

CONCEPT NOTE: PAY FOR SUCCESS AGRICULTURE FINANCING

INTRODUCTION

We are proposing a first-of-its-kind blended finance bond to provide equipment and technical assistance that will considerably increase smallholder farmer incomes in emerging markets.

THE PROBLEM & THE GAP

Rural Latin American employment and incomes are heavily dependent on agriculture, but production remains inefficient, driving high poverty rates. In Peru alone, ~60% of the rural population is employed in agriculture, yet the productivity deficit is such that 50% still live in poverty, and the entire sector contributes as little as 10% to GDP. Eliminating this deficit in agricultural productivity would have a dramatic impact on the rural economy and help lift a significant proportion of the population out of poverty.

Typical forms of agricultural assistance are focused on working capital financing and centralised cooperative-level infrastructure with pre- and post-harvest farmer-level technical assistance. Farmers in Latin America lack access to finance to acquire on-site pre- and post-harvest equipment, which leads to significant wastage and value-loss across all agricultural value chains. The difficulty accessing loans is mainly due to structural market problems, and the complexity inherent in implementing farmer level loans (such as high transaction and monitoring costs, farmer-level risk adversity, and a lack of institutional support).

Specifically, in the coffee industry, as much as 50% of a harvest value can be lost due to the degradation of coffee cherries prior to arriving at the cooperative centralised store house. Additionally, without adequate equipment to prepare fertiliser or care for crops during the season, farmers are producing sub-optimal products with limited market value.

Equipment that would facilitate pre- and post-harvest processing, such as pruning, pulping, fermenting, and drying would not only improve the market value of crops, but also lead to more environmentally resilient plants, and higher yields, increasing incomes for a significant percentage of rural Latin Americans.

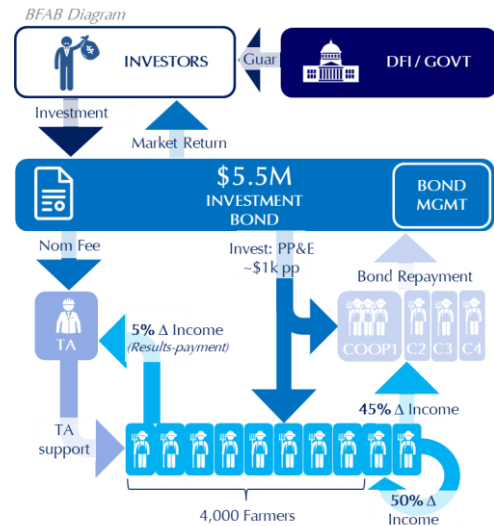
THE SOLUTION

The solution to this missing middle financing is a fixed term Blended Finance Agriculture Bond (BFAB), which finances basic equipment for smallholder farmers. The BFAB is a \$5.5M 5-year term bond, which would support 4,000 smallholder farmers. The structure is loosely based on the Development Impact Bond (DIB) structure; however, a fundamental difference with the DIB is that the outcome payer is the beneficiary and payment is directly linked to increased income generated from the bond. The first target country and sector for the BFAB would be coffee in Peru.

Role of Stakeholders

The bond is underpinned with a (partial or full) principal guarantee from either a **Government agency** or **Development Finance Institute** (DFI). This not only reduces the bond default risk to the private sector, but also allows the agency or institute to promote a development goal with little to no cash outlay. For example, in the case of Latin America, USAID already spends a significant amount of money promoting coffee & cacao as alternatives to coca; the BFAB would reduce the required cash

outlay and would effectively use private money to achieve the same target. **Private sector investors** are then approached to invest in the bond. In the first bond, to prove the concept, HNWI and impact investors will be targeted, however for subsequent bonds, commercial investors such as pension funds will be targeted as returns are market comparable and it can be easily scaled up.



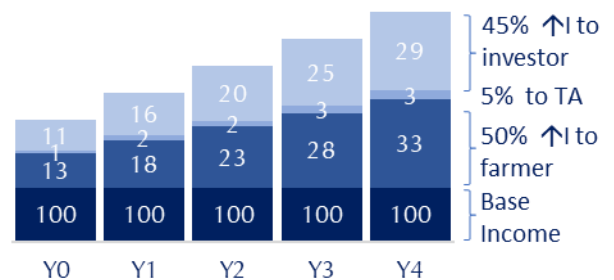
The bond will be managed by a **bond management team** (BMT) for a nominal fee and will cover the operating costs of a chosen **Technical Assistance provider** (TA) to work with farmers. The BMT will work with current established coffee lenders, such as Root Capital, responsAbility, and Rabobank to identify a shortlist of **cooperatives** to work with.

Via the TA providers, ~\$1,000 of infrastructure will be provided to **coffee farmers**, including fertilizer barrels, drying, pulping, and fermentation equipment, alongside high-touch best practice guidance on equipment usage. Additionally, TA providers will be responsible for farmer-level monitoring.

Financial Summary & Cashflows

Bond payments will be directly linked to the increased productivity and income of each farmer. A base line will be taken for each farmer based on historical cooperative data, which will determine pre-initiative income levels and productivity.

E.g. Distribution of Income Gains



As farmer productivity starts to increase from the additional TA and equipment, revenues are distributed back to the farmer (50%), TA provider (5%), and the bond holder (45%).

