This PDD is open for **public consultation**. This PDD has not yet undergone a full review, is not approved under the Plan Vivo Standard, and does not represent the final version of the PDD if the project eventually successfully registers. This is an opportunity for anyone to give their feedback on anything, including but not limited to the appropriateness of:

- The interventions
- Carbon benefit quantification
- Community engagement and FPIC process
- Coordinating body and governance structures
- Carbon and land rights
- Monitoring plans and indicators
- Environmental and social risks and safeguards

This feedback is then considered by the validation team during the validation process.

For more information on the review and certification processes, please consult the Plan Vivo Procedures Manual.

Please submit any feedback to projects@planvivofoundation.org

Public consultation opening date: 25th May 2026

Public consultation closing date: 22nd June 2026

PV CLIMATE

PROJECT DESIGN DOCUMENT

Ardhi Njema Agroforestry

Central Kenya

Version 1.3
12th May 2026

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Enter details of Validation and Verification Body that validated the project

Overview 3
1. General Information 4
1.1 Project Interventions 4
1.2 Management Rights 7
2. Stakeholder Engagement 10
2.1 Stakeholder Analysis 10
2.2 Project Coordination and Management 14
2.3 Project Participants 15
2.4 Participatory Design 16
2.5 Stakeholder Consultation 18
2.6 Free, Prior and Informed Consent (FPIC) 23
3. Project Design 26
Baselines 26
3.1 Baseline Scenario 26
3.2 Carbon Baseline 29
3.3 Livelihood Baseline 31
3.4 Ecosystem Baseline 34
Theory of Change 35
3.5 Project Logic 35
Technical Specification 37
3.6 Project Activities 38
3.7 Additionality 39
3.8 Carbon Benefits 39
Risk Management 40
3.9 Environmental and Social Safeguards 40
3.10 Achievement of Carbon Benefits 43
3.11 Reversal of Carbon Benefits 43
3.12 Leakage 46
3.13 Double Counting 46
Agreements 46
3.14 Land Management Plans 46
3.15 Crediting Period 47
3.16 Benefit Sharing Mechanism 47
3.17 Grievance Mechanism 47
3.18 Project Agreements 49

4. Monitoring and Reporting 49
Indicators 49
4.1 Progress Indicators 49
4.2 Carbon Indicators 50
4.3 Livelihood Indicators 51
4.4 Ecosystem Indicators 52
Monitoring 52
4.5 Monitoring Plan 52
4.6 Progress Monitoring 53
4.7 Carbon Monitoring 55
4.8 Livelihood and Ecosystem Monitoring 55
Reporting 58
4.9 Annual Report 58
4.10 Record Keeping 58
5. Governance and Administration 58
5.1 Governance Structure 58
5.2 Equal Opportunities 59
5.3 Legal and Regulatory Compliance 59
5.4 Financial Plan 61
5.5 Financial Management 61
Annexes 62
Annex 1 – Project Boundaries 62
Annex 2 –Registration Certificate and Partner Agreements 62
Annex 3 – Initial Project Participants 62
Annex 4 –Participatory Design 63
Annex 5 – Initial FPIC 66
Annex 6 – Carbon Calculations Spreadsheet 66
Annex 7 – Technical Specifications 66
Annex 8 – Exclusion List 77
Annex 9 - Environmental and Social Screening Report 80
Annex 10 – Environmental and Social Assessment Report 101
Annex 11 – Land Management Plans 104
Annex 12 – Project Agreements 111
Annex 13 – Monitoring Plan 112
Annex 14 – Project Database 116
Annex 15 – Letter of Approval 117

Annex 16 – Financial Plan 118

Annex 17 - Anonymous Complaints Workflow 118

Overview

Project Title:	Ardhi Njema Agroforestry
Location:	Central Kenya (Nyeri, Laikipia, and Kirinyaga counties).
Version:	1.3
Project Coordinator:	Name: Green Earth Climate Action (GECA) Website: Green Earth Climate Action (GECA) Phone no: +1 (610)-551-8801 Email address: larisa@gecaction.org
Validator:	Enter name and contact details for validator.
Validation Date:	Enter date of validation.
Project Intervention(s):	***Restoration*** through agroforestry for soil restoration, and ***Improved Land Management*** through sustainable agricultural land management (SALM). A full list of project interventions is provided in §3.6
Project Participants:	The project initially works with 600 smallholder farmers with potential to scale to 60,000 smallholder farmers in existing agricultural supply chains in Central Kenya. The project will train these farmers on sustainable agroforestry practices that enhance the sequestration of carbon above and below the ground, increase soil productivity, conserve the environment, and earn extra income from the sale of carbon credits.
Project Area:	The project works with 600 smallholder farmers in Nyeri, Kirinyaga, and Laikipia Counties in Central Kenya, with each farmer contributing an average of one (1) acre for the project activities. The project aims to scale up to 30,000 ha within the same counties.
Project Period:	20 years
Methodology:	The project follows Agriculture and Forestry Carbon Benefit Assessment Methodology (PV Climate PM001).
Expected Carbon Benefit:	The trees planted act as a carbon sink, aiding in climate change mitigation by capturing and storing atmospheric carbon dioxide (CO_2). With a baseline of 600 farmers, each to plant an average of 100 trees, the project will sequester ~2,000 tCO_2e/yr (approximately 2,000 tons of carbon dioxide equivalent per year). We expect this to grow to 60,000 farmers with 6 million trees and a projected sequestration potential of >1$MtCO_2e$ in the next 20 years.
Expected Ecosystem Benefit:	The integration of trees with crops improves soil health and water retention, enhancing a resilient and sustainable ecosystem. Similarly, the diverse plant species promotes biodiversity by creating micro-habitats for various organisms and enhancing the overall ecosystem stability.
Expected Livelihood Benefit:	Crop diversification will lead to improved yields, thus promoting food and nutritional security. The farmers can also sell the surplus to earn additional income and earn from the sale of carbon credits when certified. Fruit trees will provide produce for sale in the market and enhance diet diversity for the farming families. The sustainable management of agroforestry systems and SALM activities also provide a long-term source of livelihood by merging economic productivity with environmental conservation.

