

The Landscape Fund

Concept Note

1. Executive Summary

We appreciate your interest in our efforts. Should you require more information, please do not hesitate to contact Andrew Wardell of CIFOR (a.wardell@cgiar.org) or Benedick Bowie of The Munden Project (benedick@mundenproject.com).

The Landscape Fund (TLF) is a network-based system for financing sustainable land use. Its purpose is to transform agriculture and forestry by delivering capital in a new way that combines innovative approaches from finance, science and technology.

TLF offers long-maturity loans for sustainable land use practices, and then securitizes these loans for purchase by investors. It is designed to service demand from small and intermediate borrowers who currently rely on high-interest credit from traders or unregulated lenders.

The Center for International Forestry Research (CIFOR) is leading the development of TLF with a diverse set of partners capable of addressing the barriers in knowledge and practice to implementing TLF. Once this framework has been designed and tested, the governance of the operational system will be handed over to vetted institutions with specific and proven expertise in the relevant areas.

Our implementation plan is focused on countries in Sub-Saharan Africa, Asia and Latin America. But this is more than good environmental or development policy: it is also a response to the fact that enduring low returns in OECD countries are pushing investors to find opportunities in new and emerging markets.

TLF does not rely on the existence of carbon markets, payments for environmental services or any other new asset class. The revenues to repay loans come from the sale of real products – that is, we count on the rice farmer to sell rice and the sawmill to sell lumber. In this way, TLF simply identifies opportunities for traditional investment in a very non-traditional way, and by introducing a unique condition: sustainability.

TLF assesses performance against the demands of planet (environmental integrity and emissions) and people (improvements in economic development and productivity). By employing a statistical approach for this assessment that is designed to lower transaction costs while maintaining high transparency, TLF will be able to do this efficiently and effectively.

“Efficiently and effectively” does not imply that TLF would only support a limited range of operations. Quite the opposite: its loans would be quite varied¹. And this diversity is as it should be, since truly sustainable land use is by definition suitably adapted to local circumstances and consequently more resilient.²

However appealing this may be from a scientific perspective, the fact remains that large-scale investors generally prefer standardized investment opportunities. It would be senseless to deal with this mismatch by forcing one of these two models to accommodate the other³.

Thus, TLF is designed to provide financing at longer maturities of up to 15 years, with borrowers able to repay loans (interest and principal) at irregular intervals, using the profits derived from the investment. Additionally, TLF’s interest rates – especially in emerging and frontier markets – will be lower than the so-called “informal credit” upon which most of the world’s producers rely.

Initial evidence suggests that the aggregated cash flows of these operations may represent a significantly under-appreciated investment opportunity. The inherent diversity of their operational risks, target markets, customers and home currencies create a compelling risk mitigation story. This is before one considers the advantage diverse practices will have in mitigating and adapting to climate change.

Enabling this to happen requires some advances in technology. This includes TLF’s securitization system, a completely transparent software suite that is designed to compose truly diversified investments by analyzing a wide range of macro, micro and non-financial risks.

The securitization process will require public assistance. Public support is needed to help TLF make investors comfortable with two undesirable attributes, each of which have posed challenges for investment schemes in sustainable land use:

1. The time sustainable land practices require to achieve a return on capital; and
2. The perceived risk of investment in new and emerging markets.

This means that TLF is more than a system; its development is based on a robust, evidence-driven implementation plan. The initial phases of this plan use public money to make initial loans, as well as to fill in some return gaps during the initial years and insure against unexpected losses that could not reasonably be anticipated by investors.

¹ World Bank, *Sustainable Land Management Sourcebook*, International Bank for Reconstruction and Development/World Bank, 2008; Foresight, *The Future for Food and Farming: Challenges and choices for global sustainability*, UK Government Office for Science, 2011

² http://www.actionaid.org/sites/files/actionaid/exhibition_document_-_final_draft.pdf;
http://www.sou.gov.se/mvb/pdf/206497_Resilienc.pdf

³ Trying to force scale via standardization is one of the errors often repeated in climate finance. One reason that carbon markets have struggled to reach scale outside the EU is that, in practice, the cost of mitigating carbon varies according to location and so a standardized price is artificial.

The system is explicitly designed to wean itself off such initial support, as evidence accumulates and investors become more comfortable with the time duration of TLF investments.

In short, our objective is to promote a diverse range of sustainable land use activities. TLF is an intelligently designed system that fuses these opportunities together while also substantiating that the result is more than just green-labeled returns. In the process, it is leveraging technology and operational knowhow in order to use the public's money more wisely.

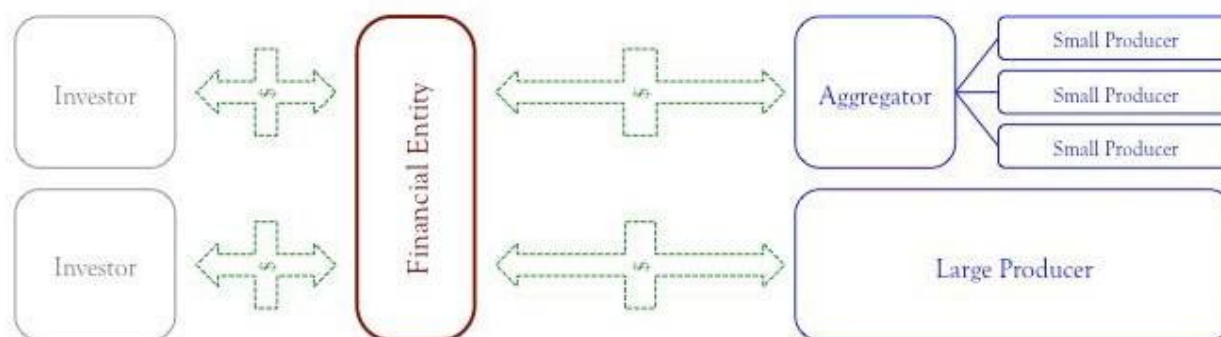
2. Frequently Asked Questions

1. How does TLF work?

TLF would distribute capital via a tight network of intermediaries standing between investors and producers, as illustrated in the diagram below.

The system's centerpiece is the Financial Entity, a global, non-profit organization tasked with identifying countries in which sustainable agriculture or forestry could be financed via existing institutions domiciled within a targeted country. We refer to the Financial Entity and TLF interchangeably in this document.

