The Lab
Global Innovation Lab for Climate Finance

PRICE RISK FACILITY

INSTRUMENT ANALYSIS
OCTOBER 2025

Price Risk Facility

LAB VEHICLE ANALYSIS

October 2025

The Lab identifies, develops, and launches sustainable finance vehicles that can drive billions to a low-carbon economy. The 2025 Lab cycle targets three thematic areas (mitigation, adaptation, and sustainable agriculture and food systems) and five geographic regions (Brazil, East & Southern Africa, India, Latin America & the Caribbean, and the Philippines).

AUTHORS AND ACKNOWLEDGEMENTS

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SUMMARY

Smallholder farmers in emerging markets face considerable income volatility due to unpredictable crop prices, which undermines their ability to repay loans, invest in productivity improvements, or build resilience to climate shocks. While government schemes in India often insure against production risks like drought or pests, price risk, which is the possibility that market prices fall below expectations, remains largely unaddressed. This discourages lenders from financing farmers who could otherwise store their crops, reduce spoilage, and avoid distress sales.

The Price Risk Facility (PRF) addresses this challenge by increasing the accessibility and affordability of price insurance products for farmers and the institutions that finance them. PRF brings together lenders, insurers, and reinsurers to develop price insurance solutions that de-risk lending and stabilize farm incomes. The instrument bundles price insurance with input or post-harvest loans and can be integrated into existing loan products. This protects farmers from market price drops while reducing credit risk for the lenders, making it easier to extend loans to underserved segments.

The Facility supports insurers with subsidies to premiums, data infrastructure, and technical assistance to develop and scale index-based insurance products that are simple, reliable, and easy to administer. The initiative is led by a team with deep experience in agricultural finance and insurance. Its objective is to help establish a scalable and sustainable market for price risk protection that empowers farmers, safeguards lenders, and enhances rural financial inclusion. Assessing against the Lab criteria, PRF is:

- **Innovative**: PRF is innovative because price insurance in agriculture remains relatively novel, with no comparable market-ready product in India. Current market offerings are largely government-led and focused on yield/production risks, whereas PRF delivers price protection without relying on government subsidies.
- **Actionable**: With completed pilots, secured insurer and lender partners, and a clear implementation timeline, PRF is positioned for near-term scale-up. The operational model is already in place, reducing execution lag time.
- **Financially Sustainable**: Pilots demonstrated operational viability, with payouts showing value for both lenders and farmers while remaining within expected loss ranges for insurers. The dependence on concessional capital is temporary and minimal; it is used to catalyze adoption, not enhance commercial viability.
- **Catalytic**: PRF has the potential to be replicated across crops, geographies, and lending products, while complementing existing climate and yield insurance.

The Secretariat recommends the Price Risk Facility for endorsement. The instrument is operationally viable, as evidenced by the successful launch of multiple pilots, signaling both implementation feasibility and the opportunity to fulfill currently unmet market demand. PRF design complements production risk insurance, expands credit access, and has a time-bound plan to phase out concessional support while scaling into new markets.

Over the next six months, proponent Agtuall aims to establish a legal entity for the risk pool and secure grant funding to capitalize it, ensuring the facility can provide an additional layer of risk mitigation to insurers in its early years. Parallel efforts will focus on onboarding additional lenders and insurers, formalizing operational structures with them, executing the two ongoing pilots, and preparing for replication in Africa and other geographies.

TABLE OF CONTENTS

CONTEXT

Agriculture supports nearly half of India's population, but smallholder farmers and lenders face high risks from volatile crop prices, limiting credit access and leading to distress sales. Price insurance can help stabilize incomes, expand access to credit, and enable farmers to diversify livelihoods or adopt climate-resilient practices.

In India, 40% of the population depends on agriculture for their livelihood. The agricultural sector, while the largest source of employment, contributes only 18% to GDP(Economic Times 2024). This mismatch between employment and GDP is largely because a significant portion of farmers are not able to leverage tools such as modern seeds, precision irrigation, mechanization, and storage and so are stuck with lower productivity. Landholding is extremely fragmented: about 86% of the farmers are smallholder and marginal farmers with landholdings of less than two hectares. Despite initiatives such as Priority Sector Lending[1], only 40% of smallholder farmers have access to institutional credit, while most rely on informal sources (RBI 2019)

Because most smallholder farmers depend on agriculture as their primary source of income, their earnings are highly volatile and susceptible to climate shocks and price fluctuations. The increasing variability of the Indian monsoon is becoming more pronounced, as national averages obscure significant regional disparities. Approximately 30% of districts have experienced a high frequency of deficient rainfall years, whereas about 38% have been marked by recurrent episodes of excessive rainfall, underscoring a growing spatial unevenness in monsoon behavior across the country(Prabhu and Chitale 2024). Variable monsoon timing and intensity undermine agricultural productivity by disrupting sowing windows, shortening growing periods, and exposing crops to droughts or floods that reduce yields and input efficiency.

