The Lab
Global Innovation Lab for Climate Finance

THE SEEDED INITIATIVE

INSTRUMENT ANALYSIS
OCTOBER 2025

The Seeded Initiative

LAB VEHICLE ANALYSIS

September 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).

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SUMMARY

Brazil must scale up native seedling production fivefold, to about one billion seedlings annually, to meet ecological restoration targets under national and international climate and biodiversity commitments (Silva 2024; Brazil 2024a; Brazil 2024b). However, seedling nurseries lack the necessary capital and professional support to expand their operations to meet this demand (Silva 2025).

The Seeded Initiative offers a financial mechanism to address this bottleneck by channeling professionalization support and short and long-term credit to producers of native plant species (nurseries). It uses a blended finance approach featuring a receivables-backed fund and de-risking measures through technical assistance, monitoring, and offtake agreements. The mechanism is designed to integrate the restoration value chain by focusing on seedling nurseries and formalizing their role between off-takers and suppliers. The mechanism will gradually transition to market-based conditions.

Led by Silva and Instituto Belterra, with implementation support from Rede Nativas Brasil, the instrument seeks to mobilize private capital for this emerging but essential sector. The structure builds on existing financial tools and frameworks making implementation feasible.

This assessment finds that the instrument meets the Lab's key criteria for innovation, actionability, financial sustainability, and catalytic potential, as outlined below.

- **Innovative**: Tackles a critical bottleneck in Brazil's restoration value chain by enabling the flow of working capital and investments into seedling nursery infrastructure through receivables-backed credit and layered de-risking. Enhances coordination between nurseries, buyers, and suppliers with tailored financial products.
- **Actionable**: Uses well-recognized capital markets instruments (CPR-F, FIDC, escrow account, offtake agreements), which are familiar to investors. Also, market feasibility has been assessed, and investors, off-takers, and nurseries have expressed initial interest in the financial mechanism.
- **Financially Sustainable**: A blended finance model lowers risk in the early stages to attract private capital, which is essential for this emerging sector. As performance and credit data improve, the mechanism transitions to full market rates to remunerate investor's capital, reducing dependency on concessional capital.
- **Catalytic**: Unlocks access to credit for seedling nurseries, creating a replicable model that could scale across various ecosystems within and cross-border, catalyzing a new impact investment market.

The Lab Secretariat recommends endorsing The Seeded Initiative to support Brazil's restoration economy as it meets the Lab criteria.

The next steps involve launching the proof-of-concept phase with selected nurseries and finalizing partnerships with capital markets participants. Refining credit risk-sharing structures and deploy technical assistance alongside initial financing are priorities.

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CONTEXT

Brazil's high-integrity restoration goals are at risk due to a native seedling supply gap: only one in five seedlings needed are currently produced. Additional finance is required to enable seedling nurseries to expand production capacity and reliably supply large-scale restoration efforts.

Brazil's updated Nationally Determined Contribution (NDC), presented at COP29, pledges a 59-67% reduction in greenhouse gas emissions by 2035 (Brazil 2024a). Achieving this goal hinges on restoring native vegetation at scale, both to sequester carbon and to meet biodiversity and land-use targets. Under the National Plan for Native Vegetation Recovery (PLANAVEG), Brazil committed to restoring 12 million hectares by 2030 (Brazil 2024b), while the Arc of Restoration initiative sets an even more ambitious target of 24 million hectares by 2050 (Brazil 2024a).

Ecological restoration via nature-based solutions (NbS), such as reforestation and agroecological transitions using native species, represents a cornerstone of Brazil's long-term strategy for climate neutrality and biodiversity pledges. With approximately 105.5 million hectares of degraded land in 2023 (Mapbiomas 2024), an area comparable to France and Spain combined, the opportunity for large-scale impact is significant. Assuming the restoration of 12 million hectares, in line with national targets, and considering that native vegetation restoration can sequester between 6 and 12 tons of carbon dioxide (CO_2) per hectare per year, the total carbon removal potential would range from 72 million to 144 million tons of CO_2 per year.

However, the country currently produces only 200 million native seedlings annually, far short of the more than one billion needed by 2030 (Silva 2024; Brazil 2024a; Brazil 2024b). Seedling nurseries, a critical link in the restoration supply chain, remain chronically undercapitalized. They face barriers including limited access to credit, fragmented value chains, and weak contract security. Many operate without collateral or formal credit history and lack financial products suited to their seasonal cash flows and species diversity (Silva 2025).

This financing gap is compounded by the absence of structured solutions that reflect the realities of the sector, such as long lead times, uncertain demand, and lack of liquidity. Without working capital, infrastructure investments, and professionalization, nurseries cannot meet the projected surge in demand triggered by public and private restoration efforts.

The Seeded Initiative seeks to address this financing constraint through a blended finance structure tailored to native seedling production. It integrates a receivable-backed fund and de-risking mechanisms. This approach expands credit access and also strengthens linkages among buyers, suppliers, and service providers, helping to establish the foundations for a market-ready restoration economy in Brazil and providing a potential model for other jurisdictions. Beyond addressing the financing bottleneck, the Initiative delivers measurable environmental benefits. By unlocking production capacity, potentially enabling 1 billion seedlings per year, the instrument could support restoration of roughly 670,000 to 1 million hectares and yield an estimated 8.6 to 18.3 million tons of carbon dioxide equivalent (CO_2e) of additional annual removals under preliminary assumptions.