	Further, the project empowers local communities through training initiatives, building capacity for effective agroforestry and SALM practices and ensuring long-term sustainability beyond the project cycle. The combination of these additional attributes could potentially contribute to such additional income streams like apiculture, which will be encouraged but not covered as part of this project.

1. General Information

1.1 Project Interventions

The project covers two intervention types - *Restoration* (of soil) and *Improved Land Management*. Under restoration, the project focuses on soil restoration through planting of native tree species, including *Markhamia Lutea*, *Vitex keniensis*, and *Croton megalocarpus*, within the agroforestry systems. This planting aims to counteract land degradation and promote ecosystem rehabilitation, fostering a more resilient sustainable agroecosystem. Similarly, SALM practices such as mulching, crop rotation, cover crops, terracing, and composting help restore soil fertility by improving physiochemical and biological properties.

This restoration of soil has three key benefits:

i) **Climate** – Agroforestry trees act as carbon sinks, which plays a key role in mitigating climate change. On the other hand, SALM practices contribute positively to carbon sequestration in soil. The increased vegetation cover also creates microclimates which spread out across the community.

ii) **Livelihood** – Marketable products from the trees, such as *Croton megalocarpus* nuts, provide additional sources of revenue. Similarly, SALM practices lead to increased farm productivity hence securing food and income for farmers.

iii) **Ecosystem** – The project fosters biodiversity and ecological balance by integrating native tree species. This promotes the conservation of flora and fauna, creating healthier ecosystems that support pollinators and natural predators.

Under improved land management, the project mainly focuses on agroforestry and the strategic planning and design of agroforestry systems. First, the project creates agroforestry systems through border planting, alley planting, and woodlots. There is also the potential to carry out intercropping for the non-cereal agronomic systems. Over 80% of farmers in the project prefer border planting, with the border trees acting as buffer zones to safeguard the agricultural and silvicultural components from external threats, as well as mark boundaries between farms and farm segments. This agroforestry system helps to mitigate the impacts of pollution, pesticide drift, encroachment, and other potential hazards.

Fig 1.1.1: Over 80% of the farmers in the project prefer border planting.

Other benefits of this intervention include:

i) **Climate** – The buffer zone contributes to climate resilience by protecting against adverse weather events such as extreme temperature fluctuations and windstorms. The established trees also aid in carbon sequestration, contributing to climate change mitigation efforts.
ii) **Livelihood** – By protecting crops from external stressors, the buffer zone helps maintain stable yields, securing the livelihoods of smallholder farmers. This intervention reduces the risk of crop loss due to soil erosion, pollution, windstorms, and extreme temperatures, ensuring a more consistent income for local communities.
iii) **Ecosystem** – Establishing boundary trees enhances the overall ecosystem health by preserving biodiversity and creating habitats and biodiversity islands for beneficial organisms such as bees. The protective barrier mitigates the spread of pests and diseases, contributing to the resilience of the agroforestry system and promoting sustainable coexistence between agriculture and the surrounding environment. Further, the buffer trees help to prevent pesticide drift, which helps to safeguard the integrity of organic farms.

Further, the project focuses on the strategic planning and design of agroforestry systems for farmers to optimize the utilization of land resources. The project employs a careful consideration of the arrangement and combinations of tree and crop species, aiming to maximize synergies within the agroecosystem. As a result, this reduces nutrient and water competition between crops and trees while enhancing overall stability.

Fig 1.1.2: The project also focuses on strategic planning and design of agroforestry systems for farmers to optimize the utilization of land and resources while reducing the competition for water and nutrients between crops and the trees.

The project also encourages farmers to plant agroforestry-friendly trees such as *Grevillea robusta* and *Moringa oleifera*.

Grevillea robusta has several benefits, some of which include:

- *Grevillea robusta* is a naturalized species in Kenya[1] and an excellent agroforestry tree due to its rapid growth, soil improvement capabilities, and drought tolerance. It enhances soil structure, prevents erosion, and contributes to nutrient cycling through its leaf litter.
- The tree provides valuable shade and a shelter for crops and livestock, acts as a windbreak, and supports biodiversity by attracting pollinators.
- Its resilient nature against pests and diseases makes it a versatile and beneficial choice for sustainable agroforestry systems.
- The tree has the potential for sale upon maturity, generating income.

The project will also offer training to farmers in the following areas:

i) Introduction to the carbon project, including a deep dive into the carbon cycle and anthropogenic drivers of emissions.
ii) Agroforestry systems, including an exploration of methods, types, and benefits.
iii) SALM systems, covering both theoretical and practical examples. These will include capacity building towards carrying out these interventions on-farm.
iv) Carbon benefit sharing, including financial issues, responsibilities, and bundled values for man and nature. This will also include GHG reduction and abatement systems.
v) Diverse micro-enterprises, such as community seedling, apiaries, village savings, and loan schemes.