Apart from physical crop losses, Indian farmers frequently endure *low-price years*—periods when farm produce prices are depressed, often after a bumper harvest or due to market gluts. In the past 20 years, agricultural market crashes or price downturns have occurred almost as often as poor harvests, creating a vicious cycle of volatility. In fact, years of ample production can paradoxically be bad for farmers' incomes when excess supply drives prices below remunerative levels (Business Standard 2018). This income instability makes it difficult for them to borrow, invest in mechanization, or purchase high-quality inputs. As such, a poor harvest, or a good one at low prices, can leave farmers indebted or force them to cut back on investments that could improve productivity.

The lack of access to credit prevents smallholder farmers from building climate resilience, as such practices are expensive and often beyond their means. Smallholder farmers are also unable to leverage technological enhancements to process and preserve their produce, which results in a significant amount of food loss. India suffers an annual food loss of about USD 18.5 billion, most of it upstream at the farm level rather than downstream in consumption (Gulati et al.). Given these risks and lack of safety nets, farmers remain apprehensive about taking on additional debt for adaptation or diversification (Climate Bonds Initiative).

[1] Priority Sector Lending (PSL) is an RBI (India's central Bank) mandate requiring banks to allocate a prescribed share of credit to socially critical sectors such as agriculture, MSMEs, affordable housing, education, renewable energy etc. to promote inclusive growth.

The Indian market offers financial products that protect farmers from production risks, such as the uncertainty that actual output (quantity or quality) will deviate from expected levels due to weather variability, pests/diseases, and shocks. The Pradhan Mantri Fasal Bima Yojna (PMFBY)—India's flagship crop insurance scheme—insured 30-40 million farmers in 2023-24 against crop failure due to calamities (Financial Express 2024). However, it leaves farmers exposed to price risk and does not provide a comprehensive solution.

Addressing these gaps requires solutions that protect against both production and price risks. Without such risk management, smallholder farmers will remain vulnerable, limiting their ability to invest, adapt, and thrive in an increasingly uncertain environment.

DESIGN AND POSITIONING

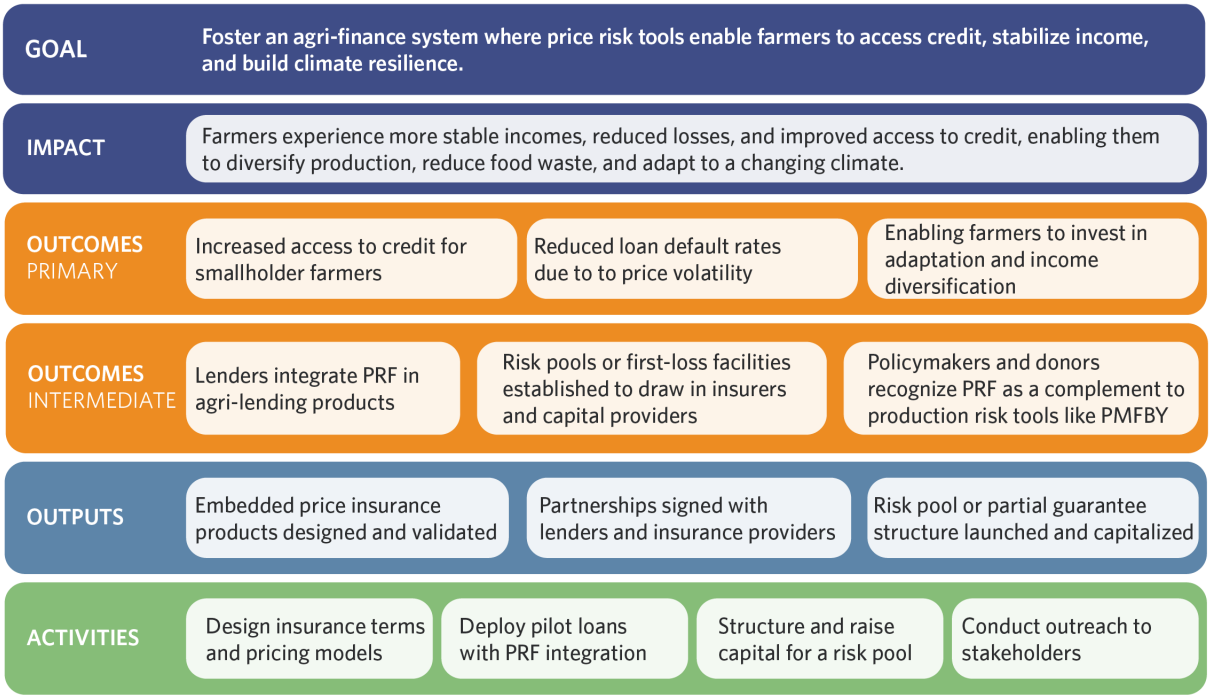
1. INTRODUCTION TO THE VEHICLE

The Price Risk Facility is a price insurance vehicle designed to protect agricultural borrowers and lenders from price volatility. It partners with insurers to underwrite input and post-harvest loans for smallholders.

