Dealin.Green – Paulownia in Continental Europe

Master - Program Overview Document (M-POD)

Project ID: *PROBA.2025.0002*

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About Dealin.Green

Dealin.Green serves as the Program Developer for the Short Rotation Paulownia Cultivation carbon credit program across the European Union. As the central coordinating entity, Dealin.Green has established a comprehensive framework for implementing sustainable Paulownia tree cultivation projects that efficiently sequester CO_2 while providing economic benefits to local communities.

Dealin.Green's primary mission is to drive climate change mitigation through efficient carbon sequestration by incentivizing the growth of fast-growing Paulownia trees on previously cultivated cropland, grass/pastureland, and fallow land throughout eligible EU member states but

not limited to. The program aims to ensure that sequestered carbon remains stored for multiple decades (minimum 40 years) by directing harvested wood to the timber and construction industry.

Organization details:

Registered name	Dealin.Green B.V.
Address	De Drieslag 25, 8251 JZ Dronten
Country of registration	The Netherlands
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Table of Content

1. Program description

1.1. Program Objective(s)

The primary goal of the program is to sequester CO2 efficiently by incentivizing the growth of Paulownia trees on various types of land: cultivated land, grass/pastureland and fallow land, and keep the sequestered CO2 stored for multiple decades. The program aims to store 14.4 million tons of CO2[1] over its 40-year duration. This is achieved by planting fast-growing Paulownia trees — which are known for their high biomass production and follow a multiple harvest cycles approach.

The harvested wood and fibers from these plantations is intended to supply the timber and construction industry, where it will be used in the construction of buildings. This ensures that the sequestered carbon remains stored in harvested wood products for multiple decades, with a minimum duration of 40 years.

Additionally, the program can integrate Paulownia trees into agroforestry, maintaining the current agricultural use while adding carbon sequestration benefits. This dual-purpose approach maximizes the utility of the land and contributes to reducing the need for land use change.
In terms of scale, the program has specific expansion goals: establishing 10.000 hectares of Paulownia plantations by 2030. These efforts are expected to result in over 48,4 million m^3[2] of timber being grown over 40 years.

The program's environmental and social benefits include creating economic opportunities for local farmers and supporting the local construction sector through the sale and use of Paulownia wood.

Metrics to assess the program's success include measuring the amount of CO2 sequestered in Above-Ground Biomass (AGB), tracking the annual expansion of Paulownia plantations, and monitoring the volume of timber produced for the construction industry.

1.2. Cultivation types

The program includes 2 types of cultivation: traditional and mid-harvest.

Traditional cultivation

[1] based on the following assumptions: total surface planted by 2030: 10.000ha, with an average tree density of 660 trees/ha, a CO2e sequestration rate of 36tCO2e/ha/year, and a program duration of 40 years. Calculations are based on the Short Rotation Paulownia Tree Cultivation Tool which are part of the Proba Methodology.

[2] based on the following assumptions: total surface planted by 2030: 10.000ha, with an average tree density of 660 trees/ha, an average above ground biomass (m^3) grown per hectare of 138,30, and a program duration of 40 years. Calculations are based on the Short Rotation Paulownia Tree Cultivation Tool which are part of the Proba Methodology.

This type of cultivation is 100% of the trees harvested in years 7-12. No mid-harvest is taking place. The trees regrows after harvesting 4 to 5 times over a period of at least 30 years on the same plot. Replanting is not necessary.

Mid-harvest cultivation

This cultivation type contains a mid-harvest between year 4-6 (depending on growing seasons). 50% will be harvested, which leaves more space and less competition for the remaining 50%. This results in a thicker trunk and higher quality timber for the remaining 50%, which will be harvested 4-5 years later. This means every 4-6 years 50% is harvested when the trees are mature. The tree regrows after harvesting, and this for at least 30 years on the same plot. Replanting is not necessary.

1.3. Planned program scope extension

Beyond the interventions described in this document, Dealin.Green is planning the following development for the program in the coming years:

- Include a new carbon pool: Soil Organic Carbon (SOC). This carbon pool may be added to some or all plantations under L-PODs in the future, after meticulous baseline assessments and robust MRV. For estimating and monitoring the yield of this carbon pool, Dealin.Green will use a relevant methodology approved by Proba or start a new project/program, whichever is the best and most logical choice..

For adding SOC, Dealin.Green will follow the rules and process described in the Proba Standard, section 4.3[3]

1.4. Inclusion criteria

To be eligible for inclusion in the Master program, local projects must meet the following criteria.

Geographic Criteria:

- Located within Continental Europe, and can include non-EU countries approved by Proba as per Proba methodology PM.0001 Short rotation paulownia tree cultivation v1.1.

[3] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://proba.earth/hubfs/Product/The_Proba_standard.pdf

- Not situated on protected areas (e.g., Natura 2000, National Parks)
- Not on lands of significant historical or societal value

Land Use Criteria:

- Eligible types of land are cropland, pasture/grassland, or fallow land
- No deforestation within the last 10 years prior to establishing the plantation[4]
- Land used for Paulownia plantations must not occur on land where rare plant / tree species grow, such as:
    - Endangered plants, wild or cultivated (e.g. very rare breeds, heirloom species)
    - Crops that are culturally or locally significant to the local tradition or culinary heritage Technical Criteria:
- Commitment to one of the eligible cultivation types (traditional or mid-harvest, or a combination)
- Adherence to the planting, maintenance, and harvesting protocols specified in the methodology. This is part of the contract between DG and LPD.
- Commitment to use harvested wood for long-term storage applications (construction, furniture, etc.). This is part of the contract between DG and LPD.
- Not intended for any kind of combustion, e.g. biofuels or wood pellets for biomass to energy. This is part of the contract between DG and LPD.

Legal and Administrative Criteria:

- Clear land tenure and ownership rights
- Compliance with all relevant EU and national regulations
- Willingness to enter into a long-term agreement (until harvest with a maximum of 12 years) for carbon rights
- Commitment to monitoring and reporting requirements as stated in the contract with Local Project Developer[5]

Soil and Climate Suitability[6]:

[4] Data is extracted from boerenbunder

[5] Annex 1: Contract example with Local Project Developer

[6] Annex 2: Soil and Climate Suitability

- Soil conditions suitable for Paulownia growth
- Climate conditions within the tolerance range: for Paulownia species
- Adequate water availability or irrigation capabilities

A complete list of soil and climate guidelines are explained in Annex 2.

Local Project Developers must provide documentation demonstrating compliance with these criteria as part of their application process. The Program Developer will evaluate each application to ensure alignment with program objectives and methodology requirements.

1.5. Program timelines

- The program started on June 1st, 2024, with a total of 0 hectares.
- The program is intended to last for a period of at least 40 years, and end by December 31st, 2064. The program will include at least 5 harvests between 1 to 12 years per growth cycle.
- Monitoring of tree growth and risk mitigation measures will be done at least once per year. This data is stored on the Dealin.Green Insights Platform.
- Verification of the project Yield and Monitoring will happen once a year and will be performed by an independent 3rd party VVB.
- Upon sales of Paulownia wood to timber product manufacturers, a contract will be signed, guaranteeing the destination of the wood into products with a long lifecycle (40+ years). This will be added to the audit scope and verified by the VVB in the years subsequent to tree harvest, This provides certainty of permanence for all credits issued during the growth cycle of the trees . See more in Section 9.3. “Permanence” of this document.

1.6. Crediting Period

The program Crediting Period is the period for which net GHG emissions reductions or removals will be verified and result in Carbon Credits being issued by Proba. The Crediting Period may be equivalent to the program period. It can be renewed under the conditions described in the Proba Standard[7].

[7] https://proba.earth/document-library

As per the Proba methodology used, the program crediting period is chosen to cover the longest possible full harvest cycle. The program crediting period is set to 12 years.

The initial crediting period will run from June 1st, 2024, until May 31st, 2036.

Dealin.Green is aware of the fact that a local project starting in e.g. 2030 will have their harvest outside of the initial crediting period. However, the 40 years planned project duration ensures this local project will be covered by the next crediting period.

At renewal events, the Project Developer will undergo a new Validation round where the Baseline will be re-assessed against the current context and ensure that the project complies with the latest version of the Proba Standard and relevant Methodology(ies).

Pre-credits

The project will make use of pre-credits. Pre-credits do not qualify as Proba Credits and as such cannot be used for claiming GHG benefits. Pre-credits can be seen as an off-take agreement between the project developer and future buyers of carbon credits. This allows the program developer and participants to invest in the project and reduce financial risk. A limit of 60% of the expected Yield to be achieved will be set as a safeguard margin until the actual GHG reductions or removals have taken place and been verified, to protect against potential variations. This percentage will be evaluated based on the actual yield and may be updated during the crediting period.

Retroactive crediting

The approach to retroactive crediting under this program is currently under review and has not yet been finalized. While the Proba Standard allows for retroactive crediting under specific conditions, the exact retroactive crediting period, eligibility criteria, and procedural safeguards applicable to this program will be determined at a later stage, following:

- **feedback received during the public consultation**
- **further technical assessment**
- **approval through the applicable program governance and Proba review processes.**

As such, no retroactive crediting period is confirmed or guaranteed at this stage, and no credits will be issued retroactively until the final rules have been formally adopted and publicly disclosed.

Retroactive crediting is permitted under the Proba Standard v1.3 (Section 6.2.1) for carbon removal activities that are started up to two years prior to the date of submitting the POD for Proba eligibility. This rule is designed to ensure that retroactive credits are only issued to projects that were initiated with carbon finance in mind and that have complied with Proba's methodological and monitoring requirements from the beginning of the claimed period.

Under the Dealin.Green model:

- The Master Program Overview Document (M-POD) defines the program framework and is submitted to Proba for eligibility.
- Individual Local Projects (L-PODs) are added on a rolling basis. Since the baseline calculations are not included in the M-POD due to the fact that they are country specific, the baselines require 3rd-party validation by a VVB.
- New plantations added to validated L-PODs on a rolling basis do not undergo separate validation, but are instead reviewed during their first verification event.

Using the M-POD submission date as the reference point for retroactive crediting would enable Local Projects (added to the program years later) to claim credits for activities initiated well before their formal inclusion. This would undermine the credibility of issued credits and create inconsistencies with the principle of additionality. To mitigate this, and in alignment with the intent of the Proba Standard, Dealin.Green applies a more conservative approach.

Dealin.Green Retroactive Crediting Procedure

Under the Dealin.Green program, retroactive crediting may be granted to Local Projects that were started occurred up to two years prior to the date of submitting the monitoring report to the Proba Registry. This date serves as the eligibility anchor for retroactive crediting. Activities that occurred more than two years before this date are not eligible for credit issuance, even if fully documented.

To qualify for retroactive crediting, the following conditions must be met:

1. The project must have been initiated with **clear carbon finance intent**, demonstrated through engagement with other carbon programs or carbon finance reference in e-mails, presentations, business plans or proposals;

2. The project must have maintained **verifiable monitoring data** and demonstrate full compliance with the Proba methodology throughout the claimed retroactive period.

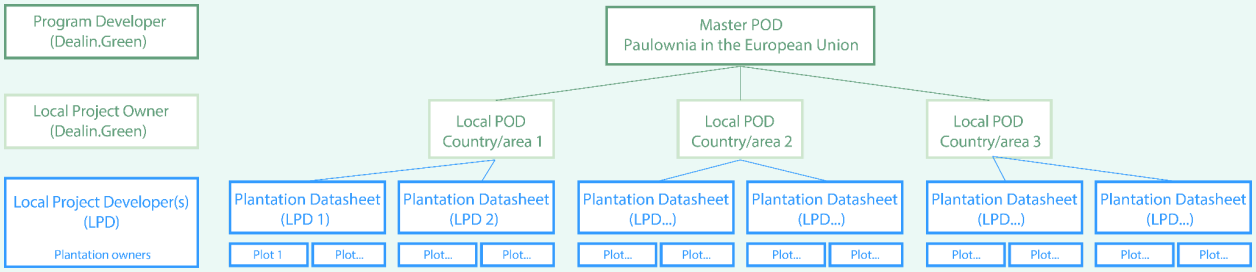
Retroactive crediting will be verified by the VVB during the first verification event for each L-POD. The quantification will be based on the entire growing season, in line with the calculation model from the Proba methodology. However, only those years that fall within the eligible retroactive window will be processed for credit issuance.

For clarity, examples of eligible retroactive crediting scenarios are provided in Annex 6.

1.7. Program governance

Program structure

The Short Rotation Paulownia Cultivation program operates as an umbrella framework for multiple local projects across the European Union plus additional countries (see Geographical Boundaries). The program structure is designed to ensure consistent application of the methodology while allowing for adaptation to local conditions.



Hierarchical Structure:

1. Program Level (Master POD): Establishes the overall framework, requirements, and methodologies.

- Responsible: Program Developer
- Central location/HQ: Dealin.Green office.