In most cases⁴, TLF would function as a type of “discount window”⁵ that provides financing at longer maturities and lower interest rates than generally available, particularly in rural areas of developing countries.



In the main, the counterparties to these loans would not be producers. TLF would instead make its loans to Aggregators who, as their name implies, would make large numbers of loans to producers in their respective countries or regions. We have developed a specific plan for identifying and attracting Aggregators, but we expect the majority of these to be rural credit institutions making client loans and producers' organizations lending to their members.

TLF includes a Sustainability Verifier, an independent organization charged with delivering tangible evidence that the individual Aggregators and TLF as a whole are delivering sustainability.

⁴ The Financial Entity would only engage in direct transactions with producers of very considerable size, and for whom continued access to credit is important.

⁵ See <http://www.newyorkfed.org/banking/discountwindow.html> for an explanation of this concept.

Although it will employ strategic verification techniques (described below), it will also be expected to produce regular audit reports and conduct site inspections. Aggregators would be judged on the basis of these reports and inspections.

Initially, an Aggregator’s total lending amount would be restricted, with expansion allowed only as results from the verification process become evident. Non-performance would result in immediate payment of any existing loans and exclusion from TLF.

In cases where performance is acceptable, lending activities would be expanded aggressively. These loans would generate a stream of repayments from the producer to the Aggregator. After taking a regulated “spread” to ensure profitability, the Aggregators would use the remaining cash to repay their TLF loans.

This would happen simultaneously across a number of different countries, with the resulting pool of payments being securitized using a public-domain software program that would arrange the payment flows into optimally low-risk combinations. The Financial Entity would then sell these securities to investors in order to finance its lending operations.

2. What are TLF’s sustainability criteria?

In general, our conception of “sustainability” is driven by outcomes. That is to say, we think TLF should look for results that encompass a range of aspects, specifically:

- x Improved rural livelihoods, including economic development and community resilience;
- x Enhanced environmental integrity, including improved biodiversity and reduced environmental impact of agriculture/land use;
- x Enhanced food security, focusing especially on sustainable intensification of agriculture.

As outcomes, these are easily understood and resonate well with development goals expressed at international and country levels. We see no controversy in stating that the mechanism should, along with the objective of generating financial returns, contribute to positive developments for each of these outcomes.

But we require measurable specifics for TLF to work. Accordingly, TLF will use four variables that correlate, at a general level, with the sustainability outcomes⁶, and can be readily and cost-effectively monitored:

Outcome	Variable
Livelihoods	Income of producers (in \$/hectare)
Environmental integrity	Level of production (in tons per hectare for each product)
	Landscape ecosystem services (in tons of biomass per hectare)

⁶ In making these initial suggestions, we are well aware of (a) potential limitations in how well the parameters actually represent the outcomes, (b) the need for continued scientific evaluations – especially regarding the validity of the proposed parameters in relation to biodiversity, (c) the need to consider other potential parameters, including a parameter to measure improvement in producer institutions and (d) the need for further specification of the actual metric to be applied for each parameter.

Food security	Resource use efficiency (in GHG emissions, CO ₂ equivalent, per ton of product)
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We refer to the type of monitoring to be applied by the Sustainability Verifier as “strategic”⁷. Strategic in this case denotes a requirement for overall accuracy, but not for complete coverage of information. It implies a sample-based approach through which the variables in question are measured in detail and the sampling frame ensures overall accuracy and cost-effectiveness.

Science and practical experiences, for instance from national forest inventories⁸ and from population/household surveys, provide us with solid and sufficient knowledge on how to go about the strategic monitoring of the above variables.

We have produced a document that details and substantiates this approach based on a simulation of the results of case studies drawn from eight countries or production types. This will be made available on TLF’s host website.

3. Why would you expect this to work?

First, we depart from a history of complex indicator systems in sustainable development theory and politics. Deploying these systems can be prohibitively expensive and may not necessarily provide clear measures of progress⁹. These examples therefore provide a poor starting point for effective verification approaches, and we have made a conscious decision to avoid repeating these mistakes (we may be making new ones, of course!).

This is why our approach focuses on simple, measurable variables that are common and comparable across landscapes. Just as importantly, TLF uses a statistical method that measures the *progress* against these variables (as opposed to their absolute level). In this way, we hope to avoid scenarios where already sustainable practices are employed to give the impression of real change.

As stated, we expect this to result in a lower transaction cost. But this is just part of the story: we also felt that TLF needed to be designed to ensure that the verification would really provide an incentive to maintain sustainability performance.

Particularly in agriculture, one of the major reasons a traditional credit model would not work is that credit is extended on such short timeframes that sustainability becomes an “externality”. Even if a

⁷ For a general background, see Jonsson, B., Jacobsson, J. & Kallur, H. 1993. The Forest Management Planning Package – Theory and application. *Studia Forestalia Suecica* 189. ISBN 91-576-4698-8 <http://pub.epsilon.slu.se/4062/1/SFS189.pdf> (accessed 6 Feb 2012). For an application of the concept of REDD+, see Holmgren, P. 2011. Monitoring and Information for REDD+ Interim Report. UN-REDD Programme. http://www.unredd.net/index.php?option=com_docman&task=doc_download&qid=5971&Itemid=53 (accessed 7 Feb 2012)

⁸ Tomppo, E., Gschwantner, T., Lawrence, M. McRoberts, R.E. 2010. National forest inventories – Pathways for common reporting. Springer. ISBN 978-90-481-3233-1

⁹ Public sector examples include indicators for the Millennium Development Goals indicators (analyzed by Attaran 2005), Criteria and Indicator Systems for Sustainable Forest Management (Raison et. Al. 2001), and Sustainability Indicators for Bioenergy (GBEP 2011). Similarly, private sector/non-government solutions, such as forest certification systems (Rametsteiner & Simula 2003) and the Verified Carbon Standard (VCS 2011), tend to become very complex as they attempt to mimic political agreements.

lender *wanted* to drive sustainable land use in its portfolio, there is no basis upon which to require performance.

TLF takes a different approach. Aggregators are counterparties to the Financial Entity over longer timeframes, which means that failure to perform can result in the Financial Entity “calling” the loan and demanding immediate repayment. In addition, Aggregators’ ability to expand their TLF lending is phased in. Assuming TLF lending is a profitable business for them, this gives Aggregators an additional incentive to perform.