1.1INVESTMENT THESIS

The Price Risk Facility has a clear thesis: For smallholder farmers, price volatility, not just yield shocks, blocks credit access, depresses investment, and fuels distress sales, so embedding price insurance into agricultural loans can stabilize cash flows and unlock far larger, cheaper lending to farmers and agri-SMEs. PRF aims to enable insurers and reinsurers to underwrite price insurance policies for banks, NBFCs, MFIs, cooperatives, and agri-fintechs. The instrument complements existing public schemes and production-risk tools by covering the missing layer of market price volatility.

Figure 1. Theory of change

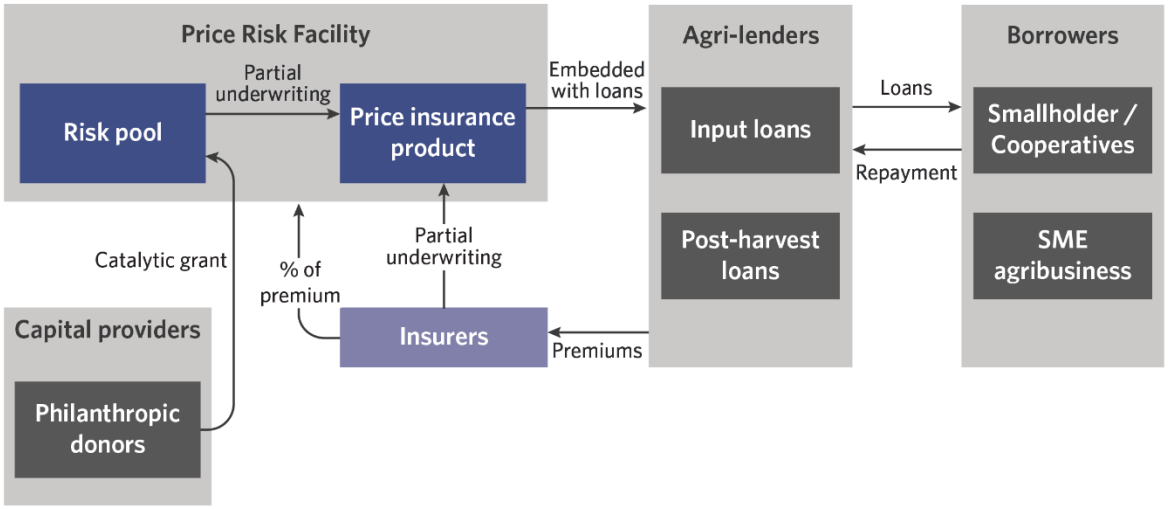


The Price Risk Facility fulfills the role of bringing stakeholders together, providing insurers with data and technical tools, and risk mitigation in the form of a payout subsidy through philanthropic grants. The subsidy is catalytic in nature to enable rapid adoption, and the quantum required is modest against the loan flow enabled.

1.2 **VEHICLE MECHANICS:** LENDER PRICE INSURANCE BACKED BY INSURERS AND RISK POOL

The Price Insurance Facility has two key stakeholders: insurers and lenders. Insurers underwrite policies for agricultural lenders, who provide either input loans or post-harvest loans to farmers. The proponent Agtuall is not the insurance provider; rather, it acts as an insure-tech. It brings together lenders, insurers, and reinsurers while also providing insurers with the necessary data and actuarial models for pricing premiums. At the time of policy issuance, a strike price for the agricultural commodity is established for the duration of the coverage period. If the market price of the commodity falls below this strike price, a payout is made to the lender, Farmer repayments are also adjusted in the event of an insurance payout. This enables lenders to, first, extend credit access to smallholder farmers, and second, offer higher loan-to-value (LTV) ratios i.e. loans covering a larger share of the collateral or expected produce value.

Figure 2. Detailed Instrument Mechanics



This mechanism enables farmers to maintain stable earnings and avoid liquidity or solvency issues caused by lower commodity prices and outstanding loans. It also reduces default risk for lenders, as lower prices no longer undermine the repayment capacity of farmers.

Insurers receive premiums for issuing the policy, with 10-15% of those premiums collected retained by the Facility as the cost of providing the technology and technical support required for policy issuance (as is standard for insurance brokers). In addition, the Price Risk Facility operates a USD 2 million risk pool that provides an additional layer of risk mitigation for insurers, covering 10-30% of any payout. The risk pool will be leveraged only in the early years, funded entirely through philanthropic grants, and will not require insurers to pay an additional fee. This added layer of risk mitigation is designed to catalyze scale by reducing insurer exposure while they build familiarity and confidence with the instrument.

1.3 TARGET PIPELINE

The price insurance is integrated into loans at the lender level and by doing so Agtuall can scale India's highly fragmented smallholder market by de-risking lenders' agricultural portfolios rather than onboarding millions of individual farmers. Hence the pipeline for Agtuall would be lenders, i.e. banks, nonbanking financial companies (NBFCs), microfinance institutions, and agri-fintechs with active agricultural loan portfolios, especially those serving smallholder farmers and agri-SMEs.