2. Local Project Level (L-POD): Implements the program at specific locations with site-specific details.

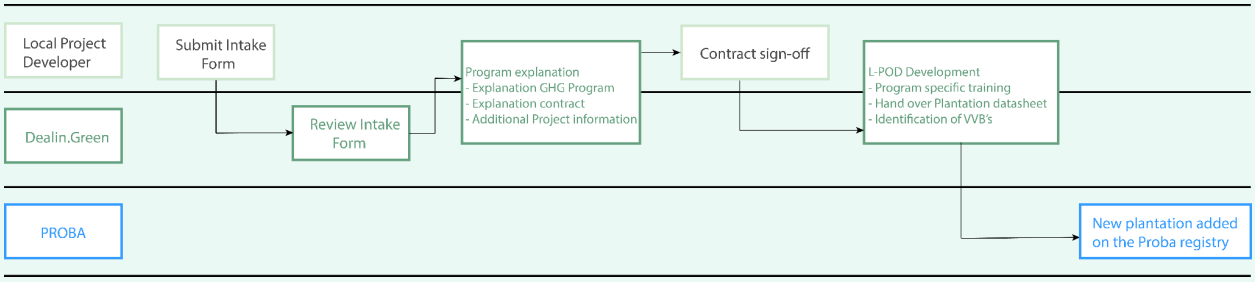
- Responsible L-POD: Local Project Owner (LPO)
- Central location/HQ: Dealin.Green office.
- Responsible Local Project implementation: Local Project Developer (LPD)
- HQ: varies per L-POD, information mentioned in the L-POD documents

3. Plantation Datasheet: Provide necessary information and data as requested by the L-POD templates. Responsible: Local Project Developer as per L-POD.

Dealin.Green is responsible for M-and L-POD(s), and is the Program Developer and Local Project Owner. The Local Project Developer is responsible for the plantation datasheets, project implementation, plots managements, and is part of a L-POD.

Process to join the Program:

Plantation owners seeking integration to the Dealin.Green Program undergo a six steps process:



1. Submit intake form: initial desk assessment, where the eligibility criteria are vetted by Dealin.Green. The plantation owner delivers evidence of the existence of the plantation, GPS location, land use rights, cultivation logs and Paulownia Cultivation skills.
2. Review Intake form by Dealin.Green
3. Explanation GHG Program, explanation contract and additional project information
4. Contract sign-off by LPD and Dealin.Green
5. L-POD development: Program specific training and onboarding, hand-over of L-POD template, contracting of the VVB. Unless otherwise agreed upon, Dealin.Green will develop the L-POD. LPD will be required to fill in, for each plot, a plot specific datasheet that will be added to the L-POD and Validation by chosen VVB. LPDs are also responsible for delivering all documentation and evidence for the plots joining the program. Where needed, LPDs will also be asked to support Dealin.Green with locally relevant information.
6. New plantation(s) are added as Dealin.Green program assets on the Proba registry.

Program stakeholders (companies, organizations, individuals)

Being a program, new participants can join in the course of the years. Dealin.Green will share an up-to-date list of program members on the Proba Registry at least once per year. As per section 4.3 from the Proba Standard, new participants will follow the process of project scope extension" and inclusion to the program will be validated during the next Verification Event by a VVB.

Description	Main Contact person (name, function)	Contact details (phone number, email)
Program Developer (Dealin.Green)	Matthijs van Staalduinen (Co-Founder)	De Drieslag 25 8251 JZ Dronten

	Arjen Crul (Project Manager) Guillaume de la Ruée (GHG Project Senior Consultant)	carboncredits@dealin.green +3185 107 2190
Local Project Developer or agent	Documented in specific L-POD.	
Landowners/farmers	Dealin.Green Insights Platform / Proba Platform and registry	
Verification Body	For this M-POD: Veritas For the L-POD: documented in specific L-POD	
Wood processors	Documented in specific L-POD	
Certifier	Documented in specific L-POD	

Roles and responsibilities

Program Developer (PD):

- Develop and maintain the program's compliance to methodology (PM.0001_Methodology_Short_rotation_Paulownia_Tree_Cultivation_v1.0) and standards (Proba Standard, v1.3, July 2025)
- Develop L-POD document for each relevant project locations
- Evaluate applications from potential Local Project Developers
- Provide technical guidance and support to LPD and program participants
- Oversee the verification and issuance of carbon credits
- Ensure program compliance with relevant regulations and standards
- Coordinate with verification bodies (VVBs) and other external partners
- Manage data input to the program registry and documentation:
    - collect monitoring data from local stakeholders
    - calculate impact in DG Insights platform
    - import assets (plots), monitoring report, and GHG yields into Proba platform
- Selling of carbon credits on behalf of Local Project Developers (LPDs).
- Retaining a defined commission from credit sales as per contract terms.

- Ensuring timely and accurate financial transfers to stakeholders (e.g., LPDs).
- Providing transparency through contracts outlining commission percentages and services covered.
- Covering costs related to platform maintenance, marketing, verification coordination, and program management.

Local Project Developer (LPD):

- Identify suitable land and engage with landowners/farmers
- Implement projects according to program requirements M-POD and L-POD
- Coordinate local activities and stakeholder engagement
- Collect and report monitoring data
- Ensure compliance with local regulations and permits
- Facilitate verification activities
- Manage relationships with local partners and service providers.
- Agree with Program Developer Dealin.Green how the sale of wood and fibers is handled. As this can vary per region, this item will be further specified in the L-POD documents.

Agent for the Local Project Coordinator(<150 hectares):

- Act on behalf of multiple landowners or plantation holders
- Aggregate smaller plantations into one combined project
- Develop L-PODs and implement projects according to program requirements
- Coordinate local activities and stakeholder engagement
- Collect and report monitoring data
- Ensure compliance with local regulations and permits
- Facilitate verification activities
- Manage relationships with participating landowners and service providers

The Agent assumes the responsibilities of the Local Project Developer for projects involving multiple small landowners or plantations.

Landowners/farmers:

- Provide land for Paulownia cultivation
- Implement cultivation practices according to technical guidelines

- Maintain plantations and monitor tree health
- Report issues or concerns to Local Project Developers
- Participate in monitoring and verification activities
- Adhere to long-term commitments for carbon storage.
- The Local Project Developer can also be the landowner/farmer, depending on the Local Project.

Validation and Verification Bodies:

- Conduct validation of the M-POD
- Conduct independent verification of carbon sequestration claims
- Assess compliance with methodologies chosen by the program and the Proba standard v1.3.
- Verify monitoring data and calculations
- Provide verification reports and statements
- Maintain impartiality and adhere to verification standards.

Wood Processors:

- Process harvested Paulownia wood into long-lasting products
- Document wood volumes per output destination and track volume of waste and saw dust
- Ensure traceability of wood products for 100% of the purchased wood volume
- Adhere to agreements regarding minimum storage periods
- Participate in post-harvest verification activities

Credit Certifier:

Proba World B.V. is a carbon crediting program. Proba's role is to provide a standard and specific methodologies for verifying and issuing Carbon Credits that the Project Developer will be entitled to and will be able to transfer. The Management Board of Proba is responsible for the Carbon Crediting program.

Role	Organization	Activity	Contact person	Relevant Qualification
Administrative				

Program Developer	Dealin.Green	Selection of land areas	Matthijs van Staalduinen	Paulownia expert
	Growing Partners	Leading the project on the ground, organizing project activities	LPD (Local Project Developer)	Paulownia expert
	Dealin.Green	Support Growing partners in documentation input	Matthijs van Staalduinen	Paulownia expert
	Qassurance	Quality system management	Michel Goldbach	Experience in consulting and implementing several ISO systems
	Veritas	POD Validation		Experience in auditing GHG schemes and consultancy with GHG inventories
	Veritas	Yield Verification		Experience in GHG accounting for various voluntary carbon market schemes.
Technical				
	Growing Partners	Field data collection at plot level	LPD	Paulownia Expert
	Proba	Onboarding on the Proba Platform, including support questions, and internal /public review process	Frank de Zwart	Product Owner Technical Lead
	GD consultancy	GHG project consultancy	Guillaume de la Ruée	GHG project Senior Consultant
	Naturevest	GHG project consultancy	Arjen Crul	GHG project expert

Supporting				
	Qassurance	Support in quality systems	Michel Goldbach	
Supplier of young plants	Depending on L-POD	Delivering of plants	LPD	

Communication Protocols

All participating projects operate within a structured Master POD and Local POD framework to ensure consistency, transparency, and efficiency in project execution and carbon credit issuance. The Master POD, managed by the Program Developer Dealin.Green, oversees multiple Local POD's, each managed by a Local Project Developer (LPD).

Standardized communication channels and protocols are maintained to ensure timely data exchange, alignment on methodologies, and adherence to MRV (Monitoring, Reporting, and Verification) standards.

Dealin.Green coordinates directly with the assigned VVB for both Validation and Verification audits. Communication with the VVB is divided in three steps during the process: pre-audit, audit and post-audit.

Proba provides the platform eligibility checks, methodology approvals, credit issuance and public registry access. Dealin.Green maintains regular communication with Proba to submit new program or L-POD eligibility requests, methodology scope extensions, upload data for credit issuance and receive guidance on updates to the Proba Standard and Methodologies. Within both parties a designated contact person is allocated.

Channel	Purpose	Frequency
Dealin.Green Insights Platform	Data management	Weekly
Proba Register/Blockchain	Transparency of issued credits	24/7 visible

Microsoft Sharepoint	Task tracking, document sharing, milestone update	Continuous (daily/weekly)
Email	Formal reporting, documentation submission, regulatory updates	When needed
Video Conferencing	Check-ins, audit preparations, information exchange	Weekly or when necessary, with at least one call per two months in the first 2 years of cultivation .
In person meetings	Better communication and relationship building, increased focus and engagement, efficient collaboration.	When needed (at least once at the onboarding phase of the program)

1.8. Credit income distribution

Revenues from the sale of carbon credits via the Dealin.Green Trading Platform are shared between Dealin.Green and LPDs based on contractual terms. A pre-defined percentage of the sales revenue is automatically retained by Dealin.Green as commission. The retained commission covers costs associated with platform maintenance, marketing, third-party verification coordination, and overall program management. The remainder of the revenue is transferred to the LPDs, who allocates the corresponding share to the landowners as defined in their agreement. Each landowner receives a proportional share of the credit income. Contracts and financial transactions may be audited during verification events by VVBs.

2. Program Boundaries

2.1. GHG Mitigation type(s)

Carbon Removal through photosynthesis and long-term storage

The primary GHG mitigation activity under this program is carbon removal from the atmosphere through photosynthesis. Paulownia trees absorb atmospheric CO_2 during their growth and store

the carbon in their biomass (both above-ground and below-ground). As stated in the Proba methodology PM.0001. Methodology Short Rotation Paulownia Tree Cultivation v 1.0:

“Recognized as one of the fastest-growing tree species globally, Paulownia's capacity for quick growth and high biomass yield make it ideal for short-rotation forestry (Yadav et al., 2013)

The program focuses on sequestering carbon and ensuring its long-term storage in harvested wood products used primarily in the construction and furniture industries, contributing to climate change mitigation. As stated in the abovementioned Proba Methodology:

“Paulownia exhibits traits such as resistance to rot, dimensional stability, and a high ignition point, enhancing its timber's market value (Jakubowski, 2022). Its versatility and the increasing demand for wood and wood-based materials position Paulownia as a vital resource for sustainable forestry and renewable energy sources. Some examples of Paulownia wood products are veneers, blockboards, engineered wood, plywood, furniture, kitchen items, and instruments (Jakubowski, 2022). Lastly, Paulownia's unique ability to regenerate through sprouting is a key component of this process. After each harvest, new shoots emerge from the stumps, utilizing the established root system to rapidly grow, thereby enabling continuous carbon absorption without the need for replanting. This cycle of growth, harvest, and regeneration allows for ongoing carbon sequestration, efficiently reducing atmospheric CO2 levels.”

As the soil in Plantation remains undisturbed for a long period of time, carbon is also sequestered in the form of SOC (Soil Organic Carbon), which may be added to the scope of the program in the future, but is currently not part of the intervention.

2.2. GHG Sources, Sinks, and Reservoirs

GHG Sources	**GHG type**	**CO_2e emissions/unit**	**Total CO_2e emissions project/year**	**In Baseline Scope Y/N**	**In project scope Y/N**
E.g. electricity use	CO2	gCO_2/kWh	Total amount: kWh x yy = total CO_2 from electricity used	Y	Y

Mowing	CO2	gCO_2/kWh gCO_2/ liter	x energy consumption/ hour x hours of use	Y	Y
Drainage/Tillage	CO2	gCO_2/kWh	x energy consumption/ hour x hours of use	Y	Y
Transport	CO2	gCO_2/ liter/km	x #km	Y	Y
Planting/harvest machinery	CO2	gCO_2/kWh gCO_2/ liter	x energy consumption/ hour x hours of use	Y	Y
Irrigation machinery	CO2	gCO_2/kWh gCO_2/ liter	x energy consumption/ hour x hours of use	Y	Y
Diesel use	CO2	gCO_2/liter/km	x #km	Y	Y
Fertilizer use	CO2, N2O	$kgCO_2$/tonne kgN2O/ha	x # ha	Y	Y

GHG Sinks	**GHG type**	**CO_2e emissions/unit**	**Total CO_2e emissions project/year**	**In Baseline Scope Y/N**	**In project scope Y/N**
AGB Paulownia wood biomass	CO2	Tonne CO2		Y	Y
BGB Paulownia biomass (roots)	CO2	tCO2/ha/year		N	Y
SOC	C	tCO2e/ha/year		N	N

GHG Reservoirs	GHG type	CO2e emissions/unit	Total CO2e emissions project/year	In Baseline Scope Y/N	In project scope Y/N
Soil	CO2	tCO2/ha/year	n.a.	N	N
Ground biomass	CO2	tCO2/ha/year	n.a.	N	N

Carbon Pools (Sinks/Reservoirs) in Scope

- Above Ground Biomass (AGB): Includes stem, branches, bark, and leaves. This is the primary carbon pool measured for crediting.
- Below Ground Biomass: root system of the tree, about 15% of the AGB. This pool is highly linked to continuity of land use for Paulownia farming and land ownership. Exiting the program, selling off the land, changing to arable crops could mean that the root system is dug out prematurely compared to the expected plantation lifespan of 40 years. As such, the duration of the storage of carbon in the root system is less certain than that of the storage in the AGB.
    - To prevent issuing credits that may lose their value due to early root system disturbance or removal, the BGB carbon pool is not automatically added to the yields of the program. To minimize the risk of over-crediting and ensure the environmental integrity of issued credits, the decision to include BGB credits is made solely by Dealin.Green and not by the Local Project Developer (LPD).
    - Dealin.Green applies an internal eligibility framework, which includes organizational criteria such as the scale, the type of plantation ownership (centralized vs. scattered), the supply chain setup (vertical vs. horizontal), the governance capacity, and track record of the plantation, to determine whether BGB can be included in a given Local Project. Only projects that demonstrate sufficient robustness and long-term land-use control may be considered for BGB inclusion.

