, the credit culture is poor. In general, the credit culture is better in regions/villages which are farther away from towns.

ANED focused initially on two regions in the Altiplano that show a high potential for success. In both cases, farmers have already received some basic training in handling of equipment and other related issues, and the commercial supply chain was already existing.

In Oruro region, motorised low-lift pumps have been leased to small farmers who grow between 0.2 and 0.5 ha of vegetables. Irrigation pumps have been introduced in the mid-1990s by a NGO, which also carried out a feasibility study for this type of investment in the area and provided some basic training for farmers. Once agronomic and economic viability have been proven and demand from the farmers created, the problem of how to finance these pumps had to be solved. ANED first provided loans under the modality of *crédito asociativo* but experienced repayment problems. In 1997, the first pumps were financed through leasing.

Tractors have also been financed in La Paz region in co-operation with a technical assistance programme funded by the Danish government through Danish International Development Agency (DANIDA). The programme aimed at increasing the productivity of small-scale dairy producers in the Altiplano, for example, through improved fodder production. Tractors have been introduced and some farmers have been trained as operators under this programme. However, a sustainable mechanism to finance the purchase of tractors was missing. ANED's leasing programme was intended to fill this gap.

Apart from technical assistance, ANED could build on a minimum degree of social organisation of the farmers, most of whom were already members of formal groups like associations of dairy producers or farmer irrigation groups. The chairmen of these groups play an important role in selecting members and supervising repayments. Sometimes they also act as personal guarantors.

Client selection was facilitated by the fact that ANED had worked for several years in these regions. Therefore, it already knew the region in terms of agro-ecological and socio-economic conditions as well as the repayment culture. In addition, it had already a client base. However, "graduation" of existing clients, who perform well under group lending, into leasing is restricted to lower cost assets such as irrigation pumps. The necessary skills are passed on in small workshop groups and through after-sales service.

For tractor leases, the most important selection criterion is the experience of the farmers in operation and maintenance and their ability to make a down-payment of 15-25 percent. Most of the clients have already worked as tractor drivers, or have been trained in dairy development projects. Thus new clients who meet these criteria and have a sound loan track can also apply for leases. Information on the credit history of new applicants is acquired through an informal exchange of information between different MFIs working in the region.

2.2 Lease appraisal

The basic assumption is that lease payments should be financed mainly out of the cash-flow generated through the productive use of the leased asset. Additional income sources are harnessed only to a lesser extent, or in case of unforeseeable downswings of the main activities. To assess all factors affecting the farmer's ability to meet periodic lease payment obligations, a detailed household cash-flow is made including all estimated farm and non-farm incomes and expenses. To avoid a financial over-commitment, a trigger is built into the appraisal procedure: the client should not spend more than 30 percent of his total net household income on lease payments.

Flexibility in determining the lease payment plan is key to ensuring timely lease payments. Frequency and amounts of payments are adapted to the main cash inflows according to the marketing

dates of the main produce, while taking into account other household incomes. Instalments may also increase or decrease during the life of the lease contract in accordance with the cash flow of the lessee. This could include staggered leasing instalments, advance payments and adjusted payments.

In case of pumps, payments are normally made in 2 yearly instalments over a period of 2 years. Varying amounts of payments according to main or secondary harvest are also possible.

The relatively low costs of the pumps (US\$ 500–700) and the similar production and marketing conditions of the farmers in Oruro allowed a higher degree of standardisation of lease appraisal. However, this has ultimately caused some problems because of the direct impact of pumps on production and a limited local market for vegetables. Prices have fallen below the historical levels underlying the appraisal, causing higher overdue rates than in case of tractors. ANED has stopped the approval of new leases in this area as the local vegetable market appears to be satisfied.

In the case of tractors, the high investment costs of up to US\$30.000 require a more thorough and individualised appraisal. The applicant has to present a detailed plan showing the projected income and costs in the use of the tractor on a monthly basis. Because of the small farm size in the Altiplano, most cash income is generated through tractor hiring services. Therefore, the applicant must prove to have a minimum identified client base. Payments frequency is agreed individually; often payments every 3 to 4 months are preferred.

Collecting all necessary information for leasing approval normally takes 3 days. A credit committee in La Paz makes approvals on a weekly basis.

2.3 Selection of equipment

The establishment of close links with equipment suppliers is crucial for the success of the leasing programme. ANED tries to establish relationships with at least two suppliers for each equipment item. It then negotiates an integrated package including price discounts for bulk purchases and the provision of training and technical backstopping services to the farmers. The risk of technical breakdown during the initial period is low, because normally the manufacturer gives a guarantee for the first year.