DESIGN AND POSITIONING

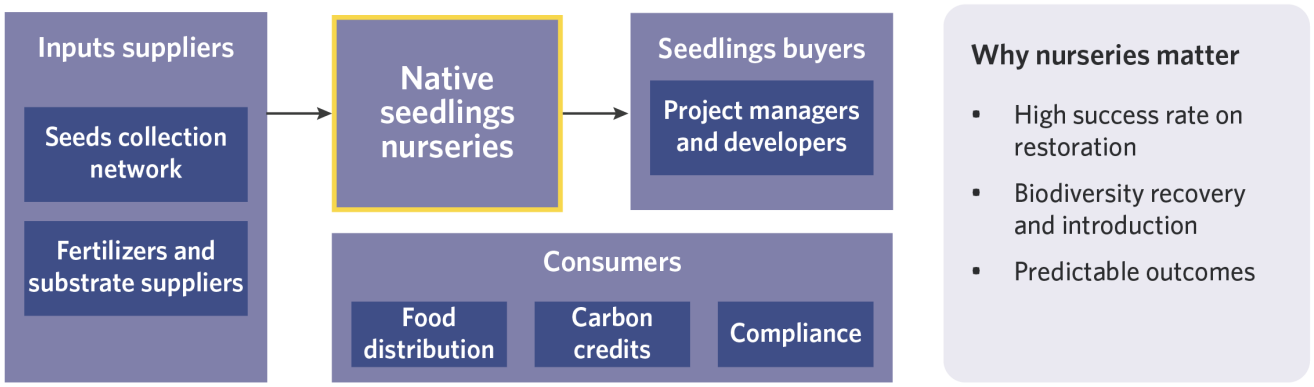
1. INTRODUCTION TO THE VEHICLE

Blended finance instrument focused on scaling native seedling nurseries in Brazil's main ecosystems by providing working capital through receivables-backed debt and risk-mitigating support.

1.1 **INVESTMENT THESIS:** UNLOCKING CAPITAL TO SCALE NATIVE SEEDLING SUPPLY AND ACCELERATE BRAZIL'S RESTORATION TARGETS

Restoration value chains in Brazil comprise interconnected players, inputs, and incentives that must align to enable large-scale reforestation. Central to these chains are native-seedling nurseries, a critical actor for delivering biodiversity, scale, and quality. They serve as the primary platform across the broader restoration field, including landowners, companies, and communities engaging seeds collection.

Figure 1: Native seedling nurseries supply chain



Despite their strategic role, most nurseries lack access to affordable capital for upfront input costs and investments in infrastructure. Traditional credit products remain largely inaccessible due to business informality, perceived and actual risks, or lack of collateral. This structural financing gap constrains production capacity and limits restoration at scale.

The Seeded Initiative's investment program targets two main areas: working capital for nursery operations, focusing on financing essential inputs such as seeds, substrates, and fertilizers; and, as the program scales, selective support for CAPEX investments, including irrigation systems, seedling trays, and nursery expansion to increase production capacity and elevate quality standards.

This financing mechanism enables nurseries to access liquidity without relying on high-cost debt or adding transaction risk. The capital supports increased output, species diversification, and operational efficiency. Consequently, restoration projects benefit from more consistent access to high-quality seedlings, which may enhance implementation timelines, ecological success, and monitoring credibility.

Market demand for restoration finance is expanding rapidly. As noted in the context section, Brazil's restoration targets induce a demand for over one billion native seedlings annually by 2030, compared to

current production levels of approximately 200 million seedlings per year. This gap represents a substantial market opportunity for financing scalable nursery operations. The investment thesis holds that by enabling nursery liquidity, the vehicle supports measurable environmental and socio-economic outcomes: increased seedling supply could enhance reforestation success, improve carbon sequestration and biodiversity indicators, and contribute to climate targets. Simultaneously, the financing model may encourage job creation, particularly in rural communities, and promote gender equity in workforce development.

Over the long term, improved coordination across the restoration chain could foster a more resilient, investable ecosystem. Nurseries may emerge as anchor enterprises within green infrastructure, potentially catalyzing broader capital flows into the sector.

For more details, refer to Annex I – Theory of Change.

1.2 TARGET PIPELINE: A HIGH-QUALITY NURSERY NETWORK

To assess the initial pipeline, the team defined eligibility criteria for nurseries seeking inclusion in The Seeded Initiative portfolio and participation in future restoration projects. These criteria aim to ensure partnerships are grounded in operational capacity, legal compliance, and a shared commitment to ecological restoration.