To further ensure environmental credibility for the BGB pool, the soil suitability must be demonstrated at the plot level. This includes soil depth greater than 50 cm and the absence of restrictive rock layers, waterlogging, salinity, or contamination that could inhibit root development. These parameters must be substantiated in the L-POD using soil data obtained during pre-scan analysis.

Carbon Pools Excluded:

- Litter and Dead Wood: these pools are considered negligible or too variable for reliable accounting within the short rotation cycle and are excluded.
- Non-tree Biomass: low rise, non-tree biomass (grasses, herbs) is excluded.
- At program start, SOC is excluded. As mentioned in section 1.3., this pool may be added to the program in the future.

2.3. Geographical boundaries

Main Project Address

The program's headquarters is the Dealin.Green's office: De Drieslag 25, 8251 JZ, Dronten, The Netherlands.

Geographical scope

L-POD Requirements

Each Local Project Developer must clearly define the specific geographical boundaries of their project within the L-POD. This includes:

- Precise location information (address, administrative region)
- Geospatial data (GPS coordinates, polygon shapefiles) defining the exact plot boundaries
- Detailed maps illustrating the project area
- Information on land tenure and ownership

This M-POD provides the overarching framework, while L-POD's will contain the detailed, verifiable geographical information for each participating project site.

Types of land eligible:

The main suitable types of land are but not limited to:

- Abandoned farmland: Often already has suitable soil structures (e.g., loam, sandy loam) and may only need minor pH or nutrient adjustments.
- Used Agricultural Fields: These lands are typically managed and fertilized, so pH and particle fraction can often be aligned with Paulownia's needs (pH 5.5–8, preferably 6–7.5; loamy to sandy loam texture).
- Fallow Land: Temporarily unused but still fertile, fallow lands often retain beneficial properties and structure ideal for planting Paulownia.
- Unused Low-Value Land (with adjustments): If the particle size fraction and pH can be adjusted to meet Paulownia requirements, these lands are also acceptable.
- Temperature: minimum -22°C and maximum 45°C
- Groundwater level: ground water should be at least 1m deep from the soil surface
- Project sites must demonstrate soil depth >50 cm, absence of restrictive rock layers, and absence of waterlogging, salinity, or contamination that could inhibit root biomass development (soil data must be included in the L-POD

For soils with low micronutrient availability or extreme pH (<5.5 or >8.5), improvements like lime application or special fertilizers are recommended.

Depending on the climate and field conditions, a water source, drainage, fertilizer, field protection e.g. must be available to achieve the maximum growth potential.

The land on which the plantations are located is owned by the growing partners. Upon reviewing farmer applications to join the program, Dealin.Green evaluates each field.

The following guidelines are used to detect if the land is suitable for the program (exceptions on these parameters may affect the growth results).

These parameters are checked during the pre-scan and analysis, which is at the individual grower level available in the Dealin.Green Insights platform. Through soil sampling, precise measurements for the above values are known. Nutrition recommendations for the trees are then based on these soil samples.

Country Eligibility Criteria (all must be met)

This program is designed in accordance with PM.0001 – Short Rotation Paulownia Tree Cultivation v1.1, which defines its applicability to EU Member States and other approvedEuropeancountries.

2.4. Operational Boundaries

This section defines which activities are included and excluded from the scope of the program, in alignment with the methodology and Proba eligibility requirements.

Activities in scope

The following activities are permitted under the program:

- **Site Assessment:** Evaluating land suitability, baseline conditions, and regulatory compliance.
- **Site Preparation:** Activities necessary to prepare the land for planting (e.g., plowing, minor clearing), excluding activities that constitute deforestation.
- **Planting:** Sourcing and planting Paulownia according to specified densities and cultivation type.
- **Cultivation and Maintenance:** Including irrigation (if necessary), fertilization (following best practices), weed and pest control, and pruning.
- **Monitoring:** Regular measurement of tree growth (DBH, height), health assessment, and data recording.
- **Harvesting:** Cutting trees at the end of the rotation cycle (or during mid-harvest) using appropriate machinery.
- **Transportation:** Transport of seedlings, personnel, and harvested timber to processing facilities or end-users committed to long-term wood product use.
- **Post-Harvest Management:** Ensuring harvested wood is directed towards eligible long-term storage applications (e.g., construction timber, furniture).

Activities not in scope

- **Land Use Change involving Deforestation:** Conversion of forest land to Paulownia plantations.
- **Cultivation on Recently Deforested Land:** As defined by the methodology.
- **Use of Harvested Biomass for Bioenergy:** Production of biofuels or wood pellets for burning.
- **Processing of Wood into Short-Lived Products:** E.g., paper, packaging, or other products not meeting the 40-year permanence requirement.
- **Material Substitution Effects:** Claiming credits based on Paulownia wood replacing more emission-intensive materials.

Local Project Developers must detail their specific operational plans within the L-POD, ensuring all activities align with these boundaries and the PM.0001 Methodology.

Project Emissions considered

Present an overview of the various GHG emitting activities attributed to the project, the GHGs involved, and the energy intensity. Include actual units and their conversion into tCO_2e. Examples: machinery, transportation, electricity use, fertilizer.

Dealin.Green has identified the following categories of project emissions:

- Machinery (tractors, lawnmowers, diggers, wood cutting equipment, irrigation equipment, wood processing, drying rooms)
- Transportation: transport of saplings and cut wood, home-work trajects from plantation employees, any other transport linked to the plantation operation
- Fertilizer use

Based on the GHG emissions sources described in Section 3, Dealin.Green will enter all considered emissions in the L-POD, including estimated quantity and locally relevant Emission Factor for each emission area.

3. Program Additionality

The Additionality Assessment must be included as an appendix or addendum to the POD on the Proba Registry. For transparency, a public-facing version of the assessment must always be made available. If the assessment contains sensitive or confidential information, a separate public-facing version must be prepared in accordance with Section 5.4 of the Proba Standard. While supporting evidence may be withheld in such cases, the core reasoning and key claims must remain accessible in the public version.

Additionality is demonstrated in the document "Proba Additionality Assessment DG", in annex 7 to this M-POD.

This M-POD also establishes the framework for additionality assessment, and the Program Developer provides templates and tools for Local Project Developers (LPDs) to assess and demonstrate the above 3 levels of additionality against their specific local contexts within their L-PODs. These tools include checklists and guidance for gathering location-specific information to validate the general assumptions outlined below.

4. Methodology used

The Program Developer is using the following methodologies and will require all Local Project Developers to adopt them or their project.

PM.0001 Short Rotation Paulownia Tree Cultivation v1.1[8]

The methodology describes the application, scope, and baseline scenarios of the project. The methodology also provides a separate sample calculation tool, containing standard values and formulas to calculate biomass accrual and Yields.

Should Dealin.Green choose to include the SOC carbon pool in the future as mentioned in Section 1.3, Dealin.Green will make use of a still to be determined methodology developed or endorsed by Proba, or another program if deemed better suited.

[8] https://proba.earth/paulownia_methodology?hsLang=en

For the new carbon pools described above, a scope extension will be requested in due time following the process described in the Proba Standard in section 4.3.

4.1. CO2 modeling and Calculation formulas

The calculation formulas are taken from the Proba Methodology “PM.0001 Short Rotation Paulownia Tree Cultivation v1.0”.

Volume (in m3/tree) Estimation ln(volume) = a + b × ln (DBH^2 × Height)

Where:

- **ln** = natural logarithm, in m3
- **DBH** = Diameter at Breast Height in meters (here 1,3 m as per EU standard practice)
- **Height** = Total tree height
- **a and b** = coefficients derived from regression analysis, namely:
    - **a**=-1.0336326.46
    - **b** = 0.62577

Above Ground Biomass (AGB) kg /tree Calculation (Based on Volume and Standard Wood Density):

$$AGB\ (kg) = Volume\ (m3) \times Wood\ Density\ (kg/m3)$$

Where:

- **Volume** = result of calculation 1
- **Wood Density** = taken as a standard value, here 275 kg/m3*

Below Ground Biomass (BGB) Estimation

$$BGB = AGB \times Root\text{-}to\text{-}Shoot\ Ratio$$

Where:

- **AGB** = Above Ground Biomass (m3), the result of calculation 2

- **Root-to-Shoot Ratio** = 15% (0.15), average taken from N. Rana et al and L.B. Magar et al. (2018)

Carbon Content in Biomass (Based on Standard Carbon Fraction)

$$Carbon\ Content = AGB\ (kg) \times Carbon\ Fraction$$

Where:

- **Biomass** = AGB based on calculations 2 and 3
- **Carbon Fraction** = standard value used 47% (0.47)

CO2 Equivalent (CO2e) Calculation per tree:

$$CO2eTree = Carbon\ Content \times CO2\ Conversion\ Factor$$

Where:

- **Carbon Content** = result of calculation 4
- **CO2 Conversion Factor** = 3.6715, the molecular weight ratio of CO2 to C

Total Carbon Sequestration Estimation per hectare (gross Yield):

$$Total\ CO2/ha = CO2eTree\ x\ \#TreeDensHa$$

Where:

- CO2eTree = the result of calculation 5
- TreeDensHa = average amount of trees per ha
- This involves summing the CO2 equivalent across all measured trees and scaling up based on the plantation area or the number of trees per hectare.

4.2. CO2 accrual per year

Data is provided based on the first 9 years of growth. In these first 9 years, the root system is still developing. This means the tree's energy gets divided by above and underground growth. After the

first harvest, a fully-grown root system is in place. The mature root system does not require the same amount of energy as it did in the first 9 years. This means all the tree's energy goes into above-ground growth: the trunk and its branches. Resulting in an expected mature tree in 7-9 years.

See below the “gross yield estimation for the first Harvest cycle, for Traditional Cultivation:

Year	N stem/ha	Vol/tree (m^3)	Vol/ha (m3)	Total CO_2 AGB/ha	Seq rate AGB per year tCO_2/ha	Seq rate CO_2 BGB/ha	Total stock tCO_2/ha	Seq rate - t CO2/ha / year
1	660	0,02	13,2	8,03	7,78	1,167	9,20	8,95
2	660	0,05	33	19,32	10,96	1,644	20,96	12,60
3	657	0,1	65,7	41,32	21,34	3,201	44,52	24,54
4	654	0,17	111,18	70,53	28,33	4,2495	74,78	32,58
5	651	0,33	214,83	133,95	61,52	9,228	143,18	70,75
6	648	0,53	343,44	214,06	77,71	11,6565	225,72	89,37
7	645	0,63	406,35	249,36	34,24	5,136	254,50	39,38
8	805	0,74	595,7	294,1	43,39	6,5085	300,61	49,90
Average per year						5,35	134,18	37,26

For the first harvest cycle of 8 years, an estimated total CO2 stock of 294,10 tonnes CO2/ha is achieved (AGB only), or an average sequestration rate of 35,66 tonnes CO2/ha/y. Peak sequestration reaches 77,71 tonnes CO2/ha/y around year 6.

4.3. Project Net Yield calculations

Average Yield per harvest cycle

$$Total\ amount\ of\ credits\ to\ be\ issued = (avgAGB - BSk - BSc - W\ 7\% - avgPe)$$

$$Total\ amount\ of\ credits\ to\ be\ used = (avgAGB - BSk - BSc - W\ 7\% - avgPe) * 0.9(B)$$

Yield calculation per year

$$Yearly\ Number\ of\ credits\ available\ to\ use = (AGB.y - BSk - BSc - W\ 7\% - Pe.y) * 0.9(B)$$

Where:

- avgAGB = average Above Ground Biomass per year based on an 8-year harvest cycle
- AGB = Above Ground Biomass accrued during the harvest period. To be calculated per growth year
- BSk = Baseline Sinks value for the relevant time period
- BSc = Baseline Sources value for the relevant time period
- W = Waste biomass lost during processing. This value is set to 3%
- avgPe = average Project Emissions per harvest cycle
- Pe = Project Emissions. To be calculated based on the yearly emissions within the concerned year of the harvest cycle (see annex 4)
- B = buffer 10%
- y = Year of data collection used for the specific Verification Event

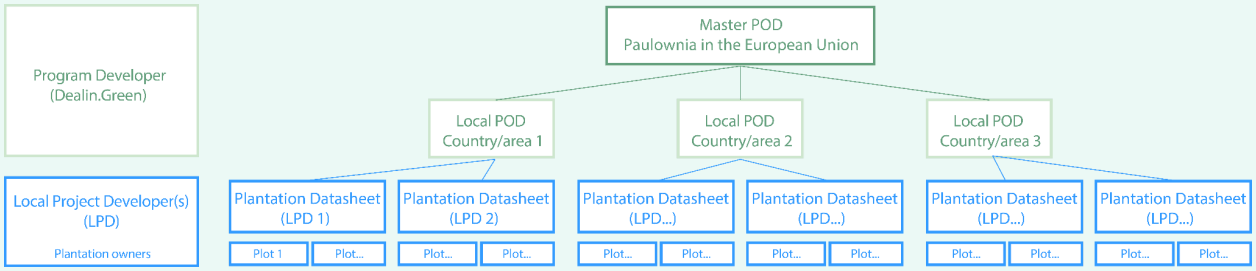
4.4. Data aggregation at program level

Dealin.Green will use these formulas independently for each plantation on the Dealin.Green Insight platform. This will reflect the actual performance of the carbon sequestration of each site,

which can then be summed into the total yield for all plantations under each L-POD. This will be in scope of all verification audits.