In the selection of equipment, ANED faces a certain dilemma. On the one hand it wants the client to choose the equipment to avoid ANED being blamed for any technical failures, which may be used as a pretext for non-payment. On the other hand, it realises that farmers often have little information and need assistance in selecting the most appropriate type of equipment suitable for their specific needs. This is especially true in the case where the applicant has limited experience with the asset, such as with irrigation pumps.

Although there is a market for used equipment in Bolivia, ANED normally leases new assets.⁴ In spite of the higher financial costs there are three main reasons for this:

- 1) The risk of technical failure and default is much lower in the case of new equipment.
- 2) Tax legislation discriminates against leasing of second-hand goods as tax deductions are only possible if a receipt for the purchase invoice of the equipment can be substituted. This leads to lower leasing rates for new equipment.
- 3) An original ownership document has advantages for the lessor should recovery be necessary.

In the case of irrigation equipment, small motorised pumps are imported from Japan (Honda, Suzuki). The farmers can choose between 4 models varying in terms of horsepower (3-5hp), price (US\$500-700) and quality. ANED chooses to work with the main importers instead of small local

⁴ Some importers and dealers of agricultural machinery and equipment recycle used machines and offer them at prices between US\$5,000-7,000. Deferred payments of up to 2 years are offered also to clients who have registered property in one of the major cities.

dealers because of their superior conditions for availability of spare-parts, after-sales service and guarantees against technical breakdown. Hoses are also supplied, whereas wells are mainly dug by the farmers themselves.

2.4 Leasing terms

The lease period depends on the value of the investment good and its expected economic life. For tractors with a purchase price between US\$20-30,000 it is normally 5 years, while irrigation pumps (US\$500–700) are leased for 2 years.

The interest rates charged by ANED for leasing are comparatively low, currently around 16 percent. This is possible because of the low costs of leasing funds provided by the Inter American Foundation. Currently, ANED is negotiating with the Inter American Development Bank for additional funding. Down-payments of 25 percent of the purchase price are a strong tool to control default and to cope with the high depreciation of the asset during the first year.

2.6 Measures to reduce lease-payment risks and induce timely payments

Some important measures to reduce lease payment risks have already been described. These include:

- collaboration with NGOs/projects providing technical assistance and capacity-building;
- strict client selection criteria;
- leasing of new equipment to reduce risk of technical breakdown;
- contracts with equipment suppliers, which include guarantees against breakdown, technical training and after-sales service;
- in-kind delivery avoids the risk of deviation of funds.

In addition, the following measures aimed at addressing moral hazard risks are applied:

- down payments of up to 25 percent of the new value of the equipment, compensating the likely depreciation during the first year;
- close supervision by inspection visits on a regular basis by ANED's loan officers;
- penalty interest rates (1% monthly) in case of default;
- social pressure is exerted, e.g., through the Chairman of a Dairy Association or by public announcements on the local radio of the names of defaulters;
- defaulting clients receive a reminder letter and after 60 days of non-payment the leased item is repossessed or juridical measures are taken.

2.7 Performance of the programme to date

The default rate of 8 percent is in fact below the average loan arrears rate of ANED (Table 1). This shows that up to now these measures have proved to be sufficient to contain the risk of non-payment of lease at reasonable levels. There have only been two cases of serious defaults where pumps have been sold by the lessees. The strict legal actions taken may have discouraged other potential defaulters. Repossession was only necessary in one case of bad management of a tractor.

Although the second-hand market for used equipment is limited in Bolivia, ANED faces a high demand for leasing. Therefore, defaulting lessees can easily be substituted by new applicants. Insurance coverage has been considered too expensive in relation to the default risk.

However, the overall default rate is somewhat biased towards tractors which dominate the portfolio. Therefore, the recent payment problems for the irrigation pumps mentioned under 2.2 are not properly reflected. However, these problems do not originate in leasing itself but in the difficulties of expanding the leasing programme in the face of limited markets for perishable produce. They

illustrate the need for a constant monitoring of market potential and trends during appraisal of financing, even of minor irrigation equipment, to ensure economic and financial viability.

2.8 ANED's future plans

Currently, ANED seeks to strengthen existing operations and to broaden the range of leasing arrangements by enlarging the number of machinery suppliers, thus better diversifying its financial risk. Two options are considered:

1. Deferred payment to suppliers, based on the performance of after-sales services and the absence of lease payment problems due to technical breakdown of the machinery.⁵
2. In case of technical breakdown the supplier has to compensate ANED financially.