Table 1: Selection criteria

Category	Criteria
Geographic Location	• Ecosystems: Amazon, Cerrado, or Atlantic Forest • Operation in regions with current or future demand for restoration • Facilitated access (e.g., near paved road)
Compliance	• Registered legal entity, with RENASEM[1] and relevant licenses • Responsible and responsive management • No relevant litigations or environmental infractions
Operational capacity	• Proven ability to fulfill orders with quality and punctuality • Prior participation in restoration projects • Desirable involvement with local collectors/communities
Financial Readiness	• Basic accounting practices • Willingness to undergo financial diagnosis with Silva • Absence of active default with financial institutions
Commitment to the Model	• Willingness to sign future purchase contracts or prior commitments • Openness to sharing inventory data and timelines • Interest in technical support and the Silva nursery community

The key selection criteria for nurseries include geographic location within priority ecosystems (Amazon, Cerrado, or Atlantic Forest) and operation in areas with existing or anticipated restoration demand. Nurseries must be legally registered with appropriate licenses and demonstrate responsible management without significant legal or environmental issues. Operational capacity is assessed on proven order fulfillment, prior restoration experience, and ideally, engagement with local collectors or communities.

[1] National Registry of Seeds and Seedlings (From Portuguese, Registro Nacional de Sementes e Mudas.

Financial readiness requires basic accounting, a willingness to undergo financial assessment, and no active defaults. Finally, nurseries must show commitment to the model through contractual willingness, transparency in inventory and timelines, and openness to technical support and community engagement.

Alignment with the impact thesis requires that invested nurseries maintain high seedling quality standards, promote species diversity, and adopt sustainable collection practices. All invested companies are expected to follow the technical protocols developed by Silva.

Figure 2: Nativas Brasil network of nurseries

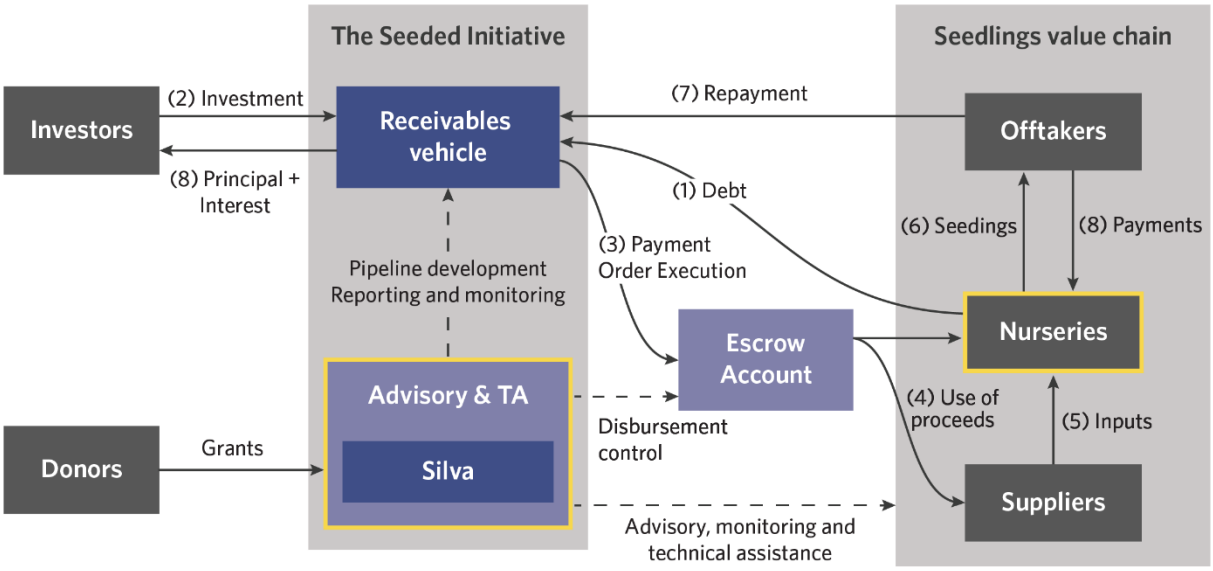
The immediate pipeline currently comprises 130 nurseries affiliated with Nativas Brasil, an association structuring the Brazilian production of native species for ecological and productive restoration nationwide. As the implementing partner for nursery relationships, Nativas Brasil's work aids in building up the pipeline through bridging the needs of nurseries with the financial mechanism. In addition to that, Silva has also conducted diagnostics and field assessments to map and address the main issues that nurseries face. Figure 2 illustrates Nativas Brasil network of nurseries.

In parallel, the team is formalizing institutional partnerships with anchor buyers and input providers. These partnerships support ongoing monitoring of compliance and creditworthiness, enabling the continuous selection of nurseries aligned with The Seeded Initiative's principles.

1.3 **VEHICLE MECHANICS:** REVOLVING FINANCE MODEL FOR NURSERIES

The Seeded Initiative uses a revolving debt structure to address persistent working capital and long-term financing constraints faced by native seedling nurseries in Brazil. The financial vehicle deploys capital with defined processes and manages risk through collateralized receivables and escrow-controlled disbursements.

Figure 3: Instrument Mechanics



The process begins with nurseries formalizing two types of commercial contracts:

- Seedling sales agreements with off-takers.
- Input supply agreements with pre-approved suppliers.