The sum of all annual Net Yield from all L-

PODs will amount to the total number of credits issued each year.



The hierarchical formulas with fixed constants W = 0.07 (waste 7%) and B = 0.10 (Buffer pool 10%) applied consistently at every level (plot > LPD > L-POD > M-POD).

Level	Inputs (per year *y*)	Aggregation step	Formula for usable credits
Plot *p*	*AGBp,y*, *BSk,p,y*, *BSc,p,y*, *PEp,y*	(direct field measurement and calculation)	Credp,y use = (0.93 * AGBp,y − BSk,p,y − BSc,p,y − PEp,y) * 0.90
LPD *i,j* (collection of plots in L-PODj)	All plot inputs within LPD	Sum across all plots: AGB *i, j, y* *∑p AGBp,y, BSk,i,j,y* = *∑p BSk,p,y, BSc,i,j,y* =*∑p BSc,p,y,PEi,j,y* = *∑pPEp,y*	Credi,j,y use = (0.93 * AGBi,j,y − BSk,i,j,y − BSc,i,j,y − PEi,j,y)* 0.90
L-POD *j* (country/area)	All LPD inputs within L-POD	Sum across all LPDs: AGBj,y= ∑i AGBi,j,y, BSk,j,y = ∑i BSk,i,j,y, BSc,j,y = ∑i BSc,i,j,y, PEj,y = ∑i PEi,j,y,	Credij,y use = (0.93 * AGBj,y − BSk,j,y − BSc,j,y − PEj,y) * 0.90
M-POD (program)	All L-POD inputs	Sum across all L-PODs: AGByprog = ∑j AGBj,y, BSk,yprog = ∑j BSk,j,y, BSc,y prog = ∑j BSc,j,y, PEyprog = ∑j PEj,y,	Credy, prog use = (0.93 * AGBy prog − BSk,y prog − BSc,y prog − PEy prog) * 0.90

p = plot

i = LPD

j = L-POD

y = Year of measurement

AGBp,y = above ground biomass

BSk,p,y=Baseline sinks (e.g. soil/vegetation that would exist without the project)

BSk,y prog: Baseline Sinks at program level (aggregated) per year

BSc,y prog = Baseline Sources at program level (aggregated) per yeat

BSc,p,y = Baseline sources per plot per year

PEp,y = Project emissions per plot per year

PE y prog = Total project emissions (tCO_2e) from all operational activities across all L-PODs in the program during year y

AGBi,j,y = Sum of AGBp,y across all plots *p* managed by *i* in L-POD *j*

AGBj,y = Sum of AGBi,j,y across all LPD's *i* in L-POD *j*

AGBy prog = Sum of AGBj,y across all L-POD's *j* in the program

Credp,y gross = Gross credits for plot *p* in year *y*, after waste reduction before buffer

Credp,y use = Usable credits for plot *p* in year *y*, after buffer deduction

Credi,j,y use = Usable credits for LPD *i* in L-POD *j*, year *y*

Credy prog use = Usable credits for the entire program (M-POD), year *y*

5. Program GHG Baseline Principles

As baseline values will vary per region and local project under this program, and in order to strive to highest accuracy, the choice has been made to use country level baselines and not a "one size fits all approach". As such actual baseline values are not included in this M-POD, but are required to be calculated and estimated in each L-POD, at the country level.

This implies that the baseline will require 3rd-party verification by a VVB to validate the local baselines. Below are the general rules and requirements for the LPDs.

5.1. Baseline reference time-period

The Program Developer (Dealin.Green) establishes the following principles and procedures for determining the Greenhouse Gas (GHG) Baseline for all projects participating in the Short Rotation Paulownia Cultivation program, in accordance with the PM.0001 Methodology. The baseline represents the hypothetical scenario of what would most likely occur on the project land

in the absence of the Paulownia cultivation activity. The baseline is taking into account the use of the land for the period of 10 years before 2025. Out of those, there are 5 years of satellite imagery available.

Local Project Developers (LPDs) are required to identify and justify the most plausible baseline scenario for each specific project site within their Local Project Overview Document (L-POD) including GIS or historical satellite land data.

5.2. Alternative Scenarios Compared to the Program Implementation

The project developer can propose models or likely scenarios as examples, such as at the country or regional level. The Local Project Developer will be responsible for developing the locally relevant scenarios, and for calculating the locally relevant values, and justifying the chosen scenario. Alternative scenarios can include, but are not limited to:

- Food crops (specify which crops reflecting past cultivated crops or crops grow in the region)
- Fodder crops (specify with crops, reflecting past cultivated crops or crops grow in the region)
- Grazing land/animal farming pastures
- Land abandonment
- Rewilding
- Orchards
- Fallow land
- Construction – industrial, commercial, residential

5.3. Baseline emissions

The methodology describes 3 types of baselines. The one(s) applying to the project are:

- Pastureland
    - With cattle grazing (cows, sheep, horses, goats)
    - No grazing

- Cropland
- Fallow land

Once the baseline scenario is determined, LPDs must quantify the GHG emissions and removals associated with that scenario over the project's crediting period duration. Baseline scenarios and values are documented at country or region level in the L-POD documents.

More detailed information is stored on the Insights Platform. Upon request reports can be made to export the required information.

The baseline emissions values chosen are (average) emissions per hectare per year. The baseline emission values will be converted to CO2 equivalent using the values in the footnotes and calculated per hectare.

The table below summarizes the baseline emissions. Emissions below 3% are not implemented in the calculations and are seen as negligible.

		Baseline Emissions					
GHG sources	GHG type	Pastureland - Emissions in scope YES/NO/NA	Pastureland - Emissions in $kgCO_2e/ha/y$	Cropland (conventional farming)	Cropland: Emissions in $kgCO_2e/kg$ product	Fallow land	Fallow land: Emissions in $kgCO_2e/kg$ product
Plowing activities	CO_2	Not applicable		YES	See L-POD	Not applicable	
Mowing	CO_2	YES	See L-POD	Not applicable		Not applicable	
Livestock	CH4[9]	If grazing, YES,	See L-POD	Not applicable		Not applicable	

[9] GWP value is: 1 tonne of CH4= 28 tonnes CO_2e (https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf)

		otherwise, NO					
Drainage/tillage	CO_2, CH_4, N_2O[10]	YES, only include if changed by project, otherwise N.A.	See L-POD	NO	See L-POD	Not applicable	
Planting crops/trees machinery	CO_2	Not applicable		YES	See L-POD	Not applicable	
Irrigation installation machinery	CO_2	Optional		YES	See L-POD	Not applicable	
Transport of employees	CO_2	Optional, include if employees travel >10 km to reach the plantation	Justification in L-POD	Optional, include if employees travel >10 km to reach the plantation	Justification in L-POD	Not applicable	
Water pump electricity	CO_2	Not applicable		YES	See L-POD	Not applicable	

5.4. Data availability, reliability, and limitations

When available, the program uses the most recent country-specific values that are a better reflection of the emissions for the region where the program is implemented. Official and

[10] GWP value is: 1 tonne of N_2O= 265 tonnes CO_2e (same source as above)

trustworthy sources from national or European instances or universities (e.g. Wageningen) are favored, to increase accuracy and relevance to the project area.

For some data, such as data specific to project emissions and related to the use of many different types of machinery by the growing partners, the principle of conservativeness is applied by leveling all machinery emissions to the highest emission factors. This prevents underestimation of program emissions.

5.5. Information concerning present or future conditions

This section is twofold. At EU level, and at local context level.
At EU-level, Dealin.Green is actively following the development of the Carbon Removal and Carbon Framework (CRCF). This upcoming regulation will define new rules, methodologies, and registries for carbon removal interventions and carbon farming. This is likely to impact Paulownia tree plantations cultivated with the aim of issuing carbon credits.

Dealin.Green seeks to align with the CRCF development and become CRCF compliant or a recognized supplier of CRCF credits.

At the local project level, the Local Project Developer is required to document this information in the relevant L-POD.

6. Expected Yields

6.1. Carbon removal

The GHG project type in this context refers to a carbon sequestration (carbon removal) project that aims to mitigate GHG emissions by using Paulownia trees as a Carbon Sink. Carbon sequestration involves capturing and storing carbon dioxide (CO2) from the atmosphere, thus reducing the concentration of CO2 and other GHGs that contribute to global warming.

During the duration of the program, CO2 will be removed and stored in 3 carbon sinks: AGB, BGB, and SOC (SOC is not in scope for the yield calculation at this stage, see section 2 for more info on program scope extension). Over 40 years, the 10,000 ha Paulownia tree plantations (aiming to be

fully planted by the end of 2030) will absorb an estimated CO2 amount of 14,400,000 tCO2e[11] (AGB only) from the atmosphere during photosynthesis and convert it into biomass or SOC. The carbon is then stored in the tree's trunks, branches, root system and organic matter. As the trees grow, they continue to sequester CO2, acting as a carbon sink and mitigating CO2 emissions.

By establishing and maintaining the Paulownia plantations, the project adds a positive impact on CO2 sequestration, compared to the Baseline Scenario.

The Yield breakdown can be shown as such, using the ratio of each expected carbon yield source:

> *Note: It is important to note that the final estimated impact at the asset (field) level, as reported on the Proba platform, will differ from these figures and will be based on actual field sizes, plantation age and tree density. This section offers insights into the projected scale of the project and it can be used as a practical example to illustrate how the calculations work.*

	Traditional Cultivation - AGB	**Mid-harvest - AGB**
Amount of ha	4000	4000
Gross Yield (tCO_2e/ha/y)	35,66	36,63
Waste 7%	-2,4962	-2,5638
Project emissions (tCO2e/ha/y)	-0.40147	-0.40262
Baseline emissions (tCO2e/ha/y)	0	0
Total #credits per year /ha	32,7623	33,6586
Total #credits per harvest cycle /ha (8 or 3 years)	262,09 (8y)	269,30 (8y)
Total #credits on total #ha (8 or 3 years)	1.048.395 (8y)	1.077.076 (8y)

[11] Based on: 10,000 ha with a tree density of 660 trees/ha, with 5 x 8-years harvest cycles

Buffer 10%	-104.839,5	-107.707,6
Net number of credits available for sale per harvest cycle:	943.555,1	969.368,5
Net number of credits available for sale per harvest cycle	943.555,1	969.368,5
#harvest cycle	5	5
Totals over project duration of 40 years	**4.717.775**	**4.846.842**
Expected total #credits over 10,000ha over 40 years		**10.408.652,66**

BGB options for Yields

See two options in topic: GHG Sources, Sinks, and Reservoirs.

Traditional Cultivation

Each hectare of Paulownia sequesters on average 36[12] tonnes of CO2 (AGB) per hectare/year from the atmosphere. This CO2 is already present and can be classified as a removal.

Mid-Harvest

The calculation model is tailored to this specific cultivation type and is made up of 50% of the accrued AGB at year 5, 50% of the accrued AGB at year 8, and 50% of the accrued AGB at year 3, to account for the regrowth of the trees harvested at year 5.

6.2. Leakage

A possibility exists that the leakage amounts to more than 100%, should the displacement of the farm crop on other land lead to higher emissions than in the land of the Paulownia plantation. In Europe, the production of agricultural products is very much driven by market demand. Farmers

[12] Calculations based on the DG_Short rotation Paulownia Tree_Cultivation_tool, visible on request

are always free to choose which crops or products they want to grow based on the best identified market opportunity, as such crop productions vary year on year in every region. National and regional adjustments in production and demand follow market mechanisms and are balanced by imports and exports, mostly within the EU. At the scale of the program, switching from food crops to Paulownia, or adding Paulownia trees to an existing farming system is very unlikely to significantly change the GHG emissions from displaced crop cultivation within Europe, compared to existing adjustments.

Furthermore, the program contains other measures to ensure the yield remains conservative to ensure the integrity of the issued Proba Credits.

The consequence for the project is that it is not possible to claim avoided emissions from cropland as a carbon pool leading to credit generation.

6.3. Permanence

The Project Developer intends to realize long-term carbon storage. To start with, permanent carbon sequestration will be achieved based on Above Ground Biomass (85% of the total carbon).

Above Ground Biomass

The Above Ground Biomass, or AGB, comprises the tree's stem, branches, and leaves. The leaves are not in the scope of the GHG project. Depending on the area and project, the L-POD must estimate the percentage of AGB that will meet a minimum of 40 years of Storage Duration in products.

The harvested wood will exclusively be sold to parties that produce durable products, such as timber for the construction sector, or bio-based insulation materials. To ensure the long-term carbon storage, the following permitted and prohibited end uses, obligations and verification criteria apply.