[1] Kenya Forestry Research Institute (KEFRI), 2014 - https://www.kefri.org/assets/publications/extension/Grevillea%20Robust%20in%20Kenya.pdf

Fig 1.1.3: Farmer training on agroforestry systems in Laikipia County.

These trainings aim to create enablers in the community for enhanced participation in the project, toward establishing self-driven initiatives that farmers can own and invest in.

The benefits of this strategic planning and design of agroforestry systems include:

i) **Climate** – Optimized agroforestry planning which contributes to climate resilience by creating a balanced and diversified landscape. Such systems help regulate microclimates, reducing temperature extremes, and minimizing the risk of climate-related crop failures. Similarly, the enhanced carbon sequestration potential of the project design aids in climate change mitigation.

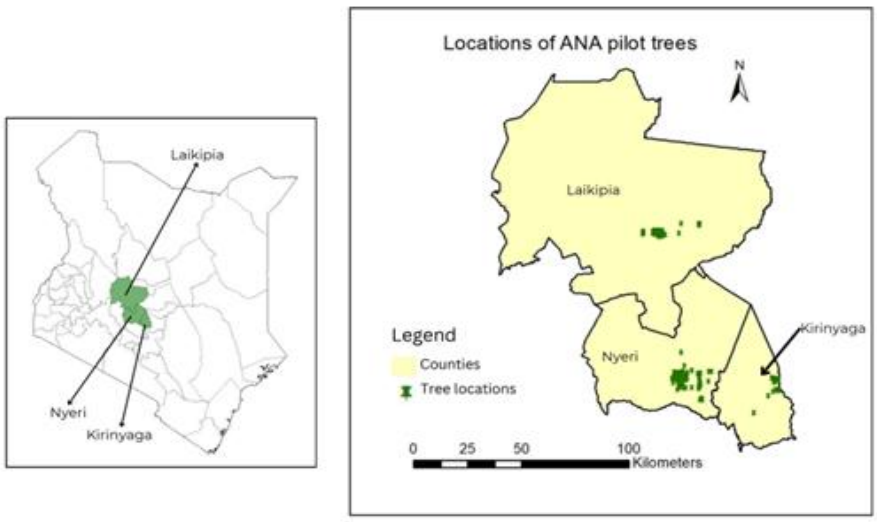
ii) **Livelihood** – This agroforestry and SALM practices directly impact livelihoods by increasing the overall farm productivity and income opportunities. This leads to enhanced economic resilience and reduced vulnerability of smallholder farmers to environmental uncertainties.

iii) **Ecosystem** – The intervention also promotes ecosystem health by optimizing the use of natural resources and minimizing negative environmental impacts. Efficient water and nutrient management contribute to improved soil health, benefitting both agricultural productivity and the surrounding ecosystems. The integration of native species fosters biodiversity, creating habitats for beneficial organisms and promoting ecological balance within the farm setting.

1.2 Management Rights

1.2.1 Project Boundaries

In Annex 1, we present the layer files showing the boundaries of the project regions and the initial project areas.



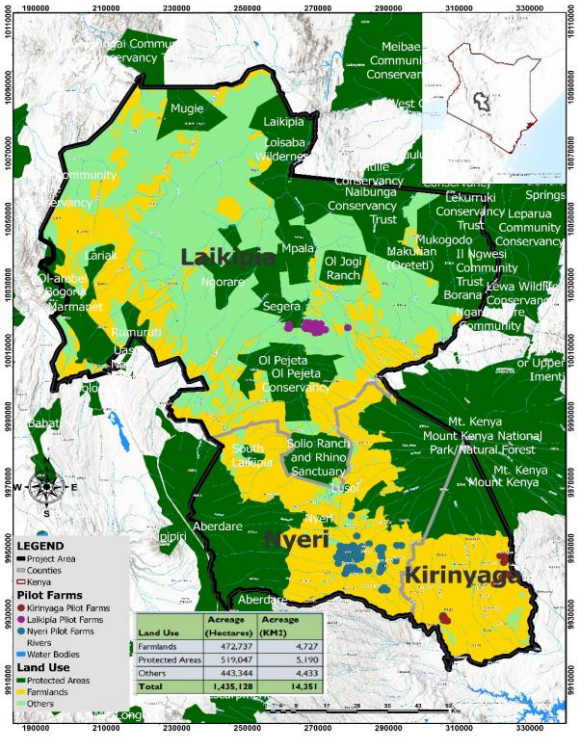


Figure 1.2.1 - ANA's project areas.

1.2.2 Land and Carbon Rights

1.2.2.1 National Framework

The average landholding in Central Kenya ranges from 0.5 to 2 hectares[2]. Kenya operates under a formal land tenure system that recognizes individual freehold tenure, primarily governed by the Land Act of 2012 and the Land Registration Act of 2012[3,4]. These laws grant landowners the right to

[2] Agricultural Enterprise and Land Management in the Highlands of Kenya. https://www.cifor-icraf.org/publications/downloads/Publications/PDFS/BC06271.pdf

[3] The Land Act of Kenya, 2012. http://www.parliament.go.ke/sites/default/files/2017-05/LandAct2012.pdf

[4] The Land Registration Act No. 3 of Kenya, 2012. Cap. 280

use, enjoy, and transfer their land indefinitely, provided they comply with national and county regulations.

Section 5 of The Land Act provides for different forms of land tenure, including freehold, leasehold, easements, and customary land rights. The project recognizes individual freehold tenure which provides the smallholder farmers with the unlimited right to use and dispose land in perpetuity subject to the rights of others and the regulatory powers of the national government, county government, and other relevant state organs.