These agreements define both payment obligations and future cash flows that underpin the financial structuring. Based on these contracts, nurseries issue a CPR-F (Cédula de Produto Rural – Financeira), a legally recognized and enforceable rural promissory note. The CPR-F is assigned to a receivables vehicle along with the corresponding receivables and a payment order directing funds to suppliers.

The financial vehicle issues investment quotas or certificates to commercial and concessional investors. These are backed by the CPR-F and assigned receivables, enabling capital mobilization. Subscribed funds are allocated to an escrow account managed by Silva, which oversees disbursement to suppliers according to the nurseries' production plan.

Once suppliers deliver materials, nurseries begin producing seedlings. When seedlings are delivered to off-takers as per contract, the receivables vehicle receives repayment, returns profits to investors, and transfers the residual balance to nurseries, completing the cycle.

To monitor quality and impact, the vehicle includes a Technical Assistance (TA) facility, also managed by Silva. The TA component supports pipeline development, monitors compliance, and provides reporting on operational and environmental indicators. The TA may be supported by philanthropic capital in the early stages of the instrument.

1.4 DETAILED INVESTMENT STRATEGY

The investment strategy focuses on CPR-F notes issued by nurseries and assigned in advance through receivables-assignment clauses to a CRA (Agribusiness Receivables Certificate) in the initial stages, and to an FIDC (credit receivables investment fund) as it scales. Following the common FIDC structure, the CPR-Fs form the underlying assets for quotas or debt certificates acquired by investors.

Loan characteristics are tailored to the operational realities of nurseries:

- **Ticket sizes**: Approximately BRL 500,000-750,000 (USD 91,000-128,000[2]) per cycle, scalable with nursery capacity.
- **Interest rates**: Below-market in early stages (targeting ~80% of the Brazilian bank prime rate), increasing gradually to market-aligned returns.
- **Tenors**: 12-24 months, aligned with restoration and seedling growth timelines.
- **Collateral**: Assigned receivables, fiduciary lien on inventory or production, and escrow-controlled funds.

This structure serves a diverse pipeline of small to mid-sized nurseries, offering flexible terms and repayment aligned with forward-contracted sales. The combination of contracted offtake, receivables assignment, and escrow management ensures enforceability and reduces financial risk.

For CAPEX financing, the same receivables-backed structure can be applied using a project finance approach. Longer-term loans would be structured based on the projected cash flows from increased production capacity. Repayment would occur over an extended period, using incremental revenues generated through expanded operations, while maintaining fiduciary controls through the escrow mechanism. This allows nurseries to invest in infrastructure, equipment, or technology upgrades necessary for scaling and long-term productivity gains.

As the vehicle evolves, from a CRA-based to a scalable FIDC, its design allows for the inclusion of larger nursery cohorts without changing core mechanics. The dual-tranche structure, combining concessional and commercial capital, enables catalytic early-stage investment while maintaining appeal for institutional investors seeking stable, asset-backed returns with measurable ecological benefits.

[2] Exchange rate: BRL 1 ≈ USD 0.18 USD, based on oanda.com data for 12 August 2025.

2. MARKET ADDITIONALITY ANALYSIS

The Seeded Initiative is the first financial instrument in Brazil tailored to the needs of native seedling nurseries, filling a critical market gap in restoration finance through risk-managed, receivables-backed credit.

Although Brazil has expanded its portfolio of financing instruments for nature-based solutions and ecosystem restoration, there is currently no mechanism specifically designed to support native seedling nurseries. Existing tools predominantly target landowners, carbon project developers, or end buyers engaged in reforestation and agroforestry.

In contrast, The Seeded Initiative addresses a critical upstream segment of the restoration value chain that remains undercapitalized despite its central role in enabling large-scale ecological recovery. The table below summarizes key features of comparable instruments in Brazil and highlights how The Seeded Initiative fills a distinct market gap.

Table 2: Similar instruments

Instrument	Overview	Differentiation
Reverte	Long-term credit for restoration of degraded pastureland in Cerrado.	• Credit directly to producers. • Focuses on restoration for production, not ecological restoration.
Terra Fund / Fundo Flora	SPV-based loans for African SMEs in restoration, piloted with grants and first-loss capital. Expanding to Brazil.	• Targets restoration SMEs with risk-reducing capital. • In Brazil, there is no clear thesis regarding the nurseries.
LATM / Violet	Financial tools for integrated systems and land restoration.	• Does not prioritize nursery pipeline development. • Complementary – Seeded can be a pipeline builder for Violet
RenovAgro Ambiental (Plano Safra)	Public credit line for native restoration in protected rural areas	• The 2025/2026 plan included the possibility of using the funding for seedlings production. • While pursuing traditional capital market structure (CRA and FIDC), the proponents are also pursuing how to channel public policy resources.

2.1 SWOT ANALYSIS

2.1.1 STRENGTHS

Unlike broader restoration finance vehicles, The Seeded Initiative channels capital directly to input providers using established legal and financial instruments. The instrument aligns with the seasonal cash flow characteristics and specific risk profiles of nursery operations, substantially lowering financing entry thresholds. It combines working capital and investments with technical assistance and performance-based de-risking mechanisms to support a segment of the market that has remained largely excluded from traditional finance.