Permitted end uses (long lived, >40 years):

- Construction, as timber for beams, CLT panels, and frames
- Construction, as insulation material (for the non-timber biomass, such as sawdust, small branches, cuttings, and production waste)

- Construction, as cladding for buildings.
- The boating industry, where lightweight timber is sought after
- Any product category demonstrating storing carbon for minimum 40 years

Prohibited end uses (short lived, <40 years)

- Combustion products: biomass for energy generation (e.g. pellets, chips, firewood)
- Single-use bioplastics or packaging
- Disposable consumer products (e.g. wooden cutlery, decorative items)
- Wood waste not directed into durable reuse streams

Local Project Developers are obligated to:

- Have contractual commitment, to use the AGB exclusively to permitted end-use sectors.
- Expected end uses must be included in the L-POD
- Contracts with downstream buyers must specify the intended use

A verification audit will be conducted within a maximum of three years to ensure that the wood is used in accordance with the program's permanence requirements. The verification process must include a review of all sales documentation, particularly the contractual agreements between LPD's and their clients. These contracts must specify the type of products being manufactured and their intended use.

This commitment is documented in the L-POD and through the contract between the Program Developer Dealin.Green and the Local Project Developer[13].

The harvested biomass from the fiber production will exclusively be used in long-lasting products, such as:

- Insulation materials (sound and temperature, floors)
- Bio-based concrete and other construction materials (see Annex 3 for more information)

[13] See Annex 1, article 1.10

The minimum Storage duration that the stored carbon in the wood will pertain is 40 years, and likely much higher. [14][15][16] Local Project Developers must incorporate this information into the L-POD, clearly demonstrating the expected lifespan of the wooden structure and the corresponding carbon storage duration. As an example, in the Netherlands, houses have an average minimum lifespan of 80 years, and office buildings 50 years.

To ensure that the wood is indeed used as intended, and not in a product with a short storage period (e.g. wood pellets for biomass power stations, single-use bioplastics), the Program Developer will follow strict requirements and controls. During the Verification event after the wood harvest (which can be up to 3 years after the harvest), the destination of the wood products will be included in the Verification audit. This audit will verify the following:

The sold volume of wood products, and the associated carbon content (tCO2e)

- The reconciliation of the wood volumes (converted to CO2e content) with the issued Proba Credits related to the vintages of the relevant harvest cycle
- The signed contractual agreements between the Local Project Developer and their clients, stating the volumes of wood and fiber.

Below Ground Biomass

In order to mitigate the non-permanence risks inherent to the BGB carbon pool, BGB carbon accrual will only be eligible for credit issuance after the root system reaches full maturity—typically after 10 years. Therefore, credits may only be issued after the first harvest cycle and not for subsequent harvests.

To operationalize BGB crediting while managing risk, Dealin.Green will apply the following conservative issuance schedule:

- Year 10: 20% of the BGB, minus 10% buffer, can be issued
- Year 20: 20% of the BGB minus 10% buffer, can be issued
- Year 30: 20% of the BGB minus 10% buffer, can be issued

[14] https://www.sciencedirect.com/science/article/pii/S2352710222017028

[15] https://www.researchgate.net/figure/Frequency-of-building-life-span_tbl1_338384421

[16] https://www.bpie.eu/wp-content/uploads/2022/04/BPIE-BE_Good-Practices-in-EU-final.pdf

- Year 40: 20% of the BGB minus 10% buffer, can be issued

By only issuing a fraction of the credits every decade, the permanence of the issued credits remains valid in case of reversal due to land use change on the plot. Using the “ton year accounting” principle, where more carbon is being stored for a shorter period of time than the actual amount of credits. [17]

The Dealin.Green Insights Platform will manage all BGB calculations per individual plot. For eligible projects, the calculated values will be automatically incorporated into the yield files used for the Proba platform, applying the above 20% issuance thresholds.

7. Monitoring, Reporting and Verification of the Program

7.1. Monitoring plan

The Dealin.Green program applies a standardized Monitoring, Reporting, and Verification (MRV) framework to ensure methodological consistency, transparency, and environmental integrity across all participating plantations. Monitoring is carried out at least once per year for all Local Projects (L-PODs), and data is stored in the Dealin.Green Insights Platform.

The monitoring plan follows the Proba methodology *PM.0001 Short Rotation Paulownia Tree Cultivation* and applies some more specific rules for sampling.

7.1.1. Monitoring Protocol

Following the method described in version 1.1 of the Proba methodology, Dealin.Green will set up the monitoring based on the degree of homogeneity of the various plots. The VVB will also use the corresponding auditing guidelines attached to the methodology.

Step 1: Register project locations

[17] https://carbonplan.org/research/ton-year-explainer

Each plantation site will be recorded in the Dealin.Green Insights Platform (can be entered through the DG App; Android and Apple or through the plot measurement data template in Annex 10), including:

- GPS coordinates,
- Year of establishment,

Step 2: Assess homogeneity of the locations

Project locations will be classified by **soil type** (National soil maps provided by the EU will be used[18]) and **climate type** (based on the Köppen classification system[19]). Based on these two classifications project locations will be classified as **homogeneous or heterogeneous locations.**

Step 3: Sampling approach

- **Homogeneous groups:**
    - Select one representative location for full tree sampling.
    - The spatial arrangement of the chosen trees should also reflect the characteristics of each individual plot, to obtain a more accurate growth assessment. The number of monitored trees is determined based on the size of each plot. See the FAO sample size formula[20] to calculate the required number of tree samples (each tree is marked with an appropriate field number): for example, for a tree density of 825 trees/ha, 33 trees are selected for a one-hectare plot.
    - Tag and monitor representative trees with unique IDs in the **Insights Platform (or through the DG App)**.
    - For sites established in different years, their growth rates should be cross-verified by using Year-by-Year historical data from the representative location. For example, if Site A was planted in 2022 and Sites B and C in 2023 and 2024

[18] https://esdac.jrc.ec.europa.eu/resource-type/national-soil-maps-eudasm?type=data_inventory_eudasm&field_data_continent_tid_selective=All&field_data_country_country_selective=ES&field_data_cont_coverage_value=

[19] https://education.nationalgeographic.org/resource/koppen-climate-classification-system/

[20] Methodology: Short Rotation Paulownia Cultivation, page 37, A/R Methodological Tool Calculation of the number of sample plots for measurements within A/R CDM project activities.

respectively, measurements from Site A in Year 1 (2022) must serve as a benchmark to validate the growth rates in sites B and C.

- **Heterogeneous groups:**
    - Treat each site as a separate monitoring unit.
    - Calculate and monitor sample sizes independently for each site.
    - Documentation of groups should be provided in the monitoring report, supported by soil maps and climate data.

Step 4: Monitoring data

The data collection is handled through the Dealin.Green Insights App (Android and Apple) or through a plot measurement data template in Annex 10 maintained by a designated qualified individual who enters the data into the Insights platform; this person is mentioned in the L-POD. Dealin.Green will train LPDs to organize on-field training through workshops and cultivation protocols in the first year of onboarding the program, to guide and educate plantation owners on the best way to take measurements.

The following set of data will be recorded annually for all sampled trees:

Name of measurement	**Unit**	**Tools and methods used**
DBH	cm	Measured at a height of 130 cm from the ground (breast height). Using a forestry Calibrated Tree Trunk Thickness Gauge that measures up to 65 cm in diameter.
THT	cm	Aluminum measuring sticks. For high trees, a loader tractor is used to assist.
Height of first branches	cm	The measurement is carried out up to the first branches. The measurement is performed using a 'measuring stick' that measures up to a height of 5 meters. If the trunk's height is greater than 5 meters, the measuring stick is raised to the height of the first branches, and its other end is marked on the

		trunk. Subsequently, the measurement is taken, and the values from both measurements are added together.

LPDs are required to frequently visit the field to check the status of the trees. This regular growth control is conducted throughout the year. After the vegetative period, usually between October and March, LPDs take measurements from the growth. LPDs upload measured data and photos on the Insights platform. LPDs must ensure that the reference plot (with the full tree sample size) is measured in the same month each year, in order to consistently capture 12 months of carbon accrual. The specific month may be chosen according to local conditions, but must remain fixed for all subsequent measurement years."

Step 5: Data management and reporting

All data flows directly into the **Dealin.Green Platform**, where results are automatically processed and the impact is calculated. Dealin.Green staff has access to the data for viewing and editing. LPDs can see all the data related to monitoring their own sites. The LPDs are responsible for uploading the right amount of monitoring data at the right time/frequency. Section 7b explains what data is included in the monitoring report part of each verification event.

7.1.2. Verification Protocol

Each year, the verification will be executed by a VVB approved by Proba. Verification will take place for each local project.

Step 1: Project Developer Preparation

- All monitoring data must be collected in the Dealin.Green Insights platform and these measurements will be used for the quantification of the carbon yields.
- The monitoring report must be prepared

Step 2: Verification for Homogeneous Locations

- Primary site: VVB verifies all sampled trees at the representative location (DBH, THT, Tree IDs, GPS), as documented in the Insights App.
- Additional checks:

    - VVB selects √(number of homogeneous locations) additional locations.
    - At each location, the VVB measures 3 randomly chosen trees.
    - Cross-checks against platform data for ±20% consistency.
- Deviations beyond thresholds require full re-sampling at that site.

Step 3: Verification for Heterogeneous Locations

- Heterogeneous locations are classified based on soil type and climate type.
- In this way different monitoring units are identified.
- The VVB applies the same verification logic for homogeneous locations to each individual monitoring unit.

Step 4: Rotational Verification

The VVB must rotate plantations during different verification cycles.

Step 5: Verification Deliverables

VVB issues a Verification Report following the Proba Verification Template.
The report must include:

- Verification of the sampling logic applied and monitoring units identified,
- Site visit results,
- Verification of the realized carbon yield.
- List any deviations and corrective measures.

7.2. Monitoring Report

Dealin.Green has a process in place to process all local projects MRV information into a program wide report for the VVB.
Dealin.Green will provide a separate list of any Local Projects that have been onboarded since the last Verification Audit, so that the VVB can include the new L-PODs in their audit. This is necessary to add the achieved CO2 sequestration to the relevant assets in the Proba registry to allow for credit issuance.

The monitoring report will provide justification of the sampling rationale and results.

Dealin.Green provides the monitoring data from all projects as described in the L-PODs in an aggregated way to the VVB but allows for identification of how much CO2 removals have been effectively achieved at local project level. Besides the monitoring data that is provided to the VVB, Dealin.Green will publish a monitoring report for each project upon each verification event on the Proba registry.

See annexes for the instructions provided to the Local Project Developer and what, how, and how often the monitoring data should be entered in the Dealin.Green Insight Platform.

7.3. Post-Program Monitoring Plan

The Storage Duration can be guaranteed in different ways for the various carbon pools:

- Emission reductions from former cropland. As these emissions have been avoided, the non-permanence risk does not apply, and no post-project monitoring is needed
- For the AGB, the storage duration of 40 years is guaranteed through the products made from the tree biomass and is contractually set. Once the wood biomass is used, for example in insulation material or furniture with a lifespan of at least 40 years, no further post-project monitoring is needed.
- As described earlier in the document, the risk of non-permanence is the highest for the BGB. As such, specific conditions for including the BGB have been added to the program at L-POD level, and BGB credits will be gradually released for sale over time to reduce the risk of losing their permanence.

7.4. Managing data quality

7.4.1. Data Quality Management

Process and procedures

Dealin.Green has obtained ISO9001 and ISO14001 certifications. These ISO certifications will cover the scope of the program described in this document, and will specifically focus on:

- Operational risks (quality and assurance processes)
- Delivery risks

- Environmental risks (pollution, harmful practices, waste)

System

The Dealin.Green Insights Platform is the central data infrastructure for managing all GHG program information across local projects. It supports data collection, quantification, and integration with the Proba platform. The Insights platform is maintained by Apora and is accessible only to licensed Dealin.Green staff and LPDs.

A video that shows the system and how the workflows go can be provided to the auditor or verification events on request.

Step	Data provided by	Data Type	Entry Method	Stored In
Onboarding of a local project	Dealin.Green (supported by LPD)	Plot boundaries, land use history, soil data	Manual entry	Insights Platform
Asset data for crediting	Insights Platform	Plot details	Standardized asset CSV import file (in the future API connection should be possible)	Proba platform/ registry
Monitoring data	LPD	DBH, tree height	DG Insights App	Insights Platform
Yield calculations	Insights Platform	Automated net yield (AGB + BGB if eligible) per year	Based on input data & PM.0001 formulas	Insights Platform
Monitoring report data	Insights Platform	Automated net yield (AGB + BGB if eligible) per year	Export to Verification Body	Insights Platform
Yield data for crediting	Insights Platform	Automated net yield (AGB +	Standardized yield CSV import file (in the future	Proba platform/ registry

		BGB if eligible) per year per plot	API connection should be possible)	

7.4.2. Standard Values and Uncertainty

Standard Values (including justification)

For this program and all calculations, research has been done in an attempt to use the most relevant values, in line with the Proba Standard and the methodology used by the program (see Section 4). As such, the most recent sources are taken from the IPCC or the GHG protocol AR-5 GWP values.

For formulas and calculations, the Program Developer uses the Proba methodology: "P*M0001. Short Rotation Paulownia Tree Cultivation*", which is based on a thorough and scientific development process. The mentions and links to the sources are added as much as possible in footnotes throughout the document.

For baseline calculations, the Local Project Developer is required to use conservative values. Data sources are as much as possible country-specific to better reflect reality (e.g. electricity EF/kWh, fuel per liter, or fertilizer use per crop per ha, etc.). When a value comes in bandwidth, the lower value is used for carbon removals/reductions, and the highest value is used for emissions. This is to reduce risks of over crediting and to ensure the number of credits issued is not based on an inflated baseline.