There are also some advantages inherent in TLF’s portfolio approach. Particularly where climate finance is concerned, large projects and bilateral initiatives have a perverse political incentive: they cannot be allowed to fail, creating a sort of well-intentioned moral hazard.

TLF avoids this problem by building one large initiative out of many small ones. No single loan, country or production line would be so important that TLF could not afford to exclude it from the system. This means that performance-based audits are more likely to result in exclusion from the system when they uncover malfeasance, fraud or non-performance.

4. Why would this make sense for farmers, forest owners, etc.?

TLF would employ a unique aspect of credit – flexibility – to maximum effect. When we refer to the ‘flexibility’ of credit, we are referring specifically to three attributes: maturity, repayment frequency and interest rate.

- f* **Maturity** is the duration between the moment the loan or bond’s face amount is disbursed and the time by which full repayment (interest included) is supposed to have been made¹⁰.
- f* **Repayment frequency** denotes the interval (annual, semi-annual, quarterly, etc.) at which payments are made on the bond or loan.
- f* **Interest rate** is the price that the borrowers agree to pay in return for the money they are borrowing. This is usually expressed as an annual percentage of the bond or loan’s principal amount, which is the amount of money that the borrower initially receives.

TLF is designed to provide financing at longer maturities of up to 15 years. We consider the more conventional model of matching operating loans to single growing seasons to be inherently ill suited for sustainable land use¹¹. By contrast, our objective is to provide financing that will continue until

¹⁰ To make the document more accessible, we have used the term “maturity” to cover “tenor” as well. These are sometimes interchangeable, but we should note that when dealing with loans, the latter term tends to prevail. Also, tenor can refer to the time remaining on an active loan before repayment.

¹¹ To cite one example, research from Zambia shows that it took 4 to 6 years for farmers to see yield improvement after planting *Faidherbia albida*. These trees need time to install their root systems, which together with their nitrogen-rich leaves improve the soil. Under a short-maturity approach, financially sustaining this sort of activity is impossible. Even from a financial perspective, this is clearly dysfunctional given that the yields of maize and other staples in the Zambian project showed massive improvement over 4-6 years. See Garrity et al., “Evergreen agriculture: a robust approach to sustainable food security in Africa”, August 2010 ftp://ftp.fao.org/ag/agp/ca/CA_CoP_Jan11/Evergreen_Agriculture_Garrity_et_al_Food_Security1%20.pdf

yields have improved or other benchmarks of productivity and efficiency have been met. In this way, loans can be repaid out of the profits derived from the investment.

The question of timing also extends to the frequency of payments. Traditionally, debt service happens on a very regular basis (i.e. monthly, quarterly) for all but the largest borrowers. Yet sustainable practices do not operate according to entirely predictable time frames. A maize producer implementing organic fertilizer systems may see relatively immediate results but it may take a longer time to maximize productivity.

For this reason, TLF's architecture allows it to tailor repayment frequencies to borrowers' needs. That is, borrowers should be able to repay loans (interest and principal) at irregular intervals, using the profits derived from the investment.

Finally, TLF is designed to make interest rates as low as possible, since beneficiaries of the loans will not be able to sustain high levels of indebtedness. If interest rates are too high, borrowers will default on their loans, and the demand for credit may be too low to make a real difference. The reason this can be done in a way that interests investors is explained on page 12.

5. And what would be offered to TLF's investors?

TLF would offer securities backed by diverse pools of payments from the credit that the Financial Entity and its associated Aggregators extend to producers. This differs from many climate finance approaches, in that both the composite asset and its underlying components are familiar to investors.

This is important because, regardless of their success in delivering public goods, sustainable land use activities remain unfamiliar to investors. This unfamiliarity presents a major impediment to accessing investment.

TLF's use of cash flows derived from credit would break down this barrier. From the mechanics of lending to risk modeling, credit is a well-understood area of finance with a large pool of existing investors. The language of credit is global, and as a result, the task of demonstrating the value that TLF's securities would have would become infinitely easier relative to other possible investment opportunities¹².

6. What makes you think investors would be interested in this?

In plain terms, profit and size. That is, we expect that TLF would be capable of producing competitive returns and the size of the overall opportunity in rural credit is, for all intents and

¹² This approach avoids a major issue encountered by carbon: namely, the need to engage in expensive sales processes to convince investors of the viability of the asset. Driving capital to sustainable land use practices has proven difficult to implement for this reason. In 2010 the estimated value of transactions in forest carbon markets totalled just \$178 million, which was a record high (http://www.forest-trends.org/documents/files/doc_2963.pdf). Compare this to the \$30bn UN REDD wants annually (<http://www.un-redd.org/AboutREDD/tabid/582/Default.aspx>). See also <http://www.mundenproject.com/forestcarbonreport2.pdf>

purposes, limitless. Obviously, the performance of TLF lending will determine whether our expectations are met.

However, we have examined revenue and expense data for 17 different land use practices in 11 different countries. Over a 10-year period, these practices can be made highly profitable, with internal rates of return in the range of 12% to 20%, with the vast majority of scenarios falling above a 16% threshold. This compares favorably to global listed equities¹³, United States real estate¹⁴ and private equity buyout funds¹⁵.

Additionally, the TLF Securitization System (TLFSS) will make it possible to bundle loans into a security that matches the cash flow requirements of investors. These securities could be tailored to provide any number of different kinds of income streams as investor demand requires.

7. What type of investors would TLF appeal to?

We have not focused this design on socially responsible investment (SRI) because that group of investors does not control enough capital to support the system's end objectives. This is not to say that SRI is not a potential market for TLF, but the Wall Street Journal suggests that SRI funds, at more than \$100 billion are "still tiny compared with the \$7 trillion invested in all stock mutual funds and ETFs¹⁶."

To access larger pools of capital, TLF will need to have a purely financial appeal to investors who are only interested in the bottom line. Not only do we believe that our design blends the right elements to do this, but we think the current context makes it likely that TLF will find a more receptive audience.

For example, consider pension funds. As populations age, workforces are shrinking and provision of the support and benefits needed by the elderly becomes increasingly difficult; old age dependency ratios in the OECD are projected to reach 50% by 2050.