Under the Physical and Land Use Planning Act (2019) and the County Governments Act (2012), counties regulate spatial planning, land subdivision, and land-use changes within their jurisdictions. The project lands are compliant with these laws and have valid freehold titles under the Land Registration Act (2012).

1.2.2.2 County-Level Frameworks

All project sites lie within Nyeri, Kirinyaga, and Laikipia counties. Each of these counties applies national land laws alongside its own land-use and spatial planning frameworks that ensure sustainable and lawful use of land. These are summarized in Table 1.2.2 below.

Table 1.2.2 Land and Carbon Rights

Project Area	Relevant Frameworks	Key provisions for Freehold Land	Carbon rights	Implications
Nyeri	*-County Spatial Plan 2020-2030* *-Land Planning & Survey Policy (2020)* *-Physical and Land Use Planning Act (2019)*	-Land is predominantly freehold. -Zoning regulates agriculture, forestry, and settlement. -Land rates must be up to date	Carbon rights are vested on the titled landowner, subject to the general regulatory powers of the State.	-Project activities must align with the County Spatial Plan. All -participating farmers will maintain compliance with zoning, rates, and planning permissions.
Kirinyaga	*-Annual Development Plan 2023/2024* *-Ten Year Land Use Development Plan for Informal Settlements (2023)* *-County Governments Act (2012)*	-County regularizes tenure for colonial villages and informal settlements. -Planning department enforces zoning and development control. -Land rates and rent compliance are mandatory.	Carbon rights are vested on the titled landowner, subject to the general regulatory powers of the State.	-Project will involve titled land owners only. -All plots are verified under county-approved land use plans. -Agroforestry and carbon sequestration falls under permitted agricultural land uses
Laikipia	*-County Spatial Plan (2023)*	-Tenure includes freehold, group	Carbon rights are vested on the titled landowner,	-Project operates only on titled freehold farms.

	-Subdivision and Land-Use Guidelines *-Digitization of Land Records Initiative*	ranches, and leaseholds. -Minimum subdivision sizes and public land surrender apply. -Spatial plan identifies wildlife corridors and conservation zones.	subject to the general regulatory powers of the State.	-Land use activities align with agricultural and conservation zoning.

We implement this project with smallholder farmers in Nyeri, Kirinyaga, and Laikipia, where land tenure is predominantly freehold. Farmers enrol in the project through a voluntary declaration of land ownership. Before registration, ANA ensures that all participants understand the land tenure requirements. Only farmers with absolute ownership, evidenced by land title deeds, or those who have inherited land and are in the process of obtaining title deeds are eligible for enrolment.

2. Stakeholder Engagement

2.1 Stakeholder Analysis

2.1.1 Stakeholder Identification

After conducting desk analysis, we invited the relevant stakeholders that could influence or be affected by the project. Separate community engagement meetings were held in each of the three project counties as follows: Kirinyaga (13th May 2025), Nyeri (15th May 2025), and Laikipia (19th May 2025). These meetings are the same ones evidenced in Annex 4, with attendance sheets provided in Annex 5.

The aim of these meetings was to ensure broad participation and clarify each stakeholder's expected role within the project. As the main local stakeholders, the smallholder farmers will participate at the farm level by planting and maintaining trees supplied by the project. They are expected to benefit through improved soil fertility, enhanced land management, and increased household income, as outlined in Section 1.1. The local authorities, represented in the meetings by chiefs and sub-chiefs, play an important role as well. Even though they are indirectly impacted by the project, their influence is significant as they help mobilize community members, encourage participation in project activities, and support local governance processes that ensure smooth project implementation.

The National Environmental Management Authority (NEMA) provided their insights as the Designated National Authority. NEMA ensures compliance with environmental regulations, and their role includes reviewing the project's Environmental Impact Assessment and providing the project's continuation based on environmental performance standards. Finally, representatives from the county governments of Nyeri, Kirinyaga, and Laikipia attended through their respective Departments of Gender and Social Services, and Agriculture and Fisheries. Their participation ensures that the project remains aligned with county development priorities and complies with both sub-national and national legislation. These counties also play a coordinating role in linking the project to wider environmental and agricultural initiatives at the local level.

Key community institutions supporting project delivery include Community Forest Associations (CFAs) and Common Interest Groups (CIGs), which will support inclusive participation, local coordination, and sustained engagement through annual community meetings and FPIC processes.

We have completed Table 2.1.1 to identify and describe these stakeholder groups that could influence or be affected by the project, and explain the relationship of each stakeholder to the project.

Table 2.1.1 Stakeholder Analysis

Stakeholder group	**Stakeholder type**	**Impact**	**Influence**	**Engagement**
Participating smallholder farmers (Nyeri, Kirinyaga, and Laikipia counties)	Participants/ Beneficiaries	Highly positively impacted by the project, as the project will result in improved soil fertility, increased food security, and income.	High positive influence on the project as they will be the key implementers of the project through planting trees and maintaining the trees on their farms.	Involvement through project participation, workshops, training in agroforestry and benefit sharing.
Seedling suppliers	Local stakeholder	Highly positively impacted by the project as the quality of the seedlings delivered determines the survival rates of the trees.	High positive influence on the project as they will provide quality tree seedlings to be planted by the farmers.	Involvement through project participation and delivery of quality seedlings to farmers.
Community Forest Associations	Local stakeholder	Highly positively impacted by the project through strengthened community capacity, improved environmental conservation, and increased livelihood opportunities for members participating in agroforestry interventions.	High positive influence on the project as CFAs provide mobilization channels, community coordination, and support for effective implementation of tree planting and monitoring	Engagement through annual community meetings, training and sensitization sessions, mobilization of members for project participation, distribution support (where applicable), and continuous