The conversion of ANED into a specialised leasing company is also being considered. The advantages of specialisation lie in:

- better technical knowledge of specific types of equipment with regard to their technical and commercial conditions;
- better quality and higher efficiency of appraisal and supervision services, because specifically trained staff can concentrate on rural leasing operations; and,
- import of the most appropriate equipment for the particular needs of target clientele, which is often not available in Bolivia.⁶

2.9 Challenges

The main advantages and challenges of leasing, as compared to term-lending, are summarised in Table 4.

Table 4. Advantages and challenges of leasing in Bolivia.

	Advantages	Challenges
ANED	<ul style="list-style-type: none">• in case of default recovery easier and faster re-possession of leased assets• lower transaction costs (no collateral)• zero risk of diversion of funds	<ul style="list-style-type: none">• concentration of leasing portfolio• small second hand market for equipment• no complete coverage of default risks because of high supervision costs
Client	<ul style="list-style-type: none">• easier access to medium-term finance for investments• lower transaction costs because of no collateral requirements• better after-sales service of equipment	<ul style="list-style-type: none">• strict selection criteria (down payment, previous experience)• high financial costs of new equipment

Leasing is an innovative way to offer medium-term finance to a clientele of emerging small farmers and rural entrepreneurs who are not served by mainstream financial institutions. Despite the successful start the micro-leasing programme of ANED faces also several challenges:

- Outreach: Despite the rapid expansion of the leasing portfolio since 1997, outreach is still low. The potential to increase outreach is constrained by the limited number of farmers who meet the strict selection criteria, especially for farm machinery like tractors. Although

⁵ Each time an after-sales visit is made, the farmer should sign a receipt indicating the work carried out and the condition of the machinery in question. These receipts should assist both parties if a dispute arises.

⁶ Traditionally the imported farm machinery suits the needs of medium and large farmers who make up the bulk of demand for these items.

the emphasis on prior experience is prudent from a financial institution's point of view, ANED may have to invest more actively in training and capacity-building. This could be achieved through a broadening of the co-operation with NGOs, development projects and suppliers.

A second major constraint is the down payment of US\$5-7,000 in the case of the tractors, which may prevent even experienced farmers from having access to lease finance. A combination of leasing with special savings products might help to lower these entry barriers, but ANED as a non-regulated financial institution is not allowed to mobilise savings. Alternatively, insurance coverage would reduce the required amount for down-payment. Larger volumes would enable ANED to negotiate better conditions for prices and after-sales service with the suppliers.

- Diversification: There are undoubtedly good reasons for focusing initially on a few selected assets and regions to gain the necessary experience. However, such a portfolio concentration implies high financial risks. The further development of leaseback might provide some scope for financing assets such as buildings or tree crops.
- Supervision/Inspection: Leasing removes the collateral constraints of conventional term-lending and the problem of asset re-possession in case of default. Nevertheless, there is no clear protection against the risk of accelerated depreciation of the leased item through improper maintenance or loss. Therefore, frequent inspections are necessary if proper insurance cover is not in place. According to ANED, these problems have not yet emerged in a significant scale so far as to justify seeking insurance coverage at current envisaged premium levels. This might be partly attributable to the down payment, the careful selection of clients, and the limited outreach of the leasing programme. With an increasing volume of leasing, supervision will become more difficult and costly. On the other hand, the expansion of leasing might also encourage the development of more suitable and competitive insurance products.
- Sustainability: Because of the limited size and the comparatively high starting costs the micro-leasing programme requires a relatively large margin. Up to now, the programme has been funded at highly concessionary terms by the Inter-American Foundation. This has allowed ANED to cover the high initial cost of developing and introducing a new financial product while charging comparatively low interest rates to clients. Currently, it is difficult to give a breakdown of the costs of the leasing programme because the leasing operations are carried out by the loan officers of ANED together with their other lending activities. To reap the benefits of increased specialisation and outreach, such as economies of scale, access to a larger spectrum of funds is necessary. In the medium-term ANED will have to cut down its intermediation costs to attract commercial sources of funds. On the other hand better access to long-term funds at reasonable cost would facilitate mainstreaming of leasing, allow the use of economies of scale and provide scope for further development of leaseback. Donors could play an important role in further developing and mainstreaming micro-leasing into a commercially viable operation.

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