Uncertainty

Uncertainty refers to the level of confidence that measurements of a tree sample accurately represent the totality of the trees. Some degree of variation between sample measurements and other trees is normal. For this, the margin and inventory protocol from the Proba methodologies is used.

8. Uniqueness and Carbon Rights

Dealin.Green is performing the above-mentioned verification upon the onboarding process. Further commitment from the Local Project Developer is captured during the contract agreement phase.

By Signing the Proba Terms & Conditions, the Program Developer Dealin.Green agrees to comply with the Proba Standard, which describes this obligation in Chapter 4.2.

Dealin.Green accepted the Proba Terms & Conditions on November 13th, 2023.

8.1. At Program Level

LPDs who wish to join this GHG program managed by Dealin.Green must sign a contractual clause that the land used for the intervention under the Dealin.Green program cannot be used for any other GHG emission reduction targets or programs (e.g. (local) government). See contract model in Annex 1.

Via the Proba platform, each credit can be traced back to the individual plot.

9. Local Stakeholder Consultation

All projects developed under this program are required to conduct a Local Stakeholder Consultation (LSC) prior to inclusion in the program. The objective is to ensure that stakeholders who may be affected by the project are informed, consulted, and given the opportunity to provide feedback. This process is a core requirement of the Proba Standard (Sections 5.2 and 12) and must be completed before the first verification.

9.1. Minimum requirements

The following criteria apply to every L-POD:

9.1.1. Timing

The LSC must be completed before the first verification event and reflect the final project design and implementation as documented in the L-POD. The LSC cannot be conducted retroactively after the verification has started.

9.1.2. Stakeholder Identification

Local Project Developers (LPDs) must identify and invite at minimum:

- Local government
- Neighboring landowners
- Local community representatives
- Agricultural associations
- Indigenous groups (if applicable)
- Local businesses

9.1.3. Information Disclosure

The following must be shared in an accessible format:

- Project objective and timeline
- Expected environmental and socio-economic impacts
- Etc

9.1.4. Consultation Format

At least one interactive consultation must take place (physical meeting or virtual, depending on context). Supplementary outreach (email, posters, SMS, calls) is strongly encouraged.

9.1.5. Feedback and Response

LPDs must document:

- Stakeholder concerns or objections
- How the project team responded or adjusted project design
- Whether further follow-up was provided

9.1.6. Evidence Requirements

The following must be submitted as part of the L-POD:

- Completed Local Stakeholder Consultation Template (see Annex 4)
- Evidence of meetings or any written feedback received

9.1.7. Verification

The adequacy of the stakeholder consultation will be assessed during the first verification event by the VVB. If consultation is incomplete or lacks evidence, the L-POD may be flagged as non-compliant and require corrective action before issuance of credits.

9.2. Applicability

These requirements apply to all L-PODs, regardless of country, project size, or rotation type. Consultation materials must be presented in the local language(s).

Dealin.Green, provides a template[21] to conduct the local stakeholder consultation where relevant. The proceedings and results of which will be part of the L-POD document.

10. Social and Environmental Safeguards

10.1. Do Not Harm Assessment

The Dealin.Green program complies with the “Do No Harm” principle required for GHG mitigation activities under the Proba Standard. This principle ensures that climate action does not cause unintended negative social or environmental consequences.

To demonstrate compliance, Dealin.Green has completed a comprehensive safeguard review using the *Proba Sustainable Development Benefits and Safeguards* framework. This includes assessing whether the project activities may introduce any environmental or social risks and identifying mitigation measures where relevant.

[21] Annex 4

The completed safeguard assessment is included in Annex 8 of this document.

10.2. Co Benefits (SDG contributions)

Next to contributing to SDG 13, “Climate Action”, the program contributes directly or indirectly to two other Sustainable Development Goals.

It is possible that Local Projects, in their local context, contribute to other SDGs. This will be assessed and described in the L-POD documents.

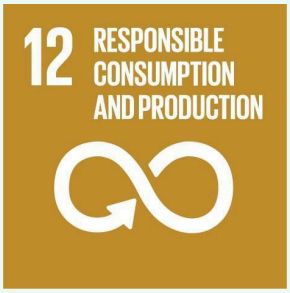
SDG 9: Industry, Innovation, and Infrastructure

The Program Developer is partnering with multiple companies to develop building materials. New innovative, biobased solutions and construction processing technologies are developed at the same time. The goal is to utilize the maximum amount of the tree, including processing wood waste, into upcycled high-value insulation materials. Dealin.Green has acquired innovative patents regarding bio-based processing that can be used for Paulownia timber and fibers.

The project owner explores methods for enhancing the durability, strength, and versatility of Paulownia timber to expand its applications in various infrastructure projects while minimizing environmental impact.

By promoting the use of Paulownia timber, the project contributes to improving access to sustainable materials for construction and infrastructure development.

SDG 12: Responsible Consumption and Production



The program contributes to this goal in 2 ways. First, at production level, Paulownia plantations cultivated sustainably minimize land-use for supplying the timber industry, as it generates a much larger amount of

wood biomass than any other wood plantations, reducing pressure on land. Indeed, the trees can be harvested 4 times in 40 years compared to 1 for the main plantation tree species: spar pine trees.

At consumption level, the program will utilize 93% of the harvested timber and as such will have minimal waste, much less than what is common in the timber industry.

This new supply contributes to boosting and supplying material for the nascent bio-based building industry in Southern and Western Europe.

The project promotes transparency and accountability throughout the supply chain, tracing the origin of Paulownia timber to certified plantations.

11. Program Risks and Mitigation Measures

At the program level, the Program Developer has identified several risks. These are listed together with the mitigation measures in Annex 9 to this M-POD document.
Plantation specific risks are listed and further described in the L-POD documents.

11.1. Buffer Pool

This project is subject to the standard buffer pool percentage of 10% set by Proba. This means that 10% of the issued Impact Units will not be allocated to the Program Developer to offer for sale but will be added to the general Proba Buffer Pool.

12. Definitions and acronyms

For a full overview, please refer to the Proba Standard.

Additionality	Additionality refers to the concept that any carbon removal or reduction Project should result in greenhouse gas emissions reductions that would not have occurred without the Project. In other words, the Project's positive impact on reducing emissions

	should be "additional" to what would have happened under the business-as-usual scenario.
Baseline (scenario)	Hypothetical reference case and related GHG emission sources, sinks, and reservoirs that best represent the conditions most likely to occur in the absence of a proposed GHG Project.
Buffer Pool	A Buffer Pool is a reserve of Carbon Credits established to cover potential losses in GHG Projects, ensuring the integrity of emissions reductions or removals over time. The size of the Buffer Pool is aligned with the level of (reversal) risks associated with the GHG Project.
Carbon Credit	A Carbon Credit represents at least 1 tonne of CO2 (tCO2), or 1 tonne of CO2e (tCO2e) reduced or removed for a certain period of time. One tonne (metric ton) (t) equals 1000 kg. For carbon equivalency, Proba uses the AR-5 assessment from UNFCCC[22].
Conservativeness	Use of conservative assumptions, values, Methodologies, and procedures to ensure that GHG emission reductions or removal enhancements are not over-estimated.
Crediting Period	The "Crediting Period" refers to the specific duration of time during which a GHG Project is eligible to generate and issue Carbon Credits for the GHG emissions it reduces or removes. This period is predefined and ensures that the project's emissions impact is monitored, verified, and credited only within that set timeframe. A Crediting Period can be renewed once or multiple times.

[22] https://ghgprotocol.org/sites/default/files/Global-Warming-Potential-Values (Feb 16 2016)_0.pdf

Dealin.Green Insights Platform	It’s an online platform that provides farmers with access to essential tools and information needed to successfully grow sustainable fiber crops such as Paulownia and Miscanthus.
GHG Project	A GHG Project is any specific activity or set of activities intended to reduce GHG Emissions, increase the storage of carbon, or enhance GHG removals from the atmosphere, compared to a GHG baseline. In the context of the voluntary carbon market (VCM), GHG projects generate carbon credits, which can be traded or sold for insetting or offsetting purposes.
Leakage	In the context of a GHG Project, leakage refers to the unintended increase in greenhouse gas emissions outside the Project Boundaries as a direct result of the project's activities.
Local Project Developer	The Local Project Developer joins the GHG program. They are the entity responsible for the development, implementation, and all GHG program-related activities (e.g. MRV) for the Local Project location/site. They have contractual obligations with the Program Developer. The Local Project Developer is often also the plantation owner and operator.
Local Project Owner	The Local Project Owner is responsible for the L-POD.
Program Developer	The Program Developer is responsible for the M-POD.
Local Project Overview Document (L-POD)	The L-POD is the document specific to the local Project location, as required by the GHG Program POD. It includes all location-specific details, site description, and context, as well as all the required input data (baseline, additionality, GPS location, estimated yields, etc.).

Permanence	Permanence refers to the assurance that the carbon reductions or removals achieved by a GHG Project will remain effective and won't be reversed over time.
Program Developer	The Program Developer is the entity that is setting up the GHG program and acts as an umbrella for all program participants. The program Developer onboards and supports Local Project Developers in joining and implementing the program, coordinates, monitors program activities, and oversees the auditing process for program Validation and Yield Verification.
Uncertainty	In the context of a GHG project, uncertainty refers to the degree of doubt associated with the estimation of GHG emissions, removals, or reductions. It encompasses the potential variability in measurements, calculations, and assumptions used in the project, impacting the accuracy and reliability of the reported GHG benefits.

Annexes

Annex 1: Contract example with Local Project Developer

Dealin.Green

DECLARE THAT THEY HAVE AGREED AS FOLLOWS:

Article 1: Scope of work

Dealin.Green agrees to:

1.1. Develop, manage, and oversee the creation and registration of carbon credits based on Paulownia plantations owned or operated by _____.

1.2. Develop the Master Project Overview Document and assist developing the Local Project Overview Document based on the data which will be requested from **[Company Name].**

1.3. Ensure that all data to make the carbon credits comply with Dealin.Green standards, Proba's methodology and regulatory frameworks; https://proba.earth

1.4. Facilitate ongoing monitoring and verification of the carbon credits performance and ensure that all necessary documentation is submitted for registration.

1.5. Provide the necessary partners needed for verification and validation of the plantation.

1.6. Assist with the sale or transfer of carbon credits to buyers, subject to mutual agreement with **[Company Name].**

[Company Name] agrees to:

1.7. Provide access to the Paulownia plantations and provide all relevant data required for the verification and registration of the carbon credits, such as:

- Approval of ownership/lease of land
- Documentation about the baseline (status of land before planting Paulownia
- Year of planting
- Type of plants and proved non-invasive species
- Assist the Verification and Validation team on sites for the measurement of the Paulownia trees.
- Provide necessary assistance and cooperation in the sale or transfer of carbon credits, as needed.
- Taking measurements of the trees to determine the carbon sequestration on the plantations.
- For a complete overview see the Local Project Overview Document

1.8. Not to contribute to GHG reduction targets or programs of other organizations or initiatives other than Dealin.Green carbon reduction program.

1.9. Work according to the ISO 14001 and 9001 standards from Dealin.Green

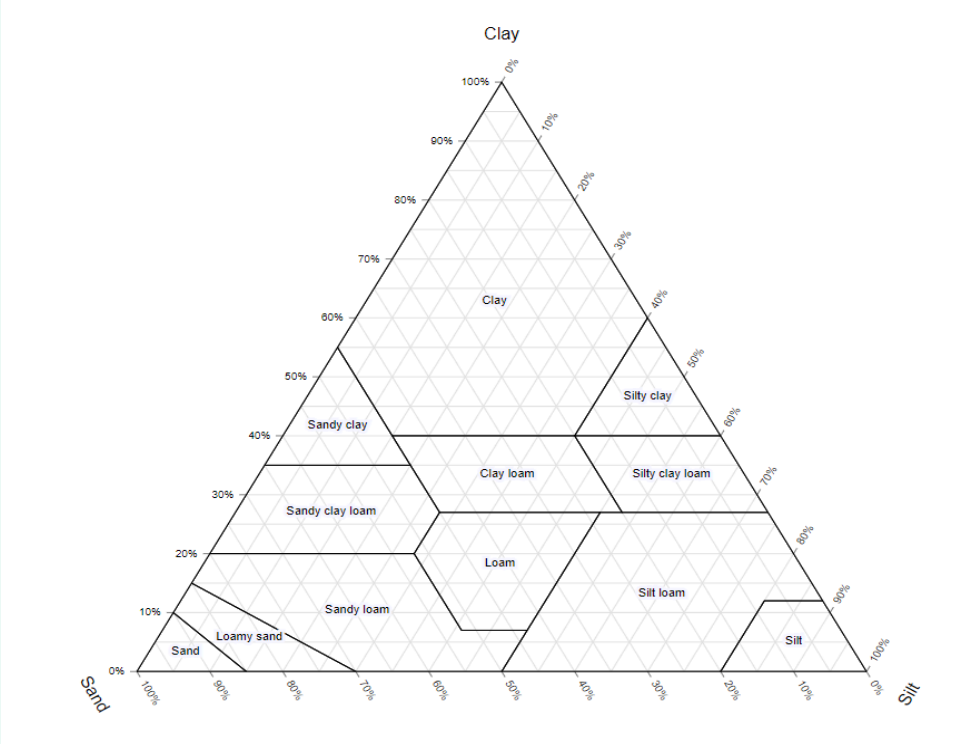
1.10. Meet the minimum requirement for the carbon storage duration of 40 years in products such as: construction and timber sector.

