Pay-for-Performance Banking Loan for Regenerative Agri buyers

PROBLEM: The Existential Threat

Unsustainable farming practices is a serious concern in India, with the excessive use of chemical fertilisers and pesticides **degrading more than 150 million hectares (ha) or 30% of the country's land area.** These effects are exacerbated by erosion caused by strong winds and water movements, exposing much of these lands to the irreversible state of desertification.

With close to 670 million people in India being employed in farms, **the survival of some 46% of the total population is dependent on crop yields**, which are expected to decline over time. Many of India's farmers are smallholders working on less than 2 ha of land and have **limited access to credit.**

On the buyer-side, specifically for small-medium enterprises (SME) along the textile supply chain such as cotton manufacturers and textile mills, they work with outdated machinery and fluctuating cotton prices that erode profit margins. Apparel producers and retailers further downstream will shun manufacturers that are less green due to global sustainability concerns. **Many face the prospect of losing their business.**

THE NEED: Regenerative Agriculture needs to scale

There is **a pressing need to employ regenerative methods to permanently restore soil health and its biodiversity.** Despite such methods promising up to 30% increase in crop yields, the take up of regenerative farming is only less than 2% of India's cultivable land. Much of this has to do with the constraint of **large upfront costs** involved and **focus on short-term profits** for many farmers.

Many banks and financial institutions also hesitate to fund regenerative agriculture, which is profitable only long-term.

Our Solution

We propose 10-year <u>performance-based loans</u> worth 100 million Indian Rupees (INR) for cotton manufacturers such as textile mills, whom we will tap on to support farmers to transition from existing practices to regenerative farming, which we focus on 1. no-till farming and 2. cover cropping as they are two cost-effective methods to secure with farmers in India. These beneficiaries in turn support their farmers with **<u>sub-loans</u>**, which will involve similar interest rates as what we offer the buyers.

We offer margin reductions of interest rates for the loan, which triggers if the following conditions are met:

<u>For Loans to SME Buyers:</u>

- Increase in every 20% of cotton farmers adopting no-till farming and cover cropping.

<u>For Sub-Loans to Farmers:</u>

- Soil quality improvement based on Land Equivalent Ratio (LER)

The soil organic carbon content and water content of the farms will also be measured, which will determine their environmental impact and suitability to be considered for carbon credits.

Geography & Scalability Potential

The initial outreach will begin in the state of Gugarat, where there are **approximately 1.3 million cotton farmers and ~2,000 cotton manufacturers.** We target **50 manufacturers for our loans,** covering **200 smallholder farms.**

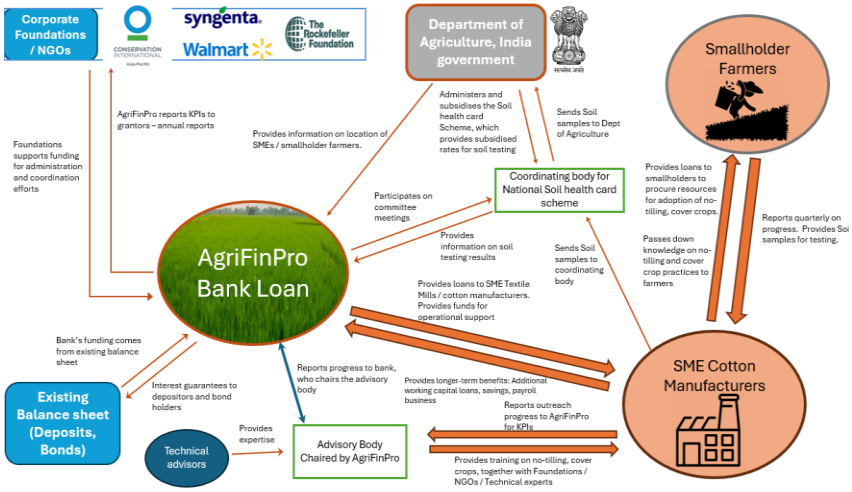
After the first 5 years, once the potential profits come in for the smallholder farms, we will solicit support from the government to reach out to the other **200,000 cotton manufacturers** and **1.3 million farmers** across the state. The next target states will include Punjab, Haryana, Maharashtra, Telangana and Andhra Pradesh.