And yet, these funds are well behind where they need to be to meet these liabilities. In the United States alone, state pension funds have a gap of between \$700 billion and \$3 trillion¹⁷. In the United Kingdom, the shortfall is somewhere in the region of \$1.7trillion¹⁸. On the private side, the world's 100 largest multinational companies had a combined pension deficit of \$400 billion in 2011¹⁹.

¹³ 10 year average rate of return: 5.88% (MSCI ACWI as of August 8 2013
Source: MSCI <http://www.msci.com/products/indices/performance.html>

¹⁴ 10 year average rate of return: 10.28% (MSCI US REIT Index Total Returns as of August 8 2013
Source: MSCI http://www.msci.com/products/indices/country_and_regional/domestic_equity_indices/reit/performance.html)

¹⁵ Harris, R. S., Jenkinson, T., & Kaplan, S. N. (2012). Private equity performance: What do we know? (No. w17874). National Bureau of Economic Research.
<http://faculty.chicagobooth.edu/steven.kaplan/research/HJK.pdf>

¹⁶ <http://online.wsj.com/article/SB10001424052748704425804576220462961462024.html>

¹⁷ <http://www.cbpp.org/cms/index.cfm?fa=view&id=3372>

¹⁸ <http://citywire.co.uk/new-model-adviser/public-sector-pension-liabilites-balloon-to-1-1-trillion/a507884>

From our perspective, pension “reform” that involves cutting benefits will not happen in Western democracies. The only realistic option is to find a way to generate higher returns. At the same time that these opportunities need to carry comparably high returns, they also need relatively low risks.

On all three counts, we believe TLF can be constructed to deliver the right product: stable, intermediate-term securities with comparatively high coupons whose diversity was engineered to reduce risk. Due to the disproportionate amount of time financial engineers have spent developing short-term speculative innovations, these more boring securities are in very short supply. We therefore think that – if a track record of success is established – TLF will prove quite interesting to pension funds and other large asset managers.

8. How does TLF ensure genuine sustainability?

The Sustainability Verifier will generate evidence for investors, public institutions and all other engaged stakeholders that both the mechanism and the individual Aggregators are delivering sustainability, as defined by steady improvements over time for each of the outcomes. It will, for example, be expected to produce regular audit reports and conduct site inspections.

9. Does TLF require public support?

Yes. This is because we have an investment theory, not an investment fact. Demonstrating that our idea can work in practice will require tangible public support. This involves funding TLF’s construction and offering targeted support for its ongoing operation. However, as a track record is developed public funding can drop away, making TLF a cost-effective strategy for the delivery of public goods.

Initially, this support will come in the form of targeted support for the research and development required to take TLF from the concepts described in this paper to an actual, implementable system. We feel strongly that the condition for those investments should require that those involved in the research and development process:

- 9 Commit to releasing any and all innovations (such as the securitization software described above) into the public domain
- 9 Refrain from any investment in securities that TLF might generate
- 9 Refrain from having TLF invest in any production operations (i.e. a farm or forest) they own or control

We have developed specific proposals for this research and development process. These cover a two year preparatory period - during which we will fill data gaps, engage with key stakeholders and refine the design of the system and its methodologies – and a two year pilot period. The relevant details are laid out at greater length in the third section of this note.

10. What about public support after that preparatory period?

¹⁹ Lane Clark 7 Peacock <http://www.lcpbe.com/media/3961/LCP%20European%20Pension%20Briefing%202011.pdf>

The second form of public support TLF requires is for the securitization process (which is described in the third section of this note). Specifically, TLF should adopt a ‘belt-and-suspenders’ approach that asks the public to provide both default insurance (the belt) to cover the risk of non-payment and external credit enhancement (the suspenders)²⁰ to ensure timeliness of repayment. We refer to this as the Protection Fund.

The Protection Fund would act as a form of guarantee, offering compensation to investors who lose their investment due to default or delayed repayment. This would significantly improve the risk/return profile for investors²¹.

Indeed, a dedicated Protection Fund established by the public sector is likely to be very attractive to investors. Such a fund would be especially important in the early stages when there is no operational record of accomplishment to draw on – and consequently, no concrete indication that the bonds will provide a return.

11. Isn't this just another public subsidy for private profits?

No. This is not a giveaway. Investors buying the securities would still bear risks that should reasonably remain in their purview. We can draw the line by asking two questions:

- i. Can the investor reasonably quantify and understand the risk?
- ii. If so, is the risk so large that the investor will be unable to invest?

Let us assume the existence of an investor who specializes in infrastructure, specifically bridges. The investor targets a specific country in which to build some freight bridges, where the costs are defrayed by tolls levied on goods transported across the bridge. Now assume that the public needs this new freight bridge to be built in a risky area. In this scenario, public money should be targeted towards taking some of the risks off the table, but not all.

If the bridge is in a conflict zone, the public might help by providing protection against it collapsing due to sabotage. On the other hand, if the bridge collapses because the investors squeezed their contractors or used substandard labor, they need to bear that loss. And if the bridge does not pay off because not enough freight is being hauled across it, that risk also properly belongs to investors.

In other words, TLF would provide a sensibly delimited form of public support – not a bailout covering all possible losses.

12. Who would back the Protection Fund?

²⁰ Credit enhancement is an important tool for risk management. A number of multilateral development agencies currently offer credit enhancement, such as the Asian Development Bank (<http://www.adb.org/sites/default/files/managing-credit-products-workshop.pdf>). Some unilateral programs, like USAID, also provide credit enhancement through specialised arms like the Development Credit Authority. The most common use of credit enhancement is probably to increase access to housing.

²¹ For a comparable approach see http://treasury.worldbank.org/bdm/htm/credit_enhancement.html

This is an important question, since the quality of any default insurance or credit enhancement depends entirely on who provides it. Accordingly, this is reflected in credit ratings agencies' methodologies²² and we have spent considerable time examining these to form an opinion on how TLF should work in this regard.

If TLF's pool of support is provided by strong entities, the risk to the overall investment is reduced. We have seen examples of this in practice: for instance, the use of USAID agricultural credit enhancement in Afghanistan has significantly increased access to credit in a risky context²³.