So far, Agtuall has executed multiple pilot projects in India and worked with philanthropies including the Rabo Foundation, lenders such as Arya Collateral and Sammunati, and large insurers. The company plans to expand engagement with agri-lenders in India to collaborate with a small cooperative bank in southern India to extend price insurance to smallholder farmers. It is also engaging with the National Bank for Agriculture and Rural Development (NABARD), a development bank in India that promotes sustainable and equitable agriculture. These partnerships are intended to help Agtuall tap into the public sector lending ecosystem in India.

Going forward, its approach will focus on:

- Leveraging existing pilot projects and proof of concepts.
- Engaging sector networks and industry associations, such as the Indian Banks' Association, Sa-Dhan, and the Microfinance Institutions Network.
- Bundling price risk facility within other programs that deliver climate-related benefits.
- Working with partner development finance institutions (DFIs) to reach recipients of credit lines or guarantees.

Agtuall is also actively engaging insurers and reinsurers to bring them together for the Price Risk Facility. The strategy focuses on building early confidence by showcasing pilot outcomes, loss-ratio performance, and collection of premiums, while also structuring risk-sharing arrangements that align reinsurer appetite with local insurer distribution capacity. Over time, Agtuall expects to position itself as a trusted aggregator, creating a standardized platform that reduces transaction costs and attracts sustained insurer participation.

Though Agtuall's immediate focus is on smallholder farmers and cooperatives only, price insurance is also beneficial for large commodity trading businesses, which can serve as a supplementary source of revenue once the instrument is operational. scales up.

1.4 DETAILED INVESTMENT STRATEGY

Initially, the PRF will use a price insurance instrument, with plans to expand into a more comprehensive revenue insurance product covering both price and production risks. Indicative terms include short tenors of three to six months, aligned with the agricultural cycle, and premiums of 2-5% of the sum insured, varying by loan type, crop, and geography (details are provided in the table below).

The facility requires no additional collateral from farmers beyond existing loan conditions and integrates policies at the point of loan origination. These terms are designed for smallholder farmers and agri-SMEs, offering lower barriers to access and risk mitigation suitable for lenders' portfolios in India's agriculture sector.

Table 1. Key Instrument Parameters

#	Parameter	Detail
1	Instrument Type	Insurance - Price Insurance currently, with a plan to move to Revenue Insurance (Price + Production).
2	Premium	2-5% of the sum insured. The premium depends upon the nature of the loan, with the input loan being riskier than the post-harvest loan, the specific crop, geography, etc. The sum insured against the loan amount also varies with the nature of the loan, but is generally in the range of 10-15% of the loan amount.
3	Tenor	Short-term, typically 3-6 months, is aligned with the sowing-to-harvest or harvest-to-sale period.

4	Payout Trigger	The market price falls below the strike price[2].
5	Collateral Requirements	No collateral requirements from farmers beyond the loan requirements.
6	Policy Integration	At the time of the loan origination.
7	Price Risk Facility Fee	10-15% of the premiums collected (aligned with the usual range for Insurance brokers). No fee for payout subsidy offered through Risk Pool.
8	Distribution Model	Primarily through banks, NBFCs, and cooperatives.

2. MARKET ADDITIONALITY ANALYSIS

Price Risk Facility addresses price volatility, a risk often overlooked in emerging economies. Unlike production-focused tools such as crop insurance, it targets income stability for smallholder farmers, making rural livelihoods more resilient and attractive to investors.

Although agricultural insurance in India has grown in recent years, it remains largely focused on yield and weather-related risks, neglecting price and revenue volatility. The flagship Pradhan Mantri Fasal Bima Yojana (PMFBY)[3] crop insurance program compensates farmers for losses resulting from occurrences such as droughts, floods, or pest infestations. While PMFBY helps farmers manage production risks, it offers no protection against market volatility. A farmer may evade drought losses in one season only to face a price collapse in the next. This gap is not unique to India; across many emerging economies, agricultural insurance remains focused on weather and production risks, with few financial instruments protecting farmers from price volatility.

India also maintains a Minimum Support Price (MSP) for 23 crops to mitigate price volatility. In practice, however, MSP has been only effective in mitigating price volatility for wheat and paddy. Farmers often sell their produce (except wheat and paddy) at prices lower than MSP year after year (Reddy 2021). Both MSP and PMFBY are government-led programs, with PMFBY delivered by multiple private insurers. Outside these schemes, the fully private, non-subsidized crop insurance market remains small, partly because PMFBY's heavily subsidized premiums result in open-market demand. By contrast, the price-risk facility would channel credit to smallholders and cover a separate risk layer without public capital or permanent subsidies (the philanthropic funding for the risk pool would be modest and time-bound). The gap today is clear: farmers largely lack price-risk protection, and private-sector participation beyond public sector-led programs is limited. Traditional hedging tools available are also not perfectly suited to mitigate the price risk for farmers/lenders because many agri contracts either don't exist for key crops or are too illiquid, with large lot sizes and standardized grades/locations that don't match smallholder realities—creating basis and size mismatches. They also demand margins, daily mark-to-market, and roll management, which is costly and operationally heavy for ag-loan desks and Farmer Producer Organizations (FPOs[4]).