			activities within member farms.	coordination with field staff and community liaisons.
Common Interest Groups	Local stakeholder	High positive (increased access to training, improved implementation, aggregation for markets, improved inclusion)	Medium (implementation performance, adoption rates, peer accountability)	Training delivery channel, peer learning, monitoring support, inclusion & benefit-sharing communication (especially for women/youth/PWDs)
County Governments – Nyeri, Kirinyaga, and Laikipia.	Secondary stakeholder	Medium positively impacted by the project as the county governments do not directly benefit from the project interventions, but the livelihoods of the people in the regions will rise, which is beneficial for the county economy in general.	High positive influence on the project as the approval of the county governments ensures that the project is in alignment with all the sub-national and national laws.	Involvement through operation agreements: letter of approval for agroforestry project with farmers from each County.
National Environmental Management Authority (NEMA) - Designated National Authority (DNA)	Secondary stakeholder	Medium positively impacted by the project as they will need to access the project's Environmental Impact Assessment (EIA) report.	High influence on the project as the outcome will determine if the project activities should continue or not.	Engagement through fieldwork activities and field assessments of the project area.
Local Authorities (Sub-chief, chiefs)	Secondary stakeholder	Low positively impacted by the project.	High positive influence on the project.	The local authority plays a key role in the project through promoting community participation in development

				projects, engaging communities in the decision-making process, and facilitating development initiatives.
University Institutions such as Dedan Kimathi and Karatina University	Secondary stakeholder	Moderate positively impacted by the project with increased opportunities to execute research and collect data in the field.	High positive influence on the project, as the scientific advice on agroforestry systems and tree species will increase the ecological value and success of the project	Involvement through scientific advice on eligible tree species, and agroforestry systems
Government Agencies (KEFRI and KARLO)	Secondary stakeholder	High positive impact.	High positive influence on the project.	Involvement through scientific advice and certification of tree nurseries for quality seeds.

2.1.2 Indigenous Peoples and Local Communities

Table 2.1.2: Indigenous Peoples and Local Communities

Indigenous Peoples or local communities	Rights to land or resources in the project area(s)	Governance structure	Involvement of women and marginalised groups	Engagement
Smallholder farmers and their families	Hold freehold title deeds or customary rights (evidenced by voluntary declarations and attestation by local chiefs)	Community decision-making is generally led by male household heads, with emerging women and youth groups supporting	Women, widows, youth, and PWD are included; Specific measures include annual inclusive training sessions in each county, conducted in partnership with County Departments of Gender and Social Services, to promote family-wide participation and equitable benefit sharing. Attendance of women and youth is	Engaged through chief barazas, farmer group meetings, and individual consultations during registration

		decision processes.	emphasized through targeted SMS communication and community mobilization. The project also ensures non-discrimination and encourages active participation of PWDs.	

Although household decision-making in the project areas is traditionally led by male heads, the project has introduced several measures to strengthen the inclusion of women, widows, youth, and PWDs. Annual capacity-building trainings will be held at accessible locations in each county, in collaboration with county departments of gender and social services, to promote inclusive participation and equitable benefit sharing within households. The project emphasizes family-wide engagement, encouraging women and youth to actively contribute to decision-making and income use. Targeted communication, including SMS reminders before trainings, will ensure strong representation of these groups. The project further maintains non-discrimination and proactively supports the participation of PWDs in all project activities.

2.1.3 Disputed Land or Resources

There are no past or ongoing disputes over land or resources in the project areas.

2.2 Project Coordination and Management

Ardhi Njema Agroforestry is a registered Community Based Organization (CBO) in Kenya that implements projects that helps farmers restore their farm productivity whilst contributing to climate change adaptation and mitigation efforts. ANA will be responsible for coordinating and implementing the project. At the local level, ANA's team has experience in implementing farmer development projects and conducting extensive on-farm research, including in-depth analysis of farming practices, opportunities, challenges, and household surveys on food security. A copy of ANA's registration certificate can be found in Annex 2.

ANA is affiliated with a US registered non-profit organization, Green Earth Climate Action (GECA), that provides financial support and oversight. GECA will provide funding for the project.

The project coordination and management functions of the project participants are summarised in Table 2.2.

Table 2.2 Responsibility for Project Coordination and Management Functions

Project Coordination and Management Function	**Responsible Party/Parties**
Stakeholder engagement during project development and implementation	ANA
Ensuring conformance with the Plan Vivo Standard and compliance with applicable policies, laws and regulations	ANA
Developing technical specifications, land management plans and project agreements with project participants	ANA
Ensuring that the PDD is updated with any changes to the project	ANA and GECA
Registration and recording of management plans, project agreements, monitoring results, and sales agreements	ANA and GECA
Managing project finances and dispersal of income to project participants as described by the benefit sharing mechanism	GECA

Managing Plan Vivo Certificates in the Plan Vivo Registry	GECA
Preparing annual reports and coordinating validation and verification events	ANA
Securing certificate sales and other means of funding the project	ANA and GECA
Assisting Project Participants to secure any legal or regulatory permissions required to carry out the project	ANA
Providing technical assistance and capacity building required for project participants to implement project interventions	ANA
Monitoring progress indicators, livelihood indicators and ecosystem indicators and providing ongoing support to project participants	ANA
Measurement, reporting and verification of carbon benefits	ANA

2.3 Project Participants

We completed Table 2.3 to identify the initial and potential project participants and describe their location of residence in relation to the project areas and project region, their use of land or natural resources within the project region and their typical land and natural resource management.