Bond financing would need to cover the upfront \$5.5M cash shortfall in year 0 and 1 (see finance table on following page),

however from year 2 the bond turns cashflow positive and over the full-term will return a healthy 18.64% IRR to investors.

Year	Y0	Y1	Y2	Y3	Y4
# Farmers	4,000	4,000	4,000	4,000	4,000
Farmer Income (\$k)	1.6	3.2	5.6	8.0	11.2
Total Revenue	6,277	12,960	22,203	31,902	44,677
COGS (<i>Labour</i>)	(6,092)	(11,967)	(19,193)	(23,276)	(27,202)
Gross Profit	185	993	3,010	8,625	17,474
TA	(769)	(769)	(769)	(769)	(769)
Bond Admin	(84)	(84)	(84)	(84)	(84)
Capex	(4,178)	0	0	0	0
Cashflows	(4,847)	140	2,158	7,772	16,622
Bond repayment					
Capex	(4,178)	0	0	0	0
Bond admin	(84)	(84)	(84)	(84)	(84)
TA	(769)	(769)	(769)	(769)	(769)
50% Increase Profits	0	404	1,413	4,220	8,645
Bond Cashflows	(5,031)	(448)	560	3,368	7,792
IRR	18.64%				

Key Assumptions

The following assumptions are included in the above cashflows, however are not necessarily fundamental for the BFAB to provide a market-aligned return:

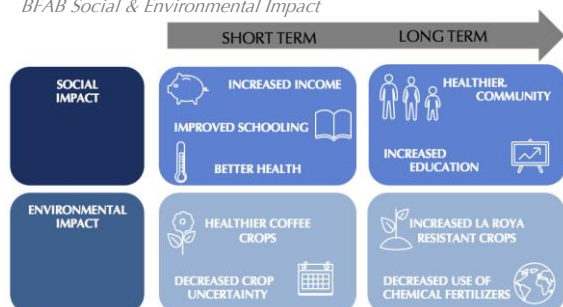
- 2% bond management fee
- 80 farmers per TA provider
- \$1,000 investment per farmer
- Farmer yield improvements: 55% - 75% per Ha
- Moisture reduction: 30% - 12% per quintal
- Price per quintal improvements: s/. 340 - 550
- Quintals harvested per Ha: 10 – 33
- Ha. per farmer: 2 (flexible as equipment can be shared)

SOCIAL IMPACT OVERVIEW

To measure and incentivize social and environmental impact, the BFAB will track the following impact metrics:

- Farmer-level coffee yields
- Income to farmers from both cooperative and external sales
- Price received per quintal of coffee

BFAB Social & Environmental Impact



As yields and incomes increase from the BFAB, farmers' families will have additional money to spend on food, medications, healthcare, and schooling, which will also be supported by the BFAB tiered incentive scheme (see next section). In the long-term, this will result in a healthier and better-educated population, with more access to a broader range of economic activities.

The BFAB will also focus on improving crop resilience. Specifically, with regards to countering widespread diseases such as the recent outbreak of coffee leaf rust (La Roya), which decimated up to 30% of all coffee production in Peru in 2012. While there are currently three established ways to effectively deal

with La Roya – applying fungicides, removing diseased trees, and planting disease resistant cultivars – these methods are either unaffordable or not organic. The BFAB's technical assistance will focus on improving plant health through applying timely fertilizers, pruning, and harvesting best practices which will increase resilience to future potential diseases. Furthermore, as farmer yields and incomes improve, buying and planting disease resistant cultivars will become a feasible option.

INCENTIVES / IMPLEMENTATION

The BFAB would employ a tiered system of secondary benefits to ensure farmer incentives are aligned and sales are maximised within the financing structure, in addition to accurately reporting harvest data and farmer income:

Ensure process effectiveness through a robust group liability structure. Farmers will organize into groups and together be accountable for a defined portion of the bond repayment. If a group does not fulfil its financial duty, members will have limited access to additional loans, products, and services. As a result, group accountability will lower default risk and trigger strong collaboration.

Maximize Outcomes through a dynamic tiered incentive mechanism. As yields and sales increase, and farmers meet pre-defined thresholds, they unlock access to additional benefits such as the following:

- School packages (uniform, etc..) for children
- Micro-health insurance

Additionally, social incentives will recognize high performing farmers to sustain collaborative and individual efforts.

Example SBP Tiered Incentive Scheme

	Equipment	TA	School Kit	Loans	Micro Insurance
Y0	🛒	👤			
Y1	🛒	👤	👕		
Y2	🛒	👤	👕	💰	
Y3	🛒	👤	👕	💰	🏠

RISKS & MITIGATION

R: Farmer side-selling → **M:** Implement group liability structure with dynamic incentives

R: Fluctuation in market prices → **M:** Potentially set up a price volatility fund for smoothing prices

R: Under-performance of TA / Lack of farmer buy-in → **M:** Self-selection of farmers during trial period

SCALABILITY & FUTURE OPPORTUNITIES

The BFAB principal of using blended finance to unlock productivity increases can be applied to different value chains throughout the developing world. Once the pilot has proven successful, it will be scaled as follows:

- **Geographically:** (1) Latin America, (2) Africa, and (3) Asia
- **Value Chains:** cacao, value-additive crops
- **Sequentially:** additional benefits to farmers to further increase productivity i.e. irrigation, plant rotation