[2] The strike price is established at the time of policy issuance using historical price date for the crops
[3] PMFBY is a government-sponsored crop insurance scheme that offers financial protection to farmers against crop losses caused by natural calamities, pests, and diseases.
[4] A Farmer Producer Organizations in India is a collective of farmers registered as a company to improve their market access, bargaining power, and income

Addressing these gaps requires new solutions that work alongside, rather than replace, existing mechanisms. The Price Risk Facility is designed to complement other agriculture and climate risk management instruments rather than compete with them. Key synergies include:

1. **Complement crop and yield insurance**: When combined with PRF, yield insurance creates a more comprehensive form of revenue protection. Yield insurance responds to climate shocks, while PRF covers market shocks, together offering broader risk coverage.
2. **Supporting agricultural credit and investment**: PRF incorporates price insurance into agricultural loans, lowering default risk triggered through market collapse. This can increase confidence of banks and financial institutions in extending credit to smallholder farmers and agricultural firms, thereby making these enterprises more creditworthy.
3. **Improving climate resilience and sustainability**: PRF can be integrated into climate-focused lending programs to manage market risk, enabling farmers to invest in better seeds, irrigation, or conservation practices, knowing they are protected from a potential price crash.

In sum, the Price Risk Facility does not replace existing insurance or subsidy programs. Instead, by covering price risk, an area most tools overlook, it strengthens the overall risk management framework for agriculture.

IMPLEMENTATION AND OPERATIONALIZATION

3. IMPLEMENTATION PATHWAY AND REPLICATION

Early pilots have proven the PRF's functionality in protecting farmers' incomes from price shocks. The next step is to scale its use as a risk mitigation layer for insurers and lenders, enabling broader replication across crops, regions, and financial products.

3.1 NEAR-TERM IMPLEMENTATION PLAN

Agtuall has been working on price insurance since 2021. It first launched the product as a risk management tool, funded through its own capital. In the following years, the team ran three pilot projects, bringing insurers and lenders to the same table and issuing policies worth around USD 50,000 each. The pilots demonstrated the concept's feasibility and benefits for all parties. Currently, Agtuall is executing two more pilots, together valued at about USD 700,000. Table 2 details these projects.

Table 2 – Pilot Projects Details

#	Pilot	Status	Lender	Sum Insured	# of Farmers Supported	Loans Enabled
1	2021	Completed	Arya Collateral WH Services	USD 180K	N/A	N/A
2	2023	Completed	Arya Collateral WH Services	USD 50K	2700	N/A
3	2025	Completed	Samunnati	USD 50K	100	USD 360K
4	2025	Policy Issued	Aryadhan	USD 650K	9000	USD 4.5M
5	2025	Policy Issued	HDFC Bank	USD 70k	NA	USD 400K
			Total	**USD 1 M**	**11,800**	**USD 5.26M**

Agtuall has embedded price protection in both post-harvest and input loans, for smallholder farmers and agri-SMEs. They have also secured partnerships with major sector players, including Sammunati, India's largest agri-focused non-banking financial company, and HDFC Bank, the country's largest retail bank. Agtuall has also received support from the Rabo Foundation for executing these projects. To support policies that directly protect farmers and farmer-producer collectives, Rabo Foundation has provided Agtuall with grants to build technical capacity and subsidize insurers' premiums.

Pilot projects indicate that Agtuall's price insurance has operational viability, with multiple successful pilots confirming its implementation feasibility and highlighting a strong opportunity to meet currently unmet market demand. Insurers are supportive but cautious due to the product's novelty; a grant-funded risk pool covering 10-30% of the payout without any premium sharing will make insurance much more commercially lucrative and encourage insurers to test price insurance at a significantly larger scale than the pilot. As the instrument demonstrates commercial viability and effectiveness at increasing volumes, the dependence on the risk pool can be gradually reduced. With the risk pool catalyzing adoption, the proponents expect to be able to insure USD 500 million annually within three years of operation, after which the risk pool can be phased out as no longer necessary. While lenders are willing to integrate this product into post-harvest loans, input loans still carry production risk,