We envision the Protection Fund blending default insurance with multiple forms of credit enhancement, both internal and external. Its specifics might look something like this:

Type	Description	Provider(s)
Default insurance	Provides coverage to Financial Entity's bondholders in the event the Financial Entity cannot repay its bonds.	Public
DSCR (Debt Service Coverage Ratio) guarantee	An insurance that the money available to the borrower will always match a pre-determined percentage of each debt repayment	Public
Overcollateralization	The process of posting more collateral than is needed to obtain or secure financing.	Financial Entity and Aggregators
Weather indexed insurance	Facility designed to insure producers against disruptions due to climate events	Public or private

To complement the Protection Fund, public sector investment should also be used to leverage existing insurance facilities such as²⁴:

²² See, for example, Standard and Poor's, *Project Finance Construction and Operations Counterparty Methodology* (December 20, 2011)

²³ http://afghanistan.usaid.gov/en/USAID/Activity/180/Agricultural_Development_Fund_ADF_and_Agricultural_Credit_Enhancement_ACE; see also <http://www.forumforthefuture.org/sites/default/files/project/downloads/forestinvestmentreviewfull.pdf>, p36-40

²⁴ Andrew Gaines and Jon Grayson, *The Potential of Risk Mitigation Mechanisms to Facilitate Private Sector Investment in REDD+ Projects*, Chapter 4, Forestry Investment Review, Forum for the Future, July 2009
<http://www.forumforthefuture.org/sites/default/files/project/downloads/forestinvestmentreviewfull.pdf>;
<http://www.opic.gov/news/press-releases/2009/pr110911b>

- Non-commercial guarantees (in effect risk insurance) for investors and lenders provided by the World Bank's Multilateral Investment Guarantee Agency (MIGA)²⁵;
- Credit guarantees (enhancements) for local currency debt exposures in emerging markets provided by GuarantCo, a private–public financial institution²⁶;
- Political risk insurance for REDD+ projects provided by the US-based Overseas Private Investment Corporation (OPIC) (the first product was signed off in November 2011)²⁷;
- Special insurance for small and medium-sized enterprises (SMEs) and cooperatives, which otherwise find access to such facilities difficult, e.g. provided by companies established to improve financial flows to forestry²⁸.

Dedicated facilities could be established within MIGA and/or GuarantCo that are streamlined and less expensive for investors to use, for example through subsidized insurance (or guarantee) premiums for investors²⁹.

13. Why doesn't something like TLF already exist?

The ideas that form TLF are not novel concepts. The basic importance of extending affordable finance to rural areas is well understood, as is the idea of promoting sustainability via public investment. And the importance of returns in attracting private investment is elementary to all finance.

The problem lies, not with these individual points, but rather in our inability to address their respective shortcomings through an approach that synthesizes their advantages and imperatives. Doing so requires attacking three problems:

1. Private financial systems in rural areas are not working
2. Public resources to fill this gap are lacking
3. Most investors are required to seek return on capital, not social, governance and environmental impact

²⁵ See <http://www.miga.org/investmentguarantees/index.cfm>

²⁶ See <http://www.guarantco.com/>

²⁷ See <http://www.opic.gov/>; <http://www.opic.gov/insurance/coverage-types/political-violence>; <http://www.opic.gov/news/press-releases/2009/pr110911b>

²⁸ Andrew Gaines and Jon Grayson, *The Potential of Risk Mitigation Mechanisms to Facilitate Private Sector Investment in REDD+ Projects*, p113-114, Forestry Investment Review, Forum for the Future, 2009; See also <http://www.deriskas.com/index.html>; <http://www.access-to-insurance.org/>

²⁹ Drawing on similar recommendations by Gaines and Grayson for REDD+.

With respect to the first issue, we have to recognize that the financial system is not designed to service the rural economy. It prefers standardized, quick and clean investments, which is why the International Food Policy Research Institute noted in 2010 that:

Most rural households lack access to reliable and affordable finance for agriculture and other livelihood activities. Many small farmers live in remote areas where retail banking is limited and production risks are high. The recent financial crisis has made the provision of credit even tighter and the need to explore innovative approaches to rural and agricultural finance even more urgent³⁰.

This would be easier to solve, but for the fact that public resources are scarce. In particular, public institutions in OECD countries are under extraordinary pressure due to alarm about high debt levels. Additionally, emerging economies either lack the political consensus or balance sheet strength to make these investments at scale.

This means that sustainable land use requires private investment. Here, we run into a third problem: private investment will not flow on a large scale to sustainable practices because they are the right things to do. They will only do it for profit.

Outside the financial sector, many make the tacit assumption that investors deploy their own capital. In reality, most investors have investors of their own to satisfy and can be fired at will if they fail to perform. This explains their laser-like focus on returns, and means that an advantageous balance between risk and reward is the only way to draw their capital into sustainable land use.

³⁰ Kleopfinger-Todd and Sharma (eds.), *Innovations in Rural and Agricultural Finance*, IFPRI, 2010

3. Overview of 4-year preparatory and pilot phase

This paper is the beginning of a process that intends to lead to concrete actions. We recognize the need for further consultations, scientific research, development and testing to make this mechanism a reality.

In doing so, we have identified several questions that will have to be answered. The most important long-term question is:

How will we know that TLF is delivering on its ambitious promises of providing credit to those who need it most in a manner that helps them, supports the interests of the investors and benefits the environment and society?

The answer is that we would first pilot test TLF at a safe but representative scale. This means that the most important near-term question is:

How do we design a pilot test of TLF (and with whom) so that we can establish whether it works, iron out inevitable problems and create investor, client and intermediary confidence based on the resulting evidence?

In a number of areas TLF is well advanced:

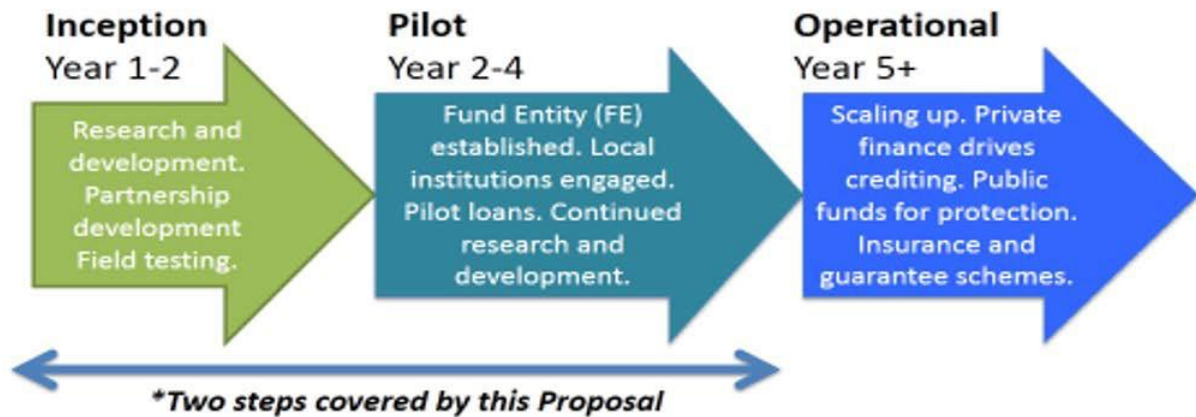
- 1) We have developed criteria selection and applied them to countries and organizations to draw up a set of target countries and a list of candidate Aggregators.
- 2) We have started to fill in some of the key data gaps through literature reviews on topics like default rates and market access.
- 3) We have examined the tools commonly used to value rural activities and have suggested new standards that actually reflect solvency.
- 4) As noted, we have made considerable progress on developing the monitoring and verification system.
- 5) We have identified a range of sustainable activities with proven revenue potential, some of which have been innovated by TLF partner organizations, which can be handed to Expanders and Producers.
- 6) We have reviewed a number of financial products and services, focusing in particular on insurance, which might be bundled with TLF loans.

However, we recognize that there are some important gaps to fill over the coming months if we hope to implement TLF. The following pages outline our plan of action for operationalizing TLF.

Components and Main Activities

The Fund will consist of a three step approach: Step 1 (Inception), Step 2 (Pilot) and Step 3 (Operational). The Inception and Pilot steps in this proposal will be built on 4 main components

and 1 overarching knowledge-sharing and outreach component. Cumulatively, the components of the inception and pilots phases, described in detail below, will either enable implementation readiness or prove that this approach is not viable.



Component 1 tackles the information problem: as noted, the major obstacles to implementing TLF, or indeed any rural finance initiative, include data gaps. Through Component 1 we aim to generate the required evidence base, including information on the partners; investor audiences; practices; institutional structures; and verification systems.

Component 2 is a piloting process to establish where TLF should operate and with who. This provides us with an effective framework for identifying, selecting and incentivizing key stakeholder groups. It will also allow us to test our assumptions about management structures, sustainable practices and credit delivery conditions. Given the importance of on-the-ground partners in TLF's successful operation, understanding how to motivate and manage these actors, and in particular the Aggregators, will be crucial in demonstrating viability. By the end of this component we will be disbursing pilot loans, beginning the process of developing a track record for TLF.

Component 3 will concentrate on developing the tools that enable a secondary market via the securitization of loan portfolios. This component is specifically concerned with designing and testing software that identifies and then mitigates risks across a loan portfolio. In addition, this component includes the creation of technical software that enables TLF to issue securities.

Component 4 synthesizes the outputs of the previous components to make decisions and recommendations about how TLF will operate at scale. Building on the results of the pilot phase, Component 4 outlines a detailed and substantiated implementation strategy capable of persuading key stakeholders, including commercial investors, of the immense potential of TLF.

Component 5 fulfills the learning and pedagogical functions of TLF by communicating the key findings of the research and development process. This will serve to improve comparable initiatives and plug persistent holes in the discourse. At the same time, honest presentation of the facts should

serve as a marketing exercise to generate broad-based support for TLF’s implementation and operation.

Component	Y1Q1	Y1Q2	Y1Q3	Y1Q4	Y2Q1	Y2Q2	Y2Q3	Y2Q4
1: Development								
2: Testing								
3: Securitization								
4: Scaling up								
Component	Y3Q1	Y3Q2	Y3Q3	Y3Q4	Y4Q1	Y4Q2	Y4Q3	Y4Q4
1: Development								
2: Testing								
3: Securitization								
4: Scaling up								

x Component 1: Scientific approach and methods for generating the evidence-base

Under this component, we will generate the evidence-base needed for the design, pilot, and potential scaling-up of the Fund. The aim here is to ensure that we are employing the right scientific approach and devising the right methodology to get data that will be crucial to TLF’s implementation. These are by no means academic points – for example, we need rock solid information about the operating environment and potential counterparties. In short, this component lays the foundations upon which the rest of the system rests.

Activity 1: Analysis of key stakeholders

Mapping the actors with which TLF will or might interact – from small producers to large asset managers – is a necessary condition for implementing TLF. We need to know who to target and how we can persuade them to engage.

This mapping process is well underway, and we have developed preliminary engagement strategies for key stakeholders. An interim report mapping each stakeholder group and outlining a detailed engagement strategy will be delivered at the end of the first year. These will be enlarged and completed, with the addition of results from initial engagement efforts.

Activity 2: Selection of potential aggregators in target countries

There are three types of aggregators - innovators³¹, expanders³², and credit institutions³³. For each category we have already developed a set of selection criteria which we have used to generate a list of candidates in each of the countries targeted in the pilot phase.

During the inception phase this activity will finish the following tasks:

³¹ Innovators are institutions that develop sustainable practices.

³² Expanders are the groups that disperse capital to farmers and transfer knowledge from Innovators to the field.

³³ Credit institutions provide the expanders with a line of credit.

- 1) Improve and finalize the selection criteria (6 months after starting)
- 2) Update but narrow down the candidate list (9 months after starting)
- 3) Create template contractual agreements (12 months after starting)
- 4) Finalize candidate shortlists (18 months after starting)
- 5) Commence the selection process for additional countries (24 months after starting)

Activity 3: Assessment of best sustainable land-use practices

Only the very best innovations, which will include a number that have been developed and tested by CIFOR and project partner ICRAF, will be recommended for dissemination. At the same time, we will determine how these practices should be distributed at the individual and portfolio level.

The sustainable practices we have already identified will be compiled into a list as part of a formal, publicly accessible document as soon as 3 months after the start of the inception phase. This would then be shared and updated constantly, with formal revision every 3 months and peer review every 6 months.

Activity 4: Assessment of governance structures and options for the financial entity (FE)

This activity will investigate how TLF should be governed to ensure that it is accountable and efficient. The main aim here is to refine our proposed governance structure and draw up contingency plans.