1.11. Dealin.Green cannot be held liable for the accuracy, completeness or reliability of the provided documentations of **[Company Name].**

Annex 2: Soil and Climate Suitability

The following guidelines are used to detect if the land is suitable for the program (exceptions on these parameters may affect the growth results). Criteria for eligible soils:

- Peaty soils (20-40% o.s.)
- Sandy and dune soils (min. 2% organic matter content)
- Clay and silt soils with < 20% siltiness
- pH value range: 4,7 - 8,3
- Temperature: -22°C - 45°C
- Groundwater level: not higher than 1m
- Soil depth higher than 50 cm, and absence of rock layers
- Only regions where; during dry season > 40mm/month (at least 700mm/year) (otherwise additional irrigation possibilities)



Annex 3: Bio-based concrete and other construction materials

Mortar and brick

Mortar with a mixture of Paulownia fibers to add strength and reduce weight. A bio-based binder is used for the composite structure. A low quantity of cement is used compared to traditional mortar. Sand is used as an additive to improve structural integrity and durability.

Boards and plywood

The properties of Paulownia make it a valuable building material. Boards of various sizes and thicknesses offer great possibilities for many purposes related to the construction sector.

Cross laminated timber

Paulownia is increasingly used in cross-laminated timber and other engineered wood products, providing sustainable alternatives to conventional building materials with excellent carbon storage potential.

Cladding

Paulownia's natural resistance to rot, decay, and insects makes it excellent for exterior applications. Its low thermal conductivity provides insulation benefits, while its dimensional stability prevents warping in changing weather conditions, resulting in durable and attractive building facades.

Annex 4: Local Stakeholder Consultation Template

All projects developed under this program are required to conduct a Local Stakeholder Consultation (LSC) prior to inclusion in the program. The objective is to ensure that stakeholders who may be affected by the project are informed, consulted, and given the opportunity to provide feedback. This process is a core requirement of the Proba Standard (Sections 5.2 and 12) and must be completed before the first verification.

Link to the Local Stakeholder Consultation Template:

Annex_4___Local_Stakeholder_Consultation_Template

Annex 5: List of non EU countries approved by Proba

All new plots wishing to join this program must be located in the EU or be listed as approved by Proba in the table below.

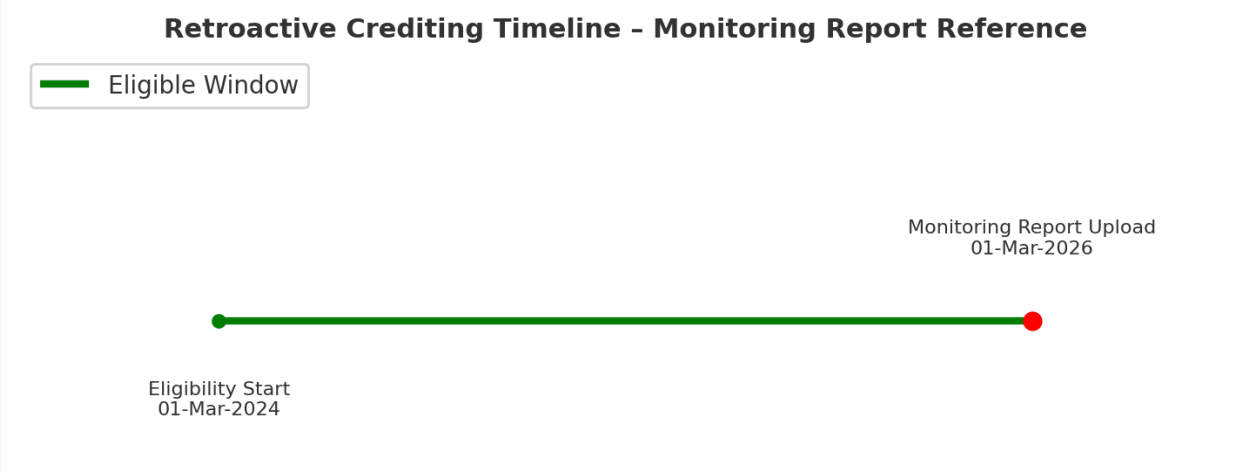
Country	Approval status	Approval date
	Approval pending	Date
	Approval pending	Date
	Approval pending	Date
	Approval pending	Date
	Approval pending	Date

Annex 6: Retroactive crediting timeline (Under review)

Reference point: Two-year window prior to the monitoring report upload to the Proba Register of the Local Project Developer project.

Eligible example:

1. Monitoring report upload: 1 March 2026
2. Eligibility window: 1 March 2024 - 1 March 2026



Annex 7: Proba Additionality Assessment DG

Note: for this program, Dealin.Green has been looking at the scope of geographical Europe. As the program will start in Spain, this template also includes the information relative to Spain (this information will also be part of the additionality assessment in the L-POD).

SECTION A: Regulatory Additionality

A.1 Legal Framework Assessment

• Is the project activity required by any existing law, policy, or regulation?	No, the planting of Paulownia trees is not required by any law, policy or regulation in the geographical scope of the program.
• Are there any upcoming regulations that would mandate this activity during the crediting period?	No, there are no clear upcoming regulations that would mandate planting Paulownia trees. The EU CRCF[23] framework will provide an incentive for carbon farming and carbon storage in building via various biomass streams, but not prescribe specific interventions. There is no mention of Paulownia in the whole CRCF framework and directives.
• If the project is required by regulation but goes beyond the minimum requirements, describe how the intervention exceeds the legal baseline.	No, not required.
• Are there any sector-wide GHG reduction targets or current trends that indicate that the project activity is becoming standard?	The construction sector is a major source of GHG and is responsible for 40% of all GHG emissions globally. As such, the sector has been looking into decarbonization, but pathways are unclear, and targets often far in the future (2050).

A.2 Methodology-Specific Guidance

[23] https://climate.ec.europa.eu/eu-action/carbon-removals-and-carbon-farming_en

• Provide the specific rules from the selected methodology that apply to assessing regulatory additionality.	The rules are set by the Proba Standard. All levels of additionality must be proven: regulatory, financial, and prevalence, and described in this assessment document. The methodology specific rules are:

SECTION B: Financial Additionality

Proba accepts the usage of the CDM Tool for the Demonstration and Assessment of Investment Additionality[24] as a valid and structured approach to assess financial additionality. Project developers may refer to this tool to guide their analysis, using its accepted logic and structure to demonstrate the need for carbon finance. Alternatively project developers can use the following checklist.

B.1 Investment Viability

This program-level financial additionality assessment evaluates whether the Short Rotation Paulownia Cultivation Program across the European Union would be financially viable in the absence of carbon finance.

A representative EU-wide business case has been developed using conservative, experience-based average assumptions reflecting typical conditions across multiple Member States (including Northern, Western, Southern, and Central Europe). The analysis considers the full investment cycle of Paulownia cultivation, including establishment, operational management, and a single main harvest event at the end of the rotation.

[24] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf

Dealin.Green - Business Case Paulownia	
Project	Paulownia in Europe - Business Case
Location	Average Europe (based on NL/GER/ES/HR)
Nr of plots	1
Date	22-12-2025

Project characteristics		Price per tree
Hectares	1	
Trees per ha	825	
Trees total	825	€ 7,00

Costs per hectare								
Costs year 1	Per ha		Running costs	Per ha		Processing costs	Per m³	m³ per ha
Planting costs	€	750,00	Irrigation	€	75,00	Harvesting	€ 35,00	585
Land preparation	€	750,00	Land lease	€	750,00	Bundling	€ 25,00	
Labour (staff)	€	3.375,00	Fertilization	€	200,00	Sawing edges	€ 50,00	
Soil samples	€	100,00	Labour (staff)	€	2.400,00	Drying	€ 50,00	
Irrigation system	€	750,00	Monitoring/managing	€	300,00	Storage & logistic	€ 15,00	
Energy	€	300,00	Energy	€	400,00			
			Machines	€	300,00	Price per m³	€ 350,00	
			Unforseen	€	100,00			

Growing year	2026 0	2027 1	2028 2	2029 3	2030 4	2031 5	2032 6	2033 7	2034 8	2034 9
Sales wood	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ 163.800,00
Total revenue / yearly	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ 163.800,00
Total revenu / cumulative	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ 163.800,00
Gross expenses										
Plant material	€ 5.775,00									
Planting costs	€ 750,00									
Land preparation	€ 750,00									
Labour (staff)	€ 3.375,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00	€ 2.400,00
Soil samples	€ 100,00									
Irrigation system	€ 750,00									
Land lease	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00	€ 750,00
Irrigation	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00	€ 75,00
Fertilization	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00	€ 200,00
Monitoring/managing	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00
Energy	€ 300,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00	€ 400,00
Machines	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00	€ 300,00
Unforseen	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00	€ 100,00
Processing costs										
Harvesting										€ 20.475,00
Bundling										€ 14.625,00
Sawing edges										€ 29.250,00
Drying										€ 29.250,00
Storage & logistics										€ 8.775,00
Total cost / yearly	€ 13.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 4.525,00	€ 106.900,00
Total cost / cumulative	€ 13.525,00	€ 18.050,00	€ 22.575,00	€ 27.100,00	€ 31.625,00	€ 36.150,00	€ 40.675,00	€ 45.200,00	€ 49.725,00	€ 156.625,00
Profit / yearly	€ -13.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ -4.525,00	€ 56.900,00
Profit / cumulative	€ -13.525,00	€ -18.050,00	€ -22.575,00	€ -27.100,00	€ -31.625,00	€ -36.150,00	€ -40.675,00	€ -45.200,00	€ -49.725,00	€ 7.175,00
Profit per year / ha										€ 797,22
Return on Investment										4,6%
Internal rate of return										2,3%

• Conduct a simple cost analysis demonstrating that the total costs of implementing and operating the project exceed any financial benefits.	At program level, a representative EU-wide business case demonstrates that the costs of implementing and operating Short Rotation Paulownia plantations nearly equal the financial benefits from wood sales. Over a full rotation cycle, total revenues amount to €163,800, while total cumulative costs reach €156,625, resulting in a cumulative profit of only €7,175. All revenues are realized only in the final harvest year, while the preceding years require continuous investment with no income, leading to prolonged negative cash flows. This cost structure shows that, under business-as-usual conditions, the financial benefits are marginal relative to the total implementation and operating costs.
• If the project does generate revenues, quantify the business case using an investment analysis method like Net Present Value (NPV) or Internal Rate of Return (IRR).	When assessed using standard investment metrics, the business case yields a Return on Investment (ROI) of approximately 3.8% and an Internal Rate of Return (IRR) of approximately 2.3%. These returns are below typical benchmarks for private agricultural or forestry investments in the European Union and do not sufficiently compensate for the long investment horizon, delayed revenue realization, and exposure to operational and market risks. Without additional and regular income from carbon finance, the program is not financially attractive at scale, thereby demonstrating financial additionality at the Master Program (M-POD) level.

B.2 Financing conditions and constraints

• Are there cost-related barriers (e.g., high upfront CAPEX, long ROI periods)?	At program level, Short Rotation Paulownia cultivation for high-value timber and carbon sequestration faces clear cost-related barriers. The project requires high upfront capital expenditure, including site preparation, planting material, planting operations, irrigation systems where needed, and intensive early-stage maintenance. These initial investments are followed by ongoing operational costs for maintenance, monitoring, harvesting, and logistics throughout the rotation period. A key barrier is the delayed revenue profile. Unlike annual crops, revenues from timber are realized only at harvest, typically 8–12 years after planting, resulting in prolonged periods of negative cash flow and significant capital lock-in. In addition, while Paulownia wood has strong technical properties, markets for sustainably sourced, certified Paulownia timber for long-lived applications are

	still developing, leading to market uncertainty and potential price volatility.
• Would this project proceed without carbon financing?	Without carbon finance, it is very unlikely that the program would proceed or scale under business-as-usual conditions. The project requires continuous investment over many years without interim revenues, creating substantial financial risk and limiting access to conventional financing. Carbon credit revenues generated during the tree growth phase are essential to: • support scaling of the program and accelerate climate impact, • sustain operations and provide continuity of income for project staff and participants, • reduce investment risk and improve cash-flow dynamics. The revenue stream from the sale of Carbon Credits plays a critical enabling role by improving financial attractiveness, shortening the effective payback period, and mitigating long term investment risks. As such, carbon finance is necessary for the implementation and expansion of the program, confirming that the project would not proceed at scale without it.
• Has the project received subsidies or public incentives related to emissions reductions? Please explain their role and impact.	No, this project has not received any subsidies nor incentives

B.3 Supporting Evidence

• Include cost analysis or calculations in a spreadsheet supporting the first condition (B1).	See Business case

SECTION C: Prevalence

Projects must show that the intervention is not commonly adopted in the relevant region or sector. This supports the claim that the activity is not business-as-usual.

Proba follows the CDM common practice guidelines[25], considering an intervention common if its adoption rate exceeds 25%. Developers may demonstrate non-prevalence using adoption data, benchmarks, or expert assessments.

If adoption data is limited, performance benchmarking may be used to show the project significantly outperforms typical practices. A barrier analysis can supplement the prevalence assessment, but is not mandatory.

C.1 Prevalence / Common Practice

• What is the adoption rate of this practice in the relevant region/sector?	There are no official records of surface planted with Paulownia in Spain. The cultivation exists at small scale and there are several experimental projects in the Mediterranean region for Paulownia planting, mostly focused on biomass to fuel
• Is it below 25% (Proba threshold for non-common practice)?	**Europe** Extensive research has not yielded any statistics about Paulownia plantations nor timber volume. Paulwonia is considered a “niche” species and is included in the broader

[25] https://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid44.pdf

	category “other hardwood”. In Europe, production of roundwood is dominated by coniferous species for 69%, the 31% remaining being non-coniferous species. Sources mentioning the main non-coniferous tree species do not mention Paulownia (e.g. oak, beech, ash, maple, cherry, chestnut, beech, birch)[26] [27]. As such it is safe to assume that Paulownia only represents a very small percentage of planted timber surface and wood volume produced in Europe.