At the initial stage, the project has enrolled ~600 smallholder farmers across the counties of Nyeri, Kirinyaga, and Laikipia, with plans to scale up to 60,000 farmers over the next ten years. The average farm size for smallholder farmers varies by region, typically 1.5–2 acres in Nyeri and Kirinyaga, and 2–5 acres in Laikipia. These farmers represent a mix of subsistence and semi-commercial producers whose livelihoods depend heavily on agriculture and the surrounding natural resources.

Most participating farmers operate at the subsistence level, producing food primarily for household consumption and selling the surplus in local markets. Major crops grown include maize, beans, bananas, tea, coffee, Irish potatoes, sweet potatoes, and arrowroots. In addition to farming, some households supplement their income through small businesses, professional occupations, or pensions, providing a modest level of economic diversification.

The project is expected to have a significant positive impact on these farmers. By promoting agroforestry systems that integrate diverse tree species within farmlands, the project will enhance soil fertility, structure, and water retention, while contributing to biodiversity restoration. The introduction of Sustainable Agricultural Land Management (SALM) and Sustainable Land Management (SLM) practices will further support the conservation and regeneration of natural resources. Farmers will be trained in techniques such as minimum tillage, mulching, integrated pest management, and soil nutrient management, improving productivity and long-term soil health. The project also provides farmers with an additional source of revenue through benefit-sharing from carbon credits generated by agroforestry systems.

From the engagements held in all three counties, the participating farmers have shown strong enthusiasm and support for the project. They recognize the impacts of climate change on their livelihoods and view the project as an opportunity to restore degraded farmland, increase resilience, and generate supplementary income.

To ensure effective coordination and equitable participation, each project region has a lead farmer who acts as a liaison between the project proponent and the participating farmers. These lead farmers, in collaboration with local authorities, help organize meetings, mobilize participants, and communicate project updates. This governance structure ensures that local voices are represented and that the project remains inclusive and community-driven.

Table 2.3: Project Participants (grouped by village, area or region)

Project Participant	Participant Type*	Location of Residence	Typical Land Holding	Land and Natural Resource Use
Nyeri County	Type I	The smallholder farmers reside in Nyeri County within the county's five constituencies: Mathira, Mukurweini, Othaya, Tetu, Kieni, and Nyeri Town.	Average farm size for smallholder farmers in Nyeri County is 1.5 - 2 acres[2].	Nyeri County is a predominantly agricultural county, with >70% of the population dependent on agriculture. The main food crops grown are maize, beans, Irish potatoes and vegetables. The cash crops grown include coffee, tea, horticultural crops, and cut flowers.
Kirinyaga County	Type I	The smallholder farmers reside in Kirinyaga County within three constituencies: Mwea, Gichugu, and Ndia.	Average farm sizes in Kirinyaga county range between 1.5 - 2 acres [2].	Kirinyaga is known for cash crop farming, including coffee, tea, and horticultural crops. Food crops include maize, rice, and bananas.
Laikipia County	Type I	The smallholder farmers reside in two constituencies of Laikipia County: Laikipia East and Laikipia West.	Most of the small holding land within Laikipia county is 2-5 acres [2].	Most of the small-scale farmers here practice subsistence mixed farming with rain-fed crop cultivation and livestock farming.

* Type I = Project Participants that are resident within the Project Region; who manage and use land or natural resources within the Project Region for subsistence or small-scale production; and are not structurally dependent on year-round hired labour for their land or natural resource management activities; Type II = Project Participants that do not meet the Type 1 definition.

2.4 Participatory Design

Prior to implementing the project, ANA and GECA engaged various farmers in the development of project interventions. These engagements included mobilizing the farmers through community outreach meetings in the targeted constituencies and villages. The initial community meetings served as a platform for project sensitization, introducing the farmers to the objectives and scope of the project. Farmers then voluntarily expressed interest in adopting agroforestry practices on their farms.

Following the expression of interest, with the farmers meeting the land rights requirement, they then registered for the program, subsequently participating in an intensive agroforestry design training. Throughout the training, the farmers delve into an intensive agroforestry design training that includes various agroforestry designs, discussing the challenges they face and potential solutions.

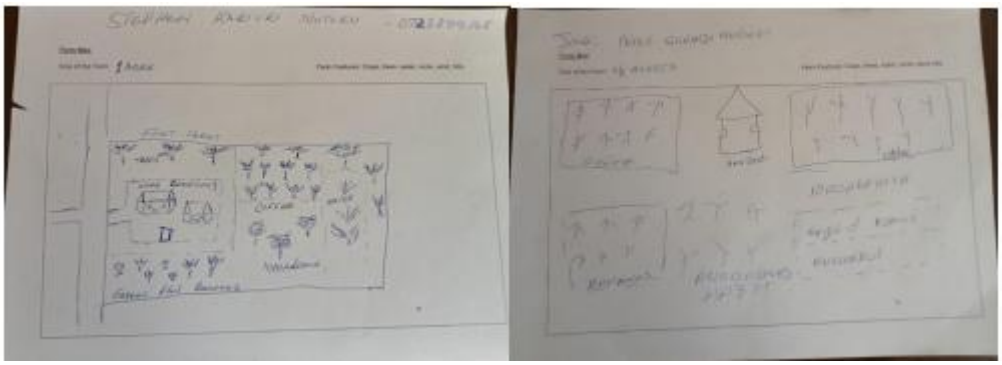


Fig 2.4.1: Sample of a farm map drawn by farmers during training. More evidence on this is in Annex 11.