2.1.2 WEAKNESSES

Nurseries in Brazil are marked by fragmentation, informality, and weak commercial linkages, which increase counterparty risk and limit access to finance. Many nurseries lack standardized governance,

operate without formal contracts, and struggle to maintain reliable off-taker relationships, resulting in liquidity challenges. The instrument addresses these weaknesses by incorporating value chain coordination features. It promotes early-stage business formalization and facilitates structured relationships with off-takers and suppliers, thereby reducing counterparty risk and improving liquidity. This approach has been carried out with success by Silva.

2.1.3 OPPORTUNITIES

Strategically, The Seeded Initiative is well-aligned with Brazil's climate policy framework, including the PLANAVEG and the Arc of Restoration program. It responds directly to growing public procurement signals and rising demand from the private sector for scalable, nature-based solutions and verifiable carbon removal strategies. Moreover, it provides a structured investment opportunity for impact-oriented investors seeking exposure to biodiversity and land-use transitions.

2.1.4 THREATS

Restoration in Brazil faces significant threats from macroeconomic volatility, high interest rates, and shifting policy priorities, all of which can deter investment and restrict credit access for small and informal actors such as nurseries. These risks are compounded by the nascency of the sector, where limited data and track record make it harder to attract commercial capital. The instrument partially mitigates these risks through a blended capital structure that allocates concessional resources to absorb early-stage risk and gradually attracts commercial investment as performance data accumulates. Its capacity to operationalize credit for a previously inaccessible market segment could position the Seeded Initiative as a catalytic solution capable of enabling a new class of investable assets in Brazil's restoration economy.

IMPLEMENTATION AND OPERATIONALIZATION

3. IMPLEMENTATION PATHWAY AND REPLICATION

The Seeded Initiative follows a phased, evidence-based implementation pathway, starting with proof-of-concept pilots to refine its blended finance model, before scaling to a self-sustaining facility capable of replication in other restoration markets.

3.1 NEAR-TERM IMPLEMENTATION PLAN

The Seeded Initiative's roadmap includes a sequenced rollout, moving from initial testing to a dedicated financial facility for restoration input providers. The near-term implementation plan will test and validate its financial and operational model through a two-track Proof of Concept (PoC) phase in the first year of operation. This stage aims to assess the viability of tailored financial instruments for native seedling nurseries, targeting both working capital and infrastructure investment needs. Each track will engage a cohort of 10 nurseries, selected from a pre-validated pipeline developed by the team, prioritizing readiness, regional diversity, and potential for scale.

Table 3: Proof-of-concept phases and parameters

Key Parameters	PoC I – OPEX Focus	PoC II – CAPEX Focus
Scope	BRL 5 million [USD 918,000] to finance working capital across 10 nurseries	BRL 5 million [USD 918,000] for infrastructure upgrades across 10 nurseries
Term	12 months	24-36 months
Average ticket per nursery	BRL 500,000 [USD 91,000]	BRL 500,000 [USD 91,000]
Use of Proceeds	Seasonal input purchases, payroll, operational liquidity	Greenhouses, irrigation, seed storage, nursery layout improvements
Risk Mitigation Strategy	Controlled disbursements, offtake contracts, and TA support and monitoring	Controlled disbursements, offtake contracts, and TA support and monitoring. Guarantees over facilities can be considered.
Items to be Tested	Interest rate, default rate, and the structured repayment via offtake contracts	Interest rate, default rate, and the structured repayment via offtake contracts

Together, the two tracks will provide operational data and insights to refine The Seeded Initiative's structure and risk management framework. Key implementation items for testing include the suitability of interest rates, default rates, and risk mitigation structures. Addressing these elements at this stage will lay the foundation for a scalable, investable model capable of mobilizing greater volumes of capital in subsequent phases.

3.2 FUNDRAISING STRATEGY AND IMPLEMENTATION TIMELINE

To scale The Seeded Initiative effectively, a phased capital mobilization strategy will be implemented. Each stage will test, validate, and expand financial solutions for native seedling nurseries while gradually reducing reliance on concessional capital. The strategy comprises four phases: a two-part PoC as described above, a Pilot, a Commercial, and a Scale-Up phase, as detailed in Table 4:

Table 4: Phased capital deployment

Phase	Vol. BRL [USD]	Ticket BRL [USD]	Nurseries	Use	Leverage	TA
PoC I	2.5 - 3M [0.45-0.55M]	500k [91k]	10	OPEX	1:1	Grants
PoC II	2.5- 3M [0.45-0.55k]	500k [91k]	10	CAPEX	1:1	Grants
Pilot	15 - 20M [2.7-3.6 M]	500k [91k]	50	Mixed	1:3	Grants
Commercial	60 - 80M [10.9-14.5M]	750k [137k]	100	Mixed	1:5	Embedded
Scale-Up	250M [45.5M]	750k [137k]	Nurseries and other players in the restoration value chain	Mixed	1:10	Embedded

Each phase builds on the previous one, with a gradual evolution in capital structure, risk mitigation, and technical assistance delivery.