This model can **also scale to other 5 million farmers** across India, and be extended to other developing countries like China, Uzbekistan or Brazil as well, all are top exporters of cotton.

Operating and Financing Architecture

- The AgriFinPro Loan acts as a sustainability loan for SME Buyers. It receives funding from existing balance sheet – pooled from current savings and bond holders without additional support from other private investors.
- Interest guarantees are provided to these existing investors.
- Corporate Foundations / NGOs will provide grants for administrative costs involved.
- Its annual loan rates are at baseline of 8.5%, which will decrease progressively to 6% once all farmers in the SME's portfolio adopted regenerative agriculture practices.
- 50 SME Buyers will in turn administer loans to the small holder farmers and train them to procure and implement regenerative agriculture. They also collect soil samples from farmers, which will then be sent to the Department of Agriculture for soil health assessment. The SME Buyers can
- The farmers report quarterly on their farming progress to SMEs, who will then submit yearly reports to AgriFin Pro Advisory body to determine if they meet loan criteria for margin reduction.
- The Department of Agriculture provides subsidised rates for each soil health test (cost of 2USD), covered by grants for administrative costs.

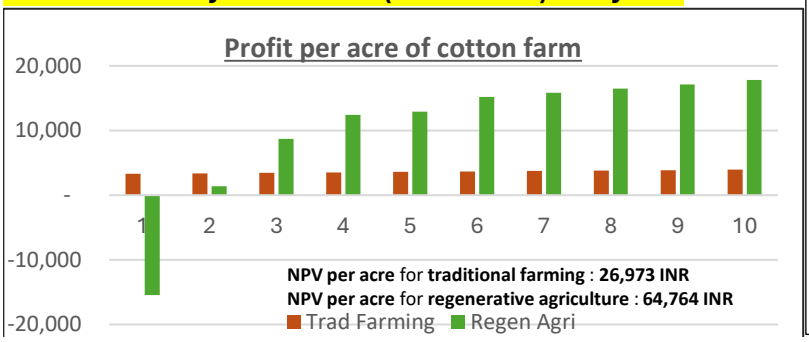
Loan Diagram



Key Statistics

AgriFinPro Bank Loan	
Financial Instrument	Pay-for-performance loans
Loan Size	100 million INR (US$1.154 million) 2 million INR (US$23,080) per SME
Asset Type	Sustainability-linked
Loan Mechanics	8.5% base interest, with 0.5% reduction in interest for every 20% outreach hit by SME buyers. Interest rate stabilises at 6% if 100% of farmers in the SME buyer's portfolio adopt regenerative agriculture.
Target Market & Size	First 5 years: Gugarat, India - 200 farmers 5-10 years: Rest of Gugarat, India - 1.3 million farmers > 10 years: Other Indian States, beyond India.
Maturity Period	10-year loan, with option to renew.
Assumed inflation	4%
Terminal Value	5 years
IRR	90%
Cost of Funds	15% of Fund Size

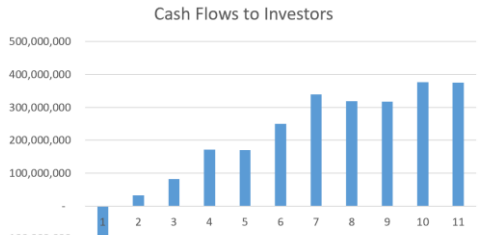
Cash Flow Analysis Per Acre (for farmers) – 10 years



Key Assumptions

1. Yield per acre – 4.5 Quintile (100kg) per acre for traditional farming. For regenerative agriculture the yield will be lower in year 1 and year 2 by 40% and 30% and years 3 to 5 by 10%.
2. Minimum Support Price sourced from govt of India.
3. Inflation expectation 4%.
4. Cost of pesticides and fertilizers at 7,000 INR per acre for traditional farming and 1,000 INR for regenerative agriculture. However, capex of 12,000 INR to set up compost plant in year 1.
5. Regenerative agricultural practices will also save further 5,000 INR in buying fruits, vegetables and legumes due to intercropping which in other case is bought from market.