The project began engaging pilot farmers across the initial project areas between 2020 and 2022, during which approximately 200 farms were mapped. This participatory mapping exercise enabled farmers to delineate their farm boundaries and identify existing land uses. The data collected provided valuable insights into average farm sizes, tree densities, and crop types, which in turn informed the overall project design.

Through this process, the project team was able to:

- Identify and recommend tree species compatible with existing crops, minimizing competition for light, water, and nutrients.
- Tailor technical advice on suitable agroforestry systems, such as border planting, alley cropping, and intercropping, to optimize both agricultural and ecological benefits.

Project participants receive insights into agroforestry designs, suitable tree species, and tree quantities from the guidance of a trained agronomist. These insights empower the participants to make informed decisions tailored to their farms. This collaborative process will involve collecting, analysing, as well as representing spatial data and will be used to identify and communicate farm development needs and support locating the agroforestry trees for optimizing production. As the project progresses, there will be continuous agronomic and silvicultural extension support to the farmers.

The participatory process exceeds initial training, incorporating a series of community meetings, workshops, and focus group discussions. These gatherings include diverse participants such as farmers, community leaders, local authorities, and representatives of marginalised groups based on gender, age, ethnicity, religion, and social status. These platforms facilitate open dialogues where participants express their concerns, aspirations, and priorities. Summaries of what was discussed in these meetings can be found in section 2.5.1.

To maintain ongoing support, we provide the enrolled farmers with a designated communication number, enabling direct interaction with the designated project coordinator via call or SMS. Integrating the *Telerivet* mobile communications system enhanced our ability to communicate with farmers effectively. This channel is also used for grievance resolution.

2.5 Stakeholder Consultation

2.5.1 Design Phase Consultations

Based on the identified stakeholders in the stakeholder analysis, we carried out stakeholder consultation aggregated by each county, and the findings and how they shaped the design of the project are presented in the tables below:

Kirinyaga County					
Consultations (place and date)	**Organizations represented and respective functions**	**Number of participants (disaggregated by gender)**	**Form/methodology of consultation**	**Issues discussed and outcomes of discussion**	**Response to issues raised including how they influenced project design**
Njukiini CFA headquarters - Kirinyaga County (13th May 2025)	Participating smallholder farmers, Kenya Forest Service (KFS) County of Kirinyaga - Department of Agriculture, Office of Gender and Social Services	16 participants (5 women, 11 men)	Focused Group Discussions	Farmers identified challenges including unpredictable rainfall, water shortages, human-wildlife conflict, limited credit access, and small land sizes, limiting large-scale agroforestry. They were positive about the project improving soil fertility, restoring forest cover, and generating additional sources of revenue. Concerns were raised about gender imbalances in land control, possible exclusion of youth and PWDs, and potential	The project encourages family-based participation and annual inclusive training, as per the recommendations of the county department of gender and social services. The benefit-sharing mechanism includes next-of-kin involvement in agreements. Gender and inclusivity safeguards were embedded in Section 2.1.2. The project will also include awareness sessions on equitable benefit distribution, safety around tree planting, and encourage access to clean energy technologies.

				household conflicts over benefit distribution. Recommendations included promoting inclusive participation, access to clean energy (biogas, solar), and training for marginalized groups.	
Mumbi Tree Nursery 13th May 2025	Seedling supplier - Mumbi Tree Nursery	1 participant (1 woman)	We paid a courtesy at her premises, where we interviewed her and filled out a survey.	Discussion on tree species selection, seedling quality, and waste disposal practices to minimize nursery and on-farm pollution.	The project species selection prioritizes locally adapted species suited to the Kirinyaga ecosystem, and encourages the supplier as well as project participants to adopt waste management protocols for nursery and planting operations.
County Government Headquarters - Kirinyaga County 13th May 2025	Department of Gender and Social Services	1 participant (1 woman)	We paid a courtesy call to the office of the department of gender and social services, Kirinyaga.	Discussed the inclusion of women and youth, noting that most households are male-headed with unequal benefit sharing where women and youth provide labor but do not receive proportional benefits	The project will integrate gender-awareness and family-benefit training into the annual training schedule. Provisions for household-level continuity in the event of the head-of-household's death or absence will be included, with the monitoring plan tracking gender participation rates.

Nyeri County					
Consultations (place and date)	**Organizations represented and respective functions**	**Number of participants (disaggregated by gender)**	**Form/methodology of consultation**	**Issues discussed and outcomes of discussion**	**Response to issues raised including how they influenced project design**
Tumutumu location, Mathira West	Participating smallholder farmers, local area chief and subchief, Department of social services	38 participants (28 female, 10 male)	Focused Group Discussion	Farmers raised issues of pests, limited farm resources, and confusion from overlapping carbon and agricultural projects. They highlighted household conflicts over benefit sharing, male-dominated land control, and lack of measurement clarity for carbon credits. Participants appreciated positive outcomes such as increased rainfall, biodiversity restoration, and higher honey yields.	The project introduced Integrated Pest Management (IPM) to reduce chemical use and leverage indigenous pest control. To address conflict risks, household-level training on equitable participation and transparent benefit-sharing will be conducted annually. The project also established a non-duplication protocol: farmers must sign a declaration of non-participation in other carbon projects, verified through lead farmers and local administration.
County Director's Office - NEMA	NEMA	1 participant (1 woman)	We paid a courtesy call to the office of the NEMA director of Nyeri county at her office as she was unable to attend the focused group discussion due to other commitments.	Risk of overlapping carbon projects in the region.	Farmers will be sensitized to commit to one project only. Non-compliance results in termination of participation under this project.
Laikipia County					