In the first phase (PoC I and II), a high level of concessional capital will be required to ensure viability for nurseries. The financing model is expected to combine 50% returnable grants (with principal-only repayment) and 50% commercial capital with market-aligned returns. This may change based on investor capital requirements. TA will be fully grant-funded, covering approximately 2% of the overall structure to support due diligence, operational guidance, and monitoring.

For the Pilot , with a broader pipeline and early proof of concept, the concessional portion is expected to decrease to 20-30%, structured as first-loss capital to protect commercial investors. TA will remain externally funded through grants, helping keep the cost of capital affordable and favoring investor confidence through enhanced support and risk monitoring.

At the Commercial phase, with a mature credit model and a track record of low default rates, concessional capital is expected to decrease to10-20%. Risk mitigation will shift to facility-level guarantees and structured credit enhancements. TA delivery will transition to funding from management fees embedded in the financial vehicle, ensuring a self-sustaining and scalable model.

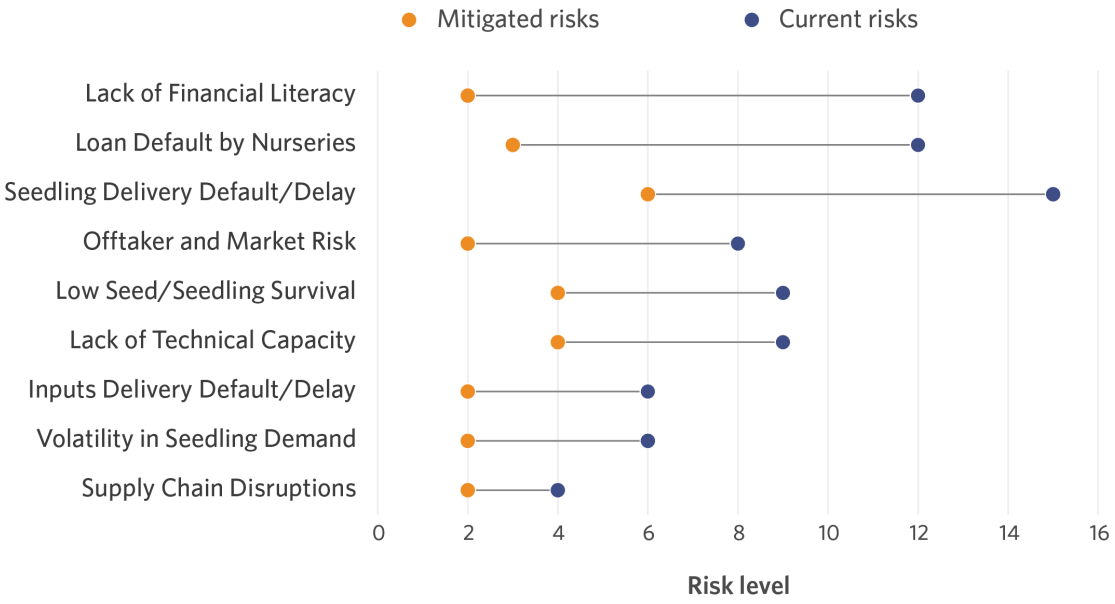
Following successful validation of the commercial model, The Seeded Initiative envisions a Scale-Up Phase with a target capital deployment of BRL 250 million [USD 46 million]. This phase will extend support beyond nurseries, addressing key bottlenecks across the broader restoration value chain, including seed networks, logistics, germination infrastructure, technical assistance providers, and demand aggregation platforms. The goal is to establish a foundation for replication in other Latin American countries with similar ecosystems.

3.3 POTENTIAL RISKS AND CHALLENGES TO INSTRUMENT SUCCESS

Under a business-as-usual scenario, The Seeded Initiative team identified 10 key risks across three categories: financial, operational, and commercial. These risks were assessed for their severity before and after applying the initiative's integrated mitigation strategy, which is built on three core pillars:

1. **Financial Control:** The vehicle reduces credit risk through escrow-managed disbursements made directly to input suppliers, linked to contractual milestones and validation. Pre-signed offtake agreements help secure predictable revenue streams, significantly lowering borrower default exposure.
2. **Operational oversight:** To manage risks related to production performance, climate variability, and logistics, the initiative includes continuous technical assistance and performance monitoring. This structure, adapted from proven models such as Conexsus and Tabôa, supports early identification of bottlenecks and targeted interventions to maintain quality and delivery.
3. **Risk diversification:** A diversified portfolio of nurseries across different biomes and contexts limits exposure to localized disruptions. This strategy enhances resilience to systemic shocks while supporting replication and scalability.

Figure 4: Risk levels before and after mitigation measures



Two categories of residual risk remain after the risk mitigation strategy: performance risk and off-taker risk. Performance risk includes environmental and logistical uncertainties, such as droughts, floods, pest outbreaks, or transportation delays. These are addressed through climate-resilient protocols, early-stage screening, and periodic field assessments with support from technical partners.