The key tasks here include: a comprehensive review of comparable funds and initiatives, particularly those specifically designed to reduce risks in land-based investments³⁴; assessing options for the establishment of Financial Entity (FE); cost-benefit analyses for TLFSS³⁵; setting benchmarks for commercial, social and environmental performance; options for Independent Sustainability Verifiers (“Sustainability Verifiers”); discipline for underperformance; protocols for storing and using information; and assessing regulatory compliance.

Activity 5: Research and development of a verification system for sustainability outcomes

The first part of this activity will include design and testing for: standardized measures that can be adapted and replicated across different country locations; statistical design; field measurement methodologies and technologies; reporting processes; validation approaches; and data collection standards.

It will also consider implementation options by developing and testing integrated hardware and software systems that enable remote monitoring of a large number of data points at a low and falling cost. The Munden Project will be releasing open source designs in the coming months.

³⁴ Including i.a. OPIC REDD+ political risk insurance – up to US\$250m; The World Bank Group’s Multilateral Investment Guarantee Agency – up to US\$220m; the potential to adapt the World Bank’s Global Index Insurance Facility to develop index-backed agricultural insurance programmes; The African Union’s African Risk Capacity Agency; and the Critical Ecosystems Partnership Fund established in 2000 with funding from the Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank.

³⁵ For example, a standard option of securitization processes is for the issuing entity to assume possession of the loan receivables and then package them into securities sold to investors. But this process often lacks in transparency; if the Financial Entity is a non-for-profit, then transparency will be increased to the point where investors, using the ISS software system, may be able to create individual securities.

Activity 6: Refining methodologies for assessing creditworthiness and disbursing capital

At present there is no clear standard that reliably assesses the solvency of borrowers. Many of the most commonly used metrics – such as NPV – are not fit for purpose: they do not give a picture of whether a borrower can keep up with a repayment schedule.

In response we have been developing a new standard for assessing solvency based on a Free Cash Flow (FCF) approach. We will detail our methodology for capital disbursement in a paper released 9 months into the inception phase. This approach will then be tested prior to the pilot phase.

Activity 7: Options for bundling additional products and services, like insurance, with credit

This activity will also look at the design, creation and implementation of bundled financial products, focusing initially on insurance. We have already started to investigate the viability of an internal “Insurance Pool”.

We will establish whether external insurance schemes could be integrated with the Insurance Pool, while also defining an ideal size and timeframe for the pool to grow. We expect to be able to provide a detailed assessment of insurance options within 6 months of starting the project. After 12 we will have a complete list of additional products and services.

x Component 2: Pilot Demonstration of the Fund

TLF is complex and innovative, so it’s a virtual certainty that we have made mistakes in its design. This Component seeks to find those mistakes through testing, culminating with initial loan disbursement. This process requires all of the constituent elements of TLF to be in place, if not finalized. The results of this Component will lay the groundwork for full scale implementation.

Activity 1: Selection of pilot locations and set up

We have already developed a selection criteria for the candidate countries. This has produced a short-list of suitable countries drawn from each major developing region, which we intend to target during the inception and piloting phases. These countries are: Bangladesh, the Philippines, Brazil, Colombia, Ethiopia and Benin.

However, this is not a final selection. During the first 3 months of the inception phase we will vet these choices and consider additional candidates. After 6 months we will produce a report ranking candidate countries and outlining possible combinations for a portfolio. This document will then be updated every 3 months.

Activity 2: Attracting aggregators

Each of the three aggregator types needed for TLF – credit institutions, expanders and innovators require a specific engagement strategy to generate direct incentives for initial engagement.

Credit institutions: The incentives for these actors focus on reducing the risk exposure and shouldering the key costs. From a near-term perspective these include:

- 1) A guarantee provided by the Financial Entity: We aim to have the design and terms of this guarantee in place by the end of 2014 but we will propose that TLF should guarantee a return close to the average spread. This would still provide incentives for performance, but would radically reduce risk.

- 2) Pre-packaged monitoring and reporting systems: These can be used to trace the performance of borrowers and expanders to build the evidence base needed to remove the need for publicly subsidized risk mitigation tools.
- 3) A differentiated credit product: Given historical problems with rural credit, a new start should be attractive to credit institutions.

We are currently developing a communications strategy to articulate and disseminate these messages, which we expect to implement by three months into the inception phase.

Expanders: The main benefit of TLF for Expanders is a new line of credit. In markets where agricultural finance is scarce, this is a considerable carrot. In addition, expanders will be provided with a pick of proven sustainable practices, which they can transfer to their borrowers.

Expanders will gain access to networks and services normally exclusive to much larger institutions. For example, they will receive technical support to assess credit worthiness and in interacting with local and national officials.

Innovators: TLF's main attraction for these groups is that it provides them with implementation capacity. But we also want to provide innovators with an incentive that holds currency for their primary interest – research.

By providing a new, reliable standard for valuing rural activities we can significantly enhance both the discourse and the results the Innovators contribute to. We aim to finalize our Free Cash Flow (FCF) metric and the associated data collection techniques 6 months into the inception phase

Activity 3: Identification of sustainable land use practices to be financed

Building on the results of Component 1, Activity 3 this activity will produce and test the list of sustainable practices TLF will champion. As noted, this list must be comprised of a diverse range of practices with both environmental benefits and proven revenue potential. We aim to have a final list in place 9 months after the start of the inception phase, so Expanders have plenty of time to consider their options.

Each practice on the list will then require a manual of best practices, which will include suggested combinations of activities, complete with cash flow models. These manuals will provide Expanders with a powerful marketing tool and we hope to complete them 12 months into the inception phase.

Activity 4: Piloting test loans

As noted in previous Activity descriptions, this process will robustly evaluate the performance of key parts of the system, from the governance structure, to the aggregators, to the monitoring and verification system. But barring problems in these areas, this activity will assess – among other factors - appropriate interest rates, solvency evaluations, disbursement methods, repayment schedules, bundling options, and transaction costs.

We will prioritize loans for women and other marginalized groups and develop differential loan terms and conditions that recognize the special needs of women farmers and entrepreneurs.³⁶

³⁶ Evidence exists of the critical role women play in rural production systems and their (relative credit-worthiness) includes seminal work by Bina Agarwal and other scholarly work that has emphasized the role of women, for example, in African economic development, and gendered commodity chains. See Mwangi, E. and Mai, Y.H., 2011. Introduction to the Special Issue on Forests and Gender. *International Forestry Review* Vol. 13 (2): 119-122. Shackleton, S., Paumgarten, F., Kassa, H., Husselman, M. and

Subsequently, we will collect and collate gender-disaggregated data when monitoring loan performance.

