Part A.1: How would the program be measured in terms of financial impact per adopter? How would this metric be calculated? What data would you need to calculate this metric?

The financial impact of reforestation or afforestation initiatives can be multi-dimensional, encompassing both costs and potential sources of revenue from planted seedlings and incremental trees. One Acre Fund (OAF) has published findings from cost-benefit studies from its Tree Program, accounting for input costs, labor costs, land opportunity costs, treatment effects, as well as revenue value of tree products, firewood, and bean poles over a period of 10 years.[1] For new carbon financing projects, additional metrics may be required to calculate baseline and with-project emissions. Given the context of Rwanda's landscape mosaic, it is recommended to consider appropriate metrics from the Verified Carbon Standards of Afforestation, Reforestation and Revegetation projects (ARR), which use Clean Development Mechanism of AR-AMS007 in the following metrics. It is recommended to screen required metrics using the FAO-EXACT tool for ex-ante estimates.

1. Estimated baseline emissions **above ground biomass** and **below ground biomass** according to CDM methodology of AR-AMS0007, including increase in GHG from displacement of activities (AR-TOOL15).
2. Estimated project emissions or removals according to CDM methodology of AR-AMS0001 which accounts for total carbon stocks in biomass at time under project scenario, including metrics for above-ground biomass (Eq. 3.2.2.b) and below ground biomass emissions (Eq. 3.2.2.d)
3. Estimated leakage emissions according to AR-AMTOOL 15, which accounts for leakage resulting from the displacement of pre-project agricultural activities in a given project year.
4. *Estimated change in greenhouse gas emissions and reductions or removals.*

$$C_{change,t} = C_{project,t} - C_{baseline,t} - C_{leakage,t}$$

Data required should include the number of trees in each project area or subcompartment, the representative circumference (DBH or RCD), the species and height. Given the scale of the country, there are opportunities for remote sensing data especially as national tree maps have become available. Within the carbon finance sector, risk reduction through improved monitoring is more widely invested in. At the large scale of OAF tree planting, it is worth considering plot-level single-tree observation. A 100% sampling would require only four measurements:

1. Identify or confirm the identification of the sample area.
2. Determine the latitude and longitude of the approximate center point of the project area with a GPS.
3. Map the boundaries of the project area by walking the perimeter using a GPS.
4. Count each tree in the project area by age and species strata.

Part A.2: Besides financial impact, what other metrics should we consider using to evaluate the impact of this seedling distribution work? .

The project serves two critical issues in Rwanda by combating soil erosion and landslides. If considering another carbon pool, there are also metrics to include for soil organic carbon, fertilizer production, or residual burning. Such measurements offer data for future investment opportunities aligned with VCS or REDD+ alternatives.

Part B: Maximize potential value of tree seedling bundles

Following 5-capitals approach, reccomendations to value chain development from tree bundles are as follows:
Germplasm: Improve supply of faster growing, resilient timber and non-timber species and inform strategically.
Seed systems - Prioritize training with public seed sector actors to ensure high-quality stock.
Seed systems - Track seedling surveys to identify seasonal, regional patterns and respond.
Value chain development - Aggregate and train farmers, processors, wholesales. Coordinate brand scoping.
Value chain development - Support innovation platforms for landscape partnerships of coffee stakeholders.
Value chain development - Champion SMEs in scalability programs and business development issues.
Explore carbon financing and ROAM opportunities including hedgerow and mosaic in remaining districts.

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[1] In Rwanda, results suggested a financial impact of $27.84 per adopter with a cost of $2.30 using a discount rate of 7.5% over 10 years (2021).

Implement theory of changes with emerging value chains to strengthen landscape partnerships.

Part C: 12-month work plan and risk management

	Q1	Q2	Q3	Q4
Goal 1 Increase farmer profitability Goa*l 2 Improve farmer resilience* Goal 3 Climate mitigation Goal 4 Reduce donor dependency *Activity 1 Boundary trees - NTFP* *Activity 2 Vegetative contours - EROSION* *Activity 3 Intercropping - SOIL* *Activity 4 Upmarket shade coffee produce*	Revise seed orders and nursery management timetables and targets.	Assign COMs role to coordinate material on coffee & nursery ops.	Assign COMs role to coffee value chain	
	Prepare annual and overall work plans for FLR with CD.	Identify champion SMEs or actors to organize around and channel investment through.	Disseminate value-added success stories	Submit monitoring plan with agreed metrics and deploy mobile surveys.
	GIS analysis of canopy, land-use, tenure, hydroshed & demography in pilot districts	Conduct pilot coffee trials with local experts & OAF MEL team.	Establish forest plots or launch single-adopter platforms.	
	Define organizational targets and FLR KPIs for forest dashboard	Engage finance team to checklist budgets & expense bottlenecks		Assess regional forest monitoring and cost estimates for plot-level sampling. Identify risk mitigation.
	Review MEL of incremental trees across sites to build monitoring and evaluation plan/platform.	Share forest monitoring plan: sampling, partners, cost options. Engage geodata community.	Engage with PEFC & FSC. Scan public interest/eligible	Generate Ex-Ante GHG emissions model using three-case scenario of REDD+ initiatives. Coordinate material between

Following best practices,[2] a robust environmental and social risk management strategy will aim to respect human rights through procedures for free, prior and informed consent; indigenous peoples, civil society engagement, gender, and stakeholder response mechanisms or grievance. This will incorporate a comprehensive risk assessment to identify potential risks and impacts on local ecosystems and social groups. Business risk will be addressed through value chain coordination and post-processing training. Initiatives will provide support to clarify tenure and property rights if requested. Across groups, landscape partnerships will be enabled in order to foster areas of better risk potential.

Project pathways will be mapped and discussed with multiple stakeholder groups to generate robust and aware theory of change, providing further opportunity for safeguard measures. In the endeavor to strengthen the capacity and credibility of our FLR innovation platform, we will actively seek the involvement of accredited certification bodies wherever applicable. These certification bodies, recognised for their custody of environmental standards and sustainable practices. Alongside, we will engage with public partners and stakeholders through a series of specialized workshops dedicated to our project initiatives. Primary objective of these workshops is to foster a resilient network focused on carbon finance and the development REDD+ jurisdictional projects. By facilitating interactions with key public partners, we will aim to build strategic alliances and harness collective expertise to advance our landscape program.

It is essential to emphasize the significance of grievance mechanisms within our scalability strategies. Additional costs may be incurred now. Despite these early costs incurred at this scale, there are improved opportunities resulting in future benchmarking and integration with formal accreditation.

[2] https://www.worldbank.org/en/projects-operations/environmental-and-social-framework