Off-taker risk stems from potential challenges in securing long-term demand or ensuring compliance with signed agreements. To reduce this, The Seeded Initiative prioritizes buyers with strong institutional or corporate backing.

To absorb residual risks, the proponents are considering establishing a risk guarantee fund in the structure's later phases. This contingent facility could cover losses from unmanageable events and be triggered by parametric indicators, such as extreme weather events (e.g., droughts, floods) verified by independent sources, providing an additional layer of protection to both nurseries and investors.

4. FINANCIAL MODELING OUTCOMES

As outlined in previous sections, the project's expansion strategy foresees a phased increase in disbursements, aligned with the growth in the number of participating nurseries and a gradual rise in the average financing ticket per nursery. For modeling purposes, production costs per seedling are estimated at BRL 0.80-1.50 [USD 0.14-0.27], while assumed selling prices range from BRL 2.00-3.50 [USD 0.36-0.64].

The financial vehicle is structured into concessional and commercial tranches, each with distinct return expectations and repayment terms across the project's four phases:

Table 5: Capital structure by phase

Phase	Concessional	Concessional Return	Commercial	Commercial Return	Repayment
PoC	50%	0%	50%	100% DI	12-18 months
Pilot	25%	80% of DI	75%	120% of DI	12-18 months
Commercial	15%	80% of DI	85%	120% of DI	12-18 months
Scale-Up	10%	80% of DI	90%	150% of DI	12-18 months

This structure reflects a gradual decrease in the reliance on concessional capital, as commercial investors become more confident in the project's risk-return profile and are increasingly willing to invest without the current subordination needed to absorb risks.

4.1.1 KEY MODELING RESULTS

To assess financial performance, three scenarios were modeled representing variations in sales prices and unit costs. Each scenario assumes a constant investment amount of BRL 10 million [USD 1.8 million]. Key results are summarized below:

Table 6: Seedling sales scenarios

Scenario	Up	Base	Down
Selling Price BRL [USD]	3,00	2,50	2,00
Variable Cost per seedling	0,80	0,88	0,96
Demand Contracted (Seedlings) BRL [USD]	12.5M	11.4M	10.4M
Gross Margin (Net sales – COGS)[3]	71,6%	62,6%	48,9%
EBITDA Margin (EBITDA/Total Revenue)[4]	60,2%	47,5%	28,3%

The EBITDA margin, ranging from 60.2% to 28.3%, demonstrates how fluctuations in price or unit cost can affect the nurseries' operational viability.

In analyzing the capital structure, the base case scenario from the previous analysis was retained, with a total disbursement of BRL 10 million [USD 1.8 million] and a 12-month repayment term. Different interest

[3] The Gross margin is calculated as the portfolio's average net sales minus the cost of goods sold, reflecting the difference between the average seedling selling price and the average variable cost per seedling based on the assumptions provided.
[4] EBITDA margin is obtained by dividing EBITDA by total revenues, following the same averaging rationale.

rates were simulated to measure their impact on financial cost per seedling and the nursery's annual financing expense. Results are summarized below:

Table 7: Interest rate scenarios

Scenario	Up	Base	Down
Amount Granted (BRL) [USD]	10M [1.8M]	10M [1.8M]	10M [1.8M]
Vehicle Return Rate	DI – 3% (12%)	DI + 0% (15%)	DI + 2% (17%)
Total Interest for the Nursery p.a.	DI – 0.5% (14,50%)	DI + 2.5% (17,50%)	DI + 4,5% (19,50%)
Debt Service Coverage Ratio	2,04x	1,99x	1,96x

Notably, the higher total interest cost in Table 7 reflects not only the vehicle return rate but also a 2.5% annual administrative and setup fee for the financing vehicle (whether structured as CRA or FDIC), which raises the effective rate charged to the nurseries.

5. CLIMATE AND SOCIAL IMPACT STRATEGY AND PROJECTIONS

The Seeded Initiative is designed to enable the restoration value chain through unlocking native seedling production at scale, generating measurable climate, biodiversity, and social co-benefits.

5.1 IMPACT MEASUREMENT AND MANAGEMENT STRATEGY

The Seeded Initiative, which combines a financial mechanism with technical assistance, is designed to achieve measurable restoration outcomes. By supporting nursery development, expanding credit access, increasing species diversity and seedling quality, and professionalizing the sector, the initiative lays the groundwork for large-scale, high-integrity restoration.

The impact strategy targets both direct results and systemic improvements across the restoration value chain. It benefits carbon project developers, regenerative agriculture initiatives, and landholders or companies required to comply with restoration mandates, all of which depend on a reliable supply of native seedlings.

Methodologies such as Verra's VM0047 (Afforestation, Reforestation, and Revegetation) and VM0042 (Improved Agricultural Land Management) require detailed information on implementation plans, baseline conditions, monitoring, and additionality. These requirements include information on the source, quality, and survival rates of seedlings. Monitoring nurseries is therefore critical to ensuring compliance and credibility in carbon credit issuance.

Similarly, Brazilian law requires traceability in the rural sector, highlighting the strategic role of developing and professionalizing the nurseries. This initiative positions nurseries as key enablers of ecosystem recovery and aligns their key performance indicators (KPIs) with international standards to improve transparency and comparability.