The final results of loan testing will be available at the end of the pilot phase but access to a constantly updated database will be made public from the start of the testing process. Four reports will be produced to evaluate this database at 6 monthly intervals throughout the pilot phase. The final report in this series will collate results and provide an overall judgment on the TLF's performance

x Component 3: Design and test “The Landscape Fund Securitization System” (TLFSS)

Although no securities will be issued during Steps 1 and 2, this component will focus on the development and testing of a securitization system and software, which will need to be ready for the Fund to be scaled up after Steps 1 and 2 are completed.

Activity 1: Risk measure integration and loan aggregation

This activity investigates how to integrate and then mitigate risks across loan portfolios through a software system designed to support the securitization process. The major risks identified through Components 1 and 2 will be collated and managed. This will require finding ways to translate risks into software-ready data, either quantitative or qualitative. These approaches must be capable of interpreting instances in which there are many factors that determine default or non-compliance with sustainability standards.

Activity 2: Design of software and simulation of securities

This activity involves designing a software system to support and test the securitization process. This system will consist of three main components:

- 1) Management of integrating loan repayments into the system: this is called the Obligor Facing Architecture (OFA) and will be the portion of the system that deals with borrowers (e.g. smallholders)
- 2) Creation of the securities: this is called the Investor Facing Architecture (IFA). This part of the system will interface with the investors through the issuance of securities. Specifically, this involves writing the code for both the OFA and the IFA, and subsequently ensuring a flawless communication between the two.
- 3) Testing securities: The system will be handling a significant variety of loan repayments (e.g. multiple loans made in multiple countries for multiple activities) and a significant variety of securities. Testing will mostly entail running random scenarios on the different risk elements for each loan and analyzing how the securities behave.

x Component 4: Prepare for scaling up into an operational Fund

Activity 1: Assessment of results during Pilot Step

Upon the completion of Components 1, 2 and 3, we will complete the evaluation of the results of the pilot phase. This will involve assessing: livelihood, environment, and food security results

Zida, M., 2011. Opportunities for enhancing poor women's socio-economic empowerment in the value chains of three African non-timber forest products. *International Forestry Review* Vol. 13 (2): 136-151. Wardell, D.A. and Fold, N., 2013. Globalisations in a nutshell: Historical perspectives on the changing governance of the shea commodity chain in northern Ghana. *International Journal of the Commons* 7 (2): 367-405.

derived from sustainable land use practices; performance of pilot loans; transaction costs and delivery of sufficient resources to repay investors in accordance with perceived risks of investment; and the performance of aggregators.

These results will be presented in a comprehensive report at the end of the pilot phase. If results meet or exceed expectations, we will take the next step by scaling up the Fund into a fully operational mechanism.

Activity 2: Setting up institutional arrangements for Fund Operations

This activity will develop the institutional arrangements and governance mechanisms required for the Fund to perform the following actions: a) issue loans to qualified smallholders and b) ensure securitization of loan payments.

To do this, the activity will ensure the following institutional arrangements and mechanisms are in place by the end of the pilot phase:

- 1) The Financial Entity (FE): the central financial institution that will implement the mechanism by providing loans, monitoring them, collecting and securitizing payments and selling securities to investors.
- 2) The Landscape Fund Securitization System (“TLFSS”): the software architecture managed by the FE to package payment flows into optimal low-risk combinations to back the securities issued.
- 3) Aggregators: the network of intermediaries that disburse FE loans to groups of qualified small producers, identify and disseminate sustainable practices and evaluate borrower performance.
- 4) Independent Sustainability Verifiers: the established institution or group that strategically monitors the achievement of the Sustainability Outcomes, providing evidence to investors, public institutions and other stakeholders.
- 5) Independent Performance Assessors: the established institution or group of individuals - with specialized knowledge in the fields of accounting, finance, auditing or management - that independently builds capacity and accountability into TLF’s governance system.
- 6) The Protection Fund: a form of guarantee offering compensation to investors who lose out due to default or delayed repayment. This will initially require substantial support from highly rated international entities.

x Component 5: Knowledge Sharing and Outreach

We are working in a critical window of opportunity for the development of innovative mechanisms that support sustainable land-use investments. We take engagement with knowledge sharing and outreach networks very seriously as a source of information, a guide for decision-making and a forum for the lessons learned from Steps 1-2.

Activity 1: Developing an iterative evidence-based strategy for sharing knowledge

This activity will develop and begin implementing a strategy for sharing knowledge of the Fund’s research results, progress, success and lessons learned during the Steps 1-2. It will focus primarily on policy and investor engagement and will include, among others, the following actions: consultations with partners and stakeholders; the establishment of knowledge sharing agreements and processes; and the development of methods for reporting on impact. We will make use of CIFOR

communication capabilities and deploy Fund partners' communication knowledge assets and networks.

Activity 2: Developing a community of practice

This activity will establish strategic partnerships with key stakeholders, ranging from local associations to related Ministries. The explicit aim here is to bring together individuals and constituencies that have limited interaction despite common interests. We will deploy a range of tools for this silo-breaking initiative including: best practice guides; open-source financial modelling tools and monitoring systems; publicly accessible databanks, and dedicated efforts to fill data gaps, create operational models and dispel false perceptions around rural finance.

Activity 3: Outreach through CIFOR and partners online and offline platforms

This activity will build awareness of the Fund, to create opportunities for discussion, and to share research results, progress and lessons learned. It will be designed to adapt and expand on CIFOR and Fund partners' existing communications models by broadening the scope and reach of existing tools, platforms, partnerships, media and multi-media infrastructure, including web presence (www.cifor.org; www.forestsclimatechange.org; www.landscapes.org) and social media to target stakeholders and beneficiaries.

Findings will be disseminated through newsletters, FM radio, media releases, blogs, Poles and Twitter feeds using CIFOR's multi-language websites, lists serves and mailing lists. Knowledge will also be shared through global, regional and national fora in pilot countries, including relevant international policy and business processes and outreach platforms, which may include the United Nations Conventions and General Assembly, World Economic Forum, annual Global Landscapes in the side-lines of the United Nations Framework Convention on Climate Change Conference of the Parties (COP), Business for the Environment (B4E), and the World Business Council for Sustainable Development.