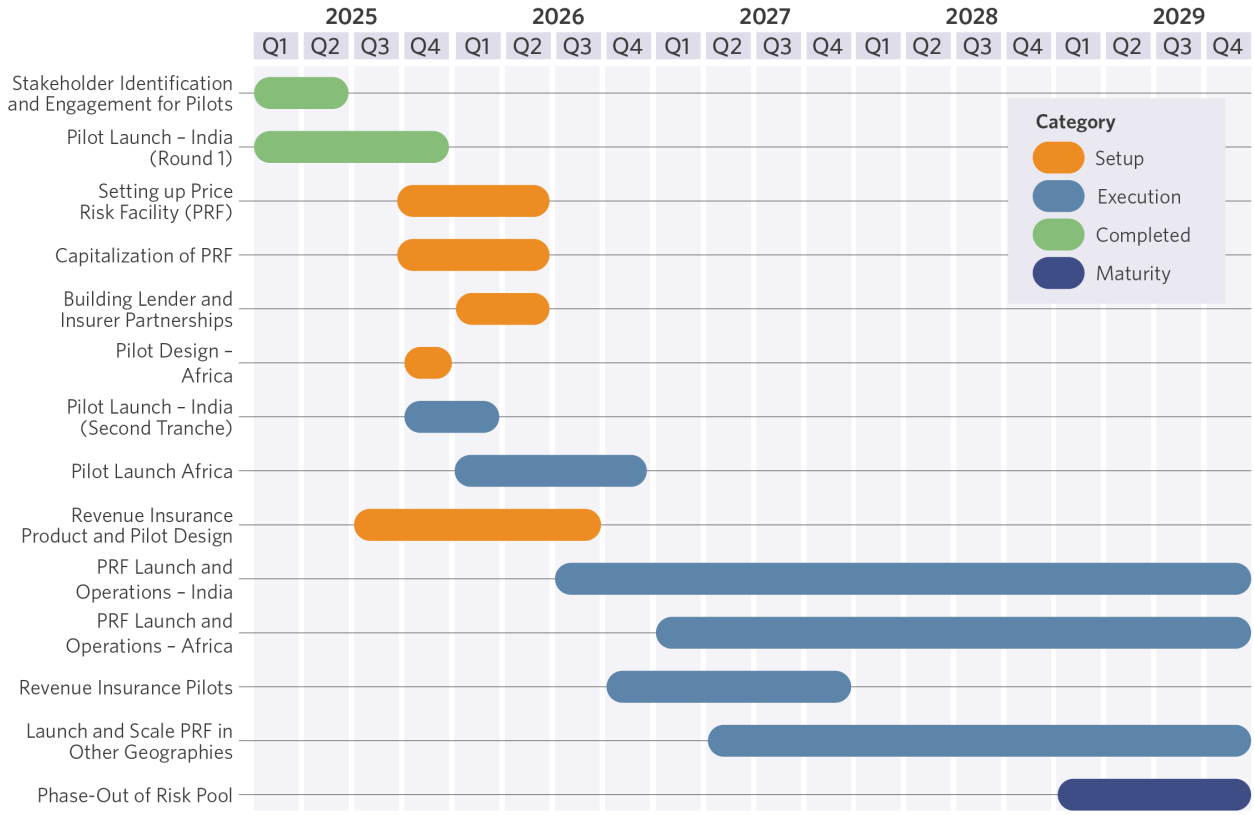
prompting a long-term transition toward revenue insurance that covers both yield and price risks for comprehensive risk mitigation.

Table 3. Key learnings from pilot projects and next steps

#	Key Takeaway from pilots	Next Action	Time horizon
1	The price insurance product is operationally and commercially viable.	The price insurance product can be deployed at scale in multiple geographies.	N/A
2	Insurers are positive about the price insurance product, though they are still hesitant to deploy the product at a larger scale, as it is novel for them.	A risk pool will mitigate a portion (10-30%) of the risk for the insurers. The risk pool will be funded entirely by grants, and over time, it will be phased out in mature markets and any leftover amount can be reallocated to new ones (e.g., India → Africa).	Near-term
3	Lenders are excited to deploy the product at the portfolio level and see no issues with integrating this into post-harvest loans. However, for an input loan, even after taking up price insurance, lenders are still exposed to production risk and would have to integrate additional risk mitigation strategies	The team at Agtuall will gradually move to revenue insurance from price insurance. Revenue insurance will cover both yield risk and price risk, providing comprehensive risk mitigation.	Mid-term

Key milestones for Agtuall over the next six months include: (1) establishing a legal entity to enable PRF to cover part of the payout through the risk pool; (2) raising grant funding to capitalize the risk pool; and (3) formalizing operational structures with existing insurer and lender partners to integrate price insurance at the portfolio level, while onboarding additional insurers. The team is seeking support from philanthropies focused on agriculture, climate resilience, and financial inclusion. Projections indicate the Price Risk Facility will need USD 2 million in grants, sufficient to underwrite the facility for three years. In the long run, the proponent aims also to provide revenue insurance, protecting against both price and production risk. This remains at an early concept stage, with design and prototyping planned for 2026-27.

Figure 3. Implementation Plan



3.2 POTENTIAL RISKS AND CHALLENGES TO INSTRUMENT SUCCESS

While the Price Risk Facility is designed to address critical gaps in agricultural finance, its success depends on navigating several operational, financial, and market-related risks. The following table outlines the key risks and strategies planned to mitigate them.