The initiative's impact strategy is organized around five pillars. Key metrics are outlined below, divided into environmental and social, and economic categories:

Table 8: Environmental metrics

Category	Focus	Impact Metrics
Climate Mitigation	Enable measurable carbon sequestration through large-scale restoration supported by nurseries	• Tons of CO_2e sequestered per year (ARR/agroforestry enabled) • Hectares of restoration supported annually
Climate Adaptation	Increase resilience to climate hazards such as droughts, erosion, floods, and wildfires	• Erosion-prone hectares restored • Nurseries supported in climate-vulnerable zones
Biodiversity	Expand the supply and diversity of native species tailored to biome-specific restoration goals	• Native seedlings produced per year • Native species cultivated per year • Share of production by biome

Table 9: Social and economic metrics

Category	Focus	Impact Metrics
Social Inclusion	Promote equitable rural development through job creation and inclusive access to finance.	• Jobs created • % of seeds sourced from Indigenous/local communities • Workforce stability perception during dry periods
Gender Integration	Ensure meaningful participation and leadership of women across the nursery value chain.	• % of loans to women-led nurseries • % of women in leadership/employment • # of women engaged in any nursery-related services • ÷ of women in operational roles versus leadership roles
Market Development	Strengthen nursery performance, logistics, and offtake relationships across the restoration chain.	• Nurseries supported • Off-takers engaged • Seedlings delivered • % increase in timely delivery • % improvement in credit scores • % increase in productive capacity and technology use

5.2 PRE-INVESTMENT IMPACT MODELING PROJECTIONS

To develop the impact modeling projections, only metrics that could be reasonably estimated at this stage were considered. Many additional indicators will depend on data provided by nurseries once they join the program and will be collected after the funding cycle.

Accordingly, the projections are based on assumptions outlined below in Table 10.

Scaling investment to support the production and planting of one billion seedlings annually could enable the restoration of approximately 670,000 to one million hectares. Based on average sequestration rates for tropical and subtropical ecosystems, this area could remove between 8.60 million to 18.30 million tCO_2e per year.

While this represents 0.37% to 0.80% of Brazil's total annual emissions (2.29 billion tCO_2e/2023), the impact is significant within the agricultural sector and equivalent the total rice production emissions (9 million tCO_2e/2023) or a 20% reduction in emissions from dairy cattle (51 million tCO_2e /2023) (SEEG,

2025). The mechanisms also produces critical co-benefits for biodiversity, water regulation, and climate resilience.

Table 10: Assumptions

PoC Impact Assumptions & Projections	
Project Amount	BRL 10 milion
Price per seedling	BRL1
Ticket size	BRL 500,000
Native species per hectare	5-20
Seedling density	1,000-1,500/ha
Total Quantity of Seedlings	10 million
Total hectares enabled	6,700 – 10,000 ha
Amazon	10-20 tCO_2e/ha/year
Atlantic Forest	8-18 tCO_2e/ha/year
Cerrado	3-10 tCO_2e/ha/year
Mix of Biomes	55% Amazon 35% Atlantic Forest 10% Cerrado
Carbon Final Results	= [# of hectares] enabled in the [biome] * [biome factor] * [biome %]
Nurseries supported	20
Off-takers engaged	6-8

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5.3 PRELIMINARY GENDER STRATEGY

The Seeded Initiative recognizes that gender equality and diversity are essential to building effective, inclusive, and sustainable restoration value-chains. While women and minorities play critical roles in rural economies, they remain underrepresented in ownership, leadership, and decision-making. Addressing these disparities strengthens social equity and improves both ecological and financial outcomes.

The Initiative will apply the indicators outlined in the previous chapter to assess and track gender participation. Metrics will be collected during due diligence and monitored annually to inform investment decisions and program design.

5.3.1 PHASE 1 – BASELINE MEASUREMENT

Gender participation across the upstream restoration value chain, particularly nurseries and input providers, will be collected during the Proof of Concept and Pilot phases to establish a baseline. Data

from the Nativas Brasil association, with its broader nursery network, will complement Silva's work. Updates will occur annually to track progress and identify trends.

5.3.2 PHASE 2 – INTEGRATION AND DECISION-MAKING

Baseline metrics will be cross-referenced with financial performance data to identify gaps and opportunities. These insights will guide decision-making, with gender inclusion embedded as a formal selection criterion.

To implement this strategy, the Initiative will integrate gender metrics into screening, due diligence, and portfolio monitoring. Capacity-building will enhance leadership, management, and entrepreneurial skills among women and underrepresented groups. Tailored financial structures will improve access to capital, while networking platforms will connect women entrepreneurs, nursery managers, and community leaders to share knowledge and expand markets.

These measures are expected to increase financing for women-led and minority-led nurseries, strengthen leadership representation, and build more diverse and resilient value chains. Greater inclusivity is anticipated to improve both financial performance and long-term stability for participating enterprises.

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ANNEX I – THEORY OF CHANGE

Figure 5: The Seeded Initiative Theory of Change