Cash Flow from SMEs / to Investors



Key Assumption

1. Number of SMEs ramp up from 5 in year 1 to 50 in year 9.

Financial and Environmental Impact

	Outreach	Short Term Tangible Benefits - 5 years	Medium Term Tangible benefits - 10 years	Intangible Benefits
Smallholder Farmers (4 acres)	**200** farmers **~325** ha of land	Per acre, annual profits turn positive within 3-5 years, **3.7x greater** than status quo **(13,466 INR VS 3,603 INR)** Per farmer, profits are **4.6x greater** than status quo **(22,972 INR VS 106,557 INR)** For 200 farmers: total profits at **21.3 million INR (US$245,950)**	Per farmer profits could reach **146,490 INR, 6x** greater than if they were practicing conventional farming methods. For 200 farmers: profits **29.3 million INR (US$338,144)** Beyond 10 years: Scaling up to 1.3 million farmers - Profits could reach **190 billion INR (US2.2 billion)**	More confident adopting regenerative agricultural practices, trust in producing increased yields. Farmers no longer exposed to fluctuating prices in food, as they transition to becoming entirely self-sufficient in their farms.
SME Cotton Manufacturers	**40-50** SMEs	Lower interest rates offered reduces cost of capital - increased liquidity to purchase advanced equipment to boost productivity. Profit margins to increase **beyond the 10%** experienced by typical cotton manufacturer, with greater bargaining power for prices from improved relationships with farmers.	**Profit margins** exected to further increase, as price premiums offered on sustainable cotton sources increase - up to **50% higher** than before.	Their supply chain becomes green, increasing competitiveness with their downstream buyers. Closer relationships with farmers can lead to value creation that increased revenues for both farmers and SME cotton manufacturers.
Carbon and water	**~325** ha of land	**4 tonnes of CO_{2e} /Ha / year** can be reduced by year 4/5. For 200 farmers, equivalent to **1,300 tonnes CO_2 /year.** Assuming 1 tonne reduction in year 1, 2 tonnes in year 2, 3 tonnes in year 3, 4 tonnes from year 4 onwards, **cumulative reduction at 4,550 tonnes CO_2**	Cumulative CO_2 reduction at **11,050 tonnes CO_2** Beyond 10 years: Scaling up to 1.3 million farmers - cumulative carbon reduction potential could reach **71.8 million tonnes CO_2**	Increase in soil organic matter improves water retention, leading to less water usage over time.

Due Diligence on Potential Risks

Financial Risks:

- Default risk from SMEs due to financial difficulties
- Short-term yield risk from lower crop yields and bad climate conditions

Mitigation:

- Set revenue threshold as criteria for SME selection
- Consistent credit assessment and financial literacy.
- Flexible loan repayment terms.
- Geographical diversification of SMEs selected

Social Risk:

- Bad working condition and child labour on farms. SMEs

Mitigation

- Work with government to ensure periodic checks of premises

Stakeholder Impact Metrics & SDGs

Self-sufficiency for Smallholder farmers: Improving crop yields and profitability of farms ensures greatly enhanced livelihoods
3 KPIs: Revenue/farmer, Yield (Metric Tons / ha), % land on regenerative agriculture - Related to SDG 2.3, 2.4.

Soil health and Biodiversity improves resiliency:
KPI: Land Equivalent Ratio (LER) – SDG 13.1
Carbon emissions reduction and carbon sequestration potential: *2 KPIs: CO_2 reduction (MT CO2e), Soil carbon sequestration (tonnes of CO2 equivalent/Ha)*

Restore degraded land and soil in India:
Our project will support India's goals to reduce the desertification and degradation of agriculture land.
1 KPI: Proportion of land degraded in Ha