Table 4. Key risks and mitigation strategy

#	Risk	Mitigation Strategy
1	Slow uptake from insurers can delay the adoption.	Risk pool with higher subsidy in the first year, gradually tapered down in the subsequent years, should drive adoption.
2	Higher-than-expected payout in early years can wipe out the risk pool prematurely.	The risk pool will be sized appropriately and have an additional layer of callable grant capital to ensure that it is sufficiently sized in early years.
3	PRF depends on historical data for agricultural commodities.	The Price Risk Facility will launch in emerging markets where data is available, beginning with India, a large and well-suited market. The instrument can also provide insights for policymakers/regulators and insurers to develop the required digital infrastructure.
4	Dependency on partner institutions to achieve climate, gender, and other inclusion goals.	Incentivizing climate and gender mainstreaming targets through premium subsidies and other incentives.

4. FINANCIAL MODELING OUTCOMES

Pilot results demonstrate that the Price Risk Facility is economically viable without external support. In the completed pilots, insurers collected premiums, processed claims, and made payouts, thereby validating the risk-pricing methodology and the product's financial sustainability. Payouts made were within expected ranges, confirming that the instrument is ready for market adoption without concessional capital.

For a USD 1 million loan, the policy sets the sum insured at 10-15% of the loan, depending on the loan's nature (e.g., input or post-harvest financing, geography, market conditions), with an average sum insured of USD 125,000. Premiums are typically 2-5% of the sum insured, so on average, the gross premium payable to the insurer is USD 4,400. Between 10 and 15 percent of the premiums will be collected as a fee by the price risk facility, Agtuall. In the event of a payout, the risk pool will cover between 10 and 30 percent of the total amount.

The risk pool is not needed to make the product variable, but rather to accelerate the adoption of a novel risk mitigation instrument. By co-underwriting the price insurance and partially absorbing the payout (10-30%), the instrument lowers risk for insurers, facilitates competitive pricing for farmers and lenders, and builds confidence in the product. As per the model, targeted support will begin at 30% of the payout in Year 1, decrease to 20% in Year 2, and 10% in Year 3, and fully phase out from Year 4 onwards. Any leftover grant capital from the risk pool can be redeployed to expand into new geographies.

Financial modelling was conducted using Agtuall's pricing policy to calculate payouts as a percentage of the sum insured. Based on the pilots' operations with four crops (Maize, Channa – Bengal Gram, Soyabean, Red Chili), the premiums and strike prices have been simulated to estimate the expected payout for each crop. The average payout ratio for a particular crop was then used to estimate the average payout based on the portfolio projections. The projections are based on the interest and ongoing conversations with lenders. The analysis also demonstrated that aggregate payouts fell significantly as the portfolio diversified, by adding more crops or covering both input and post-harvest loans. Diversification with Agtuall's expansion into additional markets and geographies is expected to yield significant commercial benefits with the potential to further reduce premiums.

Table 5. Financial modelling outcomes

Year	Sum Insured (USD M)	Loan Value Enabled (USD M)	% of payout paid by Risk Pool (%)	Risk Pool Size (USD M)
2026	14	105	30	0.27
2027	28	210	20	0.36
2028	65	500	10	0.41

Key takeaways from the model:

1. Pilots confirm the commercial viability of the instrument.
2. The risk pool is a temporary catalytic mechanism to enable rapid scale-up.
3. As the instrument diversifies into additional crops and geographies, it becomes less likely that all the markets will suffer price shocks at the same time, resulting in a high multiplier effect between the risk pool and loans enabled.

5. CLIMATE AND SOCIAL IMPACT STRATEGY AND PROJECTIONS

The Price Risk Facility unlocks credit for farmers, shields their income from price crashes, and curbs food loss while complementing existing climate tools to build broader agricultural resilience.

5.1 IMPACT MEASUREMENT AND MANAGEMENT STRATEGY

The Price Risk Facility is based on the premise that protecting farmer incomes through price protection enables access to credit, which, in turn, allows investment in resilience, such as crop diversification, post-harvest infrastructure, and climate-smart practices. This approach serves as the basis for the strategy to measure and manage PRF's impact.

The instrument embeds price risk coverage directly into loans at the lender level, enabling rapid scalability, even in India's fragmented agricultural market. However, this design complicates tracking outcomes at the individual farmer level due to the indirect link. Hence, KPIs are grouped into two categories:

- **Core KPIs**: Tracked across all policies issued through routine data collection from financial institutions and insurers.
- **Deep-Dive KPIs**: Require targeted data collection and are evaluated periodically through third-party assessments only for specific projects or geographies.

The impact measurement will cover the following key dimensions:

- **Access and uptake**: Track how PRF enables underserved farmers, especially women and first-time borrowers, to access formal credit by mitigating price risk.
- **Risk mitigation**: Measure the effectiveness of insurance payouts during shocks and their contribution to lowering borrower defaults and improving credit terms.
- **Resilience and diversification**: Use transactional and third-party data to understand whether farmers invest in diversification, infrastructure, and climate-adaptive strategies.