C.2 Benchmarking

• Provide performance data showing that the project significantly exceeds average practice (for example achieving lower nitrogen input per hectare)	Paulownia is one of the fastest growing trees in the world. Paulownia plantations significantly exceed average practice in Europe. Over 10 years, Paulownia sequesters 350–400 tCO_2/ha, compared to 100–120 tCO_2/ha for poplar and 30–50 tCO_2/ha for oak[28][29]. Biomass yields reach 300–350 m^3/ha, 2–3x higher than poplar and 5–7x higher than oak. Furthermore, Paulownia delivers high-quality timber in 8–10 years, versus 12–15 years for poplar and 40–60 years for oak, showing clear superiority in carbon efficiency, biomass productivity, and land-use efficiency.
• Name the benchmark (e.g., regional nitrogen norm, GHG intensity benchmarks, FAO or peer-reviewed studies).	Paulownia plantations significantly exceed average practice in Europe Paulownia sequestration & biomass: Bioeconomy Solutions: Paulownia captures up

[26] https://whitmores.co.uk/our-timber/european-hardwoods/

[27] https://cameroontimberexport.com/european-wood/

[28] bioeconomysolutions.com

[29] esajournals.onlinelibrary.wiley.com

	to 40–103 tCO_2/ha/year Poplar benchmark: MDPI (Applied Sciences, 2020): Poplar CO_2 fixation ~28.7 Mg biomass/ha/year[30] Oak benchmark: European Forest Institute (EFI, 2024): Agroforestry systems range 0.5–19.4 tCO_2/ha/year[31]

C.3 Non-Financial Barriers (Optional)

• Describe any technical, institutional, or cultural barriers that may hinder adoption. This is optional and can supplement the prevalence assessment but is not required.	-

C.4 Methodology-Specific Guidance

• Where applicable, include specific performance indicators or thresholds defined by the methodology.	3. Prevalence Prevalence additionality, or common practice analysis, evaluates whether the proposed project activities are already widely adopted in the project area. This criterion determines whether the project activity is not a common practice in the region that takes place. A common practice analysis should be conducted to evaluate the extent to which similar activities have been implemented in the project area. This involves an analysis of historical and current land use practices within the region. A detailed report comparing the

[30] https://www.mdpi.com/2076-3417/10/22/8011?utm_source=chatgpt.com

[31] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://efi.int/sites/default/files/files/publication-bank/2024/efi_fstp17_2024.pdf?utm_source=chatgpt.com

	proposed project to existing similar activities should be provided, including data on the prevalence of such activities and justifying any differences. For example, if short rotation Paulownia tree cultivation projects are not commonly practiced in the region due to market barriers, technological barriers (absence of technical knowledge among local farmers) or other factors, the project can demonstrate its uniqueness and innovative approach.

C.5 Supporting Evidence

• Provide adoption data, expert interviews, and baseline vs. project datasets.	At Europe level, we searched extensively via AI tools. Paulownia is currently cultivated in multiple countries, Netherlands, Italy, France, Easter at very low scale. For Spain specifically Page 7 on this file: https://www.miteco.gob.es/es/biodiversidad/estadisticas/forestal_balance_nacional_madera.aspx Shows the cultivated tree species and the surface in ha starts at 1% threshold. Paulownia is not listed, and is considered a niche species.

Annex 8: Sustainable Development Criteria

Criteria	Risk relevant to the project (Yes/No)	Response to safeguard requirements (incl POD references)

1. Assessment and management of environmental and social risks	Yes	At program level, Dealin.Green applies the Environmental and Social Do No Harm Principle to ensure activities avoid or minimize negative environmental and social impacts.
		
		• The program requires LPDs to assess the need for an Environmental Impact Assessment (EIA) and, where required, include it in their L-POD.
		• Program-level due diligence is applied to all new partners and suppliers, including "bad news" checks, credit ratings, regulatory monitoring, and verification of historical land use via cadaster and GIS data.
		• Environmental risks are managed under ISO 9001 and ISO 14001-certified systems, covering pollution, harmful practices, and waste. Specific environmental risks mitigated at program level include:
		  ○ use of only EU CAP-approved sterile Paulownia cultivars to prevent invasiveness,
		  ○ prohibition of planting in protected areas,
		  ○ and directing all harvested biomass to long-lived products.
		• Social risks are considered low and comparable to other farming systems; training and cultivation masterclasses are provided to ensure safe practices.
		• A grievance mechanism is available for plantation staff and external stakeholders, and continuous improvement is pursued through annual reviews of monitoring data and updates to processes.

2. Labour rights and	No	The project does not employ or subcontract workers;

working conditions		farmers are independent actors operating under existing labor laws in the Netherlands. No activities involve unsafe conditions, discrimination, or forced/child labor. Risk is considered negligible.
3. Resource efficiency and pollution prevention	Yes	The program holds ISO 14001 certification for environmental risk management. Environmental risks addressed include pollution, harmful practices, and waste. Only sterile, non-invasive Paulownia varieties are used (CAP code 1927). The program excludes deforestation and short-lived biomass uses, directs harvested wood to long-lived products, and integrates waste minimization (processing wood waste into biobased materials). Fertilizer and irrigation follow best practices, and land is selected for suitability to minimize resource waste.
4. Land acquisition and involuntary resettlement	No	All land used is under clear tenure and ownership prior to joining the program (Section 1.4). No involuntary land acquisition or resettlement is allowed; participation is voluntary and contractual. Historical land use is verified through cadaster and GIS data.
5. Biodiversity conservation and sustainable management of living natural resources	Yes	Planting is prohibited in protected areas (e.g., Natura 2000, National Parks), lands of significant ecological or cultural value, and on land used for significant/endangered crops (Section 1.4). Only approved sterile Paulownia cultivars are planted to avoid invasive spread. Program-scale due diligence ensures long-term sustainability and land suitability for biodiversity.
6. Indigenous Peoples, Local Communities, and cultural heritage	No	The program is located in the EU and does not affect any Indigenous Peoples. Culturally significant sites are excluded as mentioned in Section 1.4.
7. Respect for human rights, stakeholder engagement	Yes	Local Stakeholder Consultation (LSC) is mandatory prior to program inclusion (Section 11). Engagement steps include identifying stakeholders (local government, landowners, community reps, NGOs), disclosing project information, hosting interactive consultations, documenting concerns/responses, and ensuring ongoing engagement.

		A grievance mechanism is available for plantation staff and external stakeholders.
8. Gender equality	No	Participation in the project is open to all qualifying farmers regardless of gender.
9. Robust benefit-sharing	Yes	Revenue from carbon credit sales is shared transparently between Dealin.Green and LPDs, per contractual terms (Section 1.8). Commissions retained by Dealin.Green cover platform maintenance, marketing, verification, and program management; the remainder is transferred to LPDs. Contracts and financial flows are auditable during verification events.
10. Ensuring positive SDG impacts	Yes	The program supports SDG 13 (Climate Action) through large-scale carbon sequestration, SDG 9 (Industry, Innovation, Infrastructure) by developing biobased building materials, and SDG 12 (Responsible Consumption & Production) by reducing land-use pressure and maximizing timber utilization (Section ??).

Annex 9: Risk analysis and Mitigation Measures

Risk description	Likelihood	Impact	Risk score (pre-mitigation)	Mitigation measure	Residual risk (post-mitigation)
Risk of short-lived wood use: If harvested wood is sold into short-lived products, the stored carbon will be released, permanence claim will be lost.	Medium	High	High	Contractual obligations; Wood processors and buyers are part of the psot harvest verification audit scope. Exclude issuance of credits without proof.	Medium
Risk of BGB and SOC reversal: If land is sold, plowed, or converted, the roots/soil carbon will be released, credits need to be released	Medium	High	High	SOC is currently excluded; BGB is either excluded or conservatively issued over time	Medium-Low
Risk of land tenure insecurity and contract termination: If farmers lack secure rights or exit contracts, continuity and permanence will be jeopardized.	Medium	High	High	Land tenure documentation is checked during project onboarding; Farmers sign binding contracts that cover the full crediting period	Medium
Risk of weak timber markets: If Paulownia demand is low, plantations will be abandoned, sequestration reduced.	Medium-High	High	High	The LPD needs to demonstrate (e.g. emails from wood processors) that there is local demand for Paulowia wood, if possible in a contractual from. Additionally, Dealin.Green is also active in connecting wood buyers with LPDs to facilitate wood offtake. As a last resort, and in order to guarantee the credibility of issued credits, Dealin.Green has engaged discussions with various local biochar	Low

				companies, so that the oversupply of wood biomass can be converted into a high value and tradable product	
Risk of excessive water demand: If plantations need heavy irrigation, there will be competition with local water use, community opposition.	Medium	Medium-High	High	Only projects in regions with sufficient rainfall patterns are approved (see Annex 2)and where water supply is proven sufficient for the plantation without stressing local resources. Dealin.Green requires proof of water use permits from local authorities, reporting on water consumption, and adherence to water use restrictions when applicable. Dealin.Green recommends water saving irrigation equipement (e.g. programmable timers, drip irrigation), to ensure minimum usage of water.	Medium-Low
Risk of regulatory changes: If stricter EU/national rules are adopted, additionality may be lost and credits may be disqualified.	High	Medium-High	High	Proactive alignment with regulatory changes	Medium
Risk of food security concerns: If perceived to replace food crops, this may lead to opposition and possible rejection.	Medium	Medium	Medium	Land-use assessments; Local stakeholder consultation (part of POD); Grievance channels.	Low
Risk of MRV inaccuracy: If biomass is mismeasured or LPD reporting is weak, this may lead to over/under-crediting and credibility loss.	Medium	High	High	Conservative equations; Guidelines for verification; Uncertainty deductions.	Medium-Low
Risk of farmer exit: If farmers terminate contracts prematurely, plantations may be abandoned → permanence risk.	High	High	High	Long-term contracts Onboarding checks Rules on BGB inclusion Buffer pool coverage	Medium

Risk of LPD governance failure: If Local Project Developers fail to uphold standards, weak implementation or monitoring may occur → reduced credit integrity.	Medium	High	Medium-High	Screening and capacity-building during onboarding Verification audits	Medium-Low
Risk of operational failure (plantation management, pests, fire, storms): If plantations are poorly managed or face biotic/abiotic shocks, growth rates and carbon storage may fall → lower credit issuance.	Medium	High	Medium-High	Farmer training Standardized plantation protocols Buffer pool.	Medium
Risk that less parties joined the program than planned **The impact is mostly linked to the scale of CO2 removal achieved but does not damage the quality of the issued credits.**	Low	Medium	Medium	As all L-LPOD and LPD have are involved in the financing of each project, the scale is not a risk as the financing of the projects grows together as the program expands. Should the program realize less impact than what is stated in this M-POD, there is no credibility issue resulting from it for the issued credits.	Low
Local Project Developers are not following the tree cultivation and operational guidelines as agreed This can result in audit and credit issuance delays and increase resources used to implement corrective action. Potential reputational risk for DG.	Medium	High	Medium-High	Dealin.Green has all measurement data centralized, including plantation photos. This makes regular analysis possible and enables Dealin.Green to detect any anomalies early on. Regular contact with LPD are also part of the LPD obligation and mitigate the risks.	Medium-Low

Annex 10: Plot measurement data template

The Local Project Developer is responsible for recording detailed annual measurements for each sample tree, including DBH, THT, and selected volume samples, using Excel or Google Sheets for systematic data entry. Once compiled, the data is delivered and securely stored in the Dealin.Green Insights platform, ensuring that all information is centrally organized, safeguarded against unauthorized modification, and readily accessible for validation, review, and verification processes. By maintaining this centralized repository, the platform upholds transparency, data integrity, and accountability, thereby strengthening the reliability of project reporting and facilitating efficient future verification and validation efforts.

Data Collection/Measurements (annually and harvesting stage)						
Employee in charge (Data Collector):						
Tree ID	Location	Date	THT (m)	DBH (m)	Volume (m3) based on Huber's formula	Notes
1						
2						
3						
…						
25						

Annex 11: Sampling approach homogeneous and heterogeneous groups

Homogeneous group (one representative location, cross-verification on the others)

Assumptions:

- Representative site: Site A (oldest).
- Full tree sampling at the representative site uses your rule of thumb: 33 trees/ha.
- Cross-verified sites (B, C) use a statistical verification subset (UNFCCC/FAO finite-population approach with common defaults):
  95% confidence, ±10% precision, CV≈25% → ≈24 trees per site (for large N, the required n ≈ constant).

Calculations

Trees per site:

- Site A: 50 ha × 825 = 41,250 trees
- Site B: 30 ha × 825 = 24,750 trees
- Site C: 20 ha × 825 = 16,500 trees

Representative site (full sampling):

- Site A: 50 ha × **33 trees/ha** = **1,650** trees to sample and tag

Cross-verified sites (verification subsets):

- Site B: ~24 trees
- Site C: ~24 trees

Use Site A's Year 1 growth as the benchmark to validate growth in Sites B and C.
Repeat for Year 2, ect., aligning each site's "Year X since planting"

Heterogeneous group (each site is its own monitoring unit)

Statistically derived per-site sample (UNFCCC/FAO defaults)
With 95% confidence, ±10% precision, CV≈25%, the minimum tree sample converges to ~24 trees per site for large N.