Table 6 summarizes PRF's key performance indicators, detailing metrics, categories, and methodologies to track access, risk mitigation, and resilience outcomes for farmers and lenders.

Table 6. Key Performance Indicators – Price Risk Facility

Category	Metric	Methodology
1. Access and Uptake		
Core	**Farmers/FPO enrolled** - Total number of farmers accessing PRF-supported credit or insurance products	Measured by partner lender and FPO enrollment records for PRF-supported loans or insurance products.
Core	**% women and marginalized farmers** - Share of enrolled farmers who are women or from disadvantaged groups	Calculated using gender and social group data from borrower KYC details maintained by partner lenders.
Core	**Financial institutions onboarded** - Number of partner FIs offering PRF-backed instruments	Counted from PRF partnership agreements and program onboarding records.
Core	**Volume of credit disbursed** - Total loan volume enabled through PRF	Measured using loan disbursement data from partner lender MIS reports.
Core	**% first-time borrowers** - Share of farmers receiving credit for the first time	Determined by lender records indicating borrowers with no prior formal credit history.

2. Risk Mitigation		
Core	**Value of price risk insured** - Total value of output underwritten through price protection mechanisms	Measured from insurance policy data showing the total value of the sum covered under PRF.
Core	**Average coverage per farmer** - Value of coverage as a % of expected production income	Calculated from insurance policy data by dividing the coverage value by the farmer's expected production income as reported to the lender.
Deep-Dive	**Change in borrowing cost/terms** - Lowered Interest or Higher LTV	Measured by comparing loan interest rates or loan-to-value ratios before and after PRF-backed financing, using lender records.
Core	**Claims paid / loss ratio** - Total payouts made as a % of premiums collected or value insured	Calculated from insurer records as total payouts made divided by premiums collected or total value insured.
Core	**Farmers protected during price shocks** - Count of farmers receiving payouts or protected during market downturn	Counted from claims and payout data for farmers receiving compensation during covered market downturns.
Core	**Time to payout** - Average time from trigger to compensation (if applicable)	Measured from insurer records as the average number of days between a price trigger event and payout to farmers.
3. Resilience & Diversification		
Deep-Dive	**Use of post-harvest infrastructure** - % of farmers using cold storage, warehousing, or similar services	Determined through farmer surveys or lender/partner reports on usage of cold storage, warehousing, or similar facilities.
Deep-Dive	**Crop diversification index/Portfolio diversification of the lender** - Change in number or mix of crops grown per household	Calculated from lender loan portfolio data or farmer surveys, measuring the change in crop mix over time.
Deep-Dive	**Post-harvest loss reduction** - % decrease in spoilage or quantity lost after harvest	Estimated from farmer surveys or independent field studies comparing pre- and post-intervention spoilage levels
Deep-Dive	**Adaptation-enabling investments** - % of borrowers investing in climate-smart or adaptation-related improvements	Measured from borrower investment records or surveys identifying spend on climate-smart or adaptation-focused improvements.
Deep-Dive	**Estimated GHG reduction from spoilage** - Tons of CO2e avoided due to reduced food waste	Modeled using reduced spoilage data and standard emissions factors for methane avoidance from food waste.

5.2 PRE-INVESTMENT IMPACT MODELING PROJECTIONS

Once fully capitalized and operationally scaled, PRF is expected to deliver measurable benefits to farmers and agri-lenders. By integrating price risk coverage directly into loans at the point of origination, the instrument can achieve rapid scale that would be difficult in fragmented markets like India. Table 7 presents the anticipated impact projections over the next three years, based on reasonable uptake estimates and market conditions.

Table 7. Impact metric projections

#	Impact Metric	2026	2027	2028
1	Value of Price Risk Ensured	USD 14M	USD 28M	USD 65M
2	Loans Enabled	USD 105M	USD 210M	USD 500M
3	Number of Farmers benefitting from Price Insurance	175,000	350,000	600,000

5.3 PRELIMINARY GENDER STRATEGY

In its current form, the Price Risk Facility is a gender-sensitive instrument that recognizes gender inequalities but has not yet robustly addressed them. This limitation stems partly from the fact that the instrument does not engage directly with farmers, making it harder to identify and respond to the distinct needs of women farmers.

The strategy going forward is to leverage the risk pool not only to achieve scale but also to intentionally address these gaps. The additional risk mitigation being offered by the risk pool can be used to incentivize lenders, such as subsidizing the cost of premiums, to lower barriers for under-served groups.

Much like resilience-building, the Price Risk Facility delivers the greatest impact when complementing existing initiatives. As agri-lenders increasingly integrate gender inclusion into their practices, the Facility will be better positioned to reinforce those efforts, using its ability to mitigate price and other risks to help lenders scale while further incentivizing gender-responsive lending.

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