Consultations (place and date)	Organizations represented and respective functions	Number of participants (disaggregated by gender)	Form/methodology of consultation	Issues discussed and outcomes of discussion	Response to issues raised including how they influenced project design
Segera Village, Laikipia North Subcounty	Smallholder farmers, local chief's representative	39 participants (15 female, 24 male)	Focus Group Discussion	Key issues included human-wildlife conflict (elephants, hyenas), water scarcity, saline water, land conflicts, pest infestations, and overgrazing damaging trees. Participants also raised gender inequality and household decision-making dominance by men. Recommendations included better compensation mechanisms, training, and rainwater harvesting.	The project will collaborate with Kenya Wildlife Service (KWS) and county authorities to design wildlife conflict safeguards. Water harvesting systems (tanks and gutters) will be promoted for resilience. Training modules will include gender inclusion, IPM, and climate-smart farming.
County Director's Office – NEMA	NEMA	1 woman	We paid a courtesy call visit to the office of the county NEMA director, Laikipia county as she was unable to attend the focused group discussion due to other commitments.	Discussion on licensing requirements under carbon project regulations, specifically whether a single or multi-county licence is needed.	The project confirmed that a single NEMA licence covers all three counties under current regulations, but will continue to engage NEMA experts to maintain compliance with future carbon regulation updates.
County Government HQ – Laikipia	Department of Agriculture, Livestock &	1	We paid a courtesy call to the county's department of	Discussed pest invasion, seedling quality,	The project will organize quarterly training on tree

	Fisheries		agriculture, livestock, and fisheries.	land availability, and gender and cultural issues. Officials cautioned against excessive tree density per farm, and encouraged the project to promote AI-driven agroforestry monitoring	management, food security balance, safe agrochemical use, gender inclusion, and equitable benefit sharing.

2.5.2 Stakeholder Engagement Plan

Stakeholder engagement in Kenya follows legal and cultural protocols, beginning with administrative authorities and extending to community groups and individual farmers. Engagement starts with the local chief, who introduces the project to county, sub-county, and ward officials. This is done through an introductory letter, email, or formal meetings, with sample project awareness material in Annex 4. These engagement processes have already been initiated across the project areas during the project design phase and most recently through the Environmental and Social Assessment (ESA) stakeholder consultations. Consultations were conducted with administrative authorities, farmers (current and prospective), seedling suppliers, and relevant county stakeholders in all three counties (Nyeri, Kirinyaga, and Laikipia). Overall, stakeholder response to the project concept and proposed interventions has been strongly positive, with participants expressing support for agroforestry and SALM activities, while also raising practical implementation considerations (e.g., intra-household benefit sharing concerns in Nyeri, tree species suitability and waste disposal in Kirinyaga, and human–wildlife conflict considerations in Laikipia). These issues have been integrated into project activity design and mitigation planning, including inclusive trainings (Activity 3.3), continued FPIC and engagement processes (Activity 3.4), and ESMP measures. Further detail is provided in Annex 10 (Environmental and Social Assessment Report). In some regions such as Laikipia, the endorsement of the village elder is also sought before engaging community members.

The project, through annual community meetings, then engages with farmers and local groups at neutral locations throughout each project region through established networks which include Community Forest Associations (CFAs) and Common Interest Groups which are both registered under the County Department of Youth, Gender, and Social Services. These groups, typically comprising about 25 members with elected leadership, are consulted in meetings facilitated by field staff and community liaisons. The project also aims to involve, to the best of its ability, women, youth, and disabled members of the communities in the project activities. This will be done through training, and prior communication made before the meetings take place, encouraging project participants to come accompanied by female household members and youth. These meetings will encourage the inclusion of women, youth, and disabled members of the community to participate in the project activities. The participation numbers will be tracked on an annual basis to track the effectiveness of the training and sensitization.

The project will also produce posters, leaflets, a website, and regular project updates to inform stakeholders of the project activities and progress. A sample leaflet can be found in Annex 4. These materials will be shared with farmer groups, administrative offices, and the general public.

In addition to formal consultations, the project welcomes informal feedback through monthly field visits, WhatsApp communication, and feedback during community events. For concerns and or complaints, stakeholders and project participants may use the established Grievance Redress Mechanism outlined in Section 3.17.

2.6 Free, Prior and Informed Consent (FPIC)

2.6.1 FPIC Legislation

Table 2.6.1: National Legislation and International Standards on FPIC

Legislation/ Standard	Relevance to Project	Compliance Measures
The Climate Change Amendment Act of 2023[5]	Article 23A (Carbon markets) provides regulations, with emission credits not taken into account including the emissions that have been achieved in violation of human rights and without free prior informed consent. Further, Article 23E.5 recognizes that a community development agreement shall include provisions of the following: [...](d) the sharing of the benefits from the carbon markets and carbon credits between the project proponents and the impacted communities.	Participation in the project is voluntary, with smallholder farmers consenting to using their farms to carry out the project activities.
UNDRIP	Article 8.2. One shall provide effective mechanisms for prevention of, and redress for: [...] (b) Any action which has the aim or effect of dispossessing them of their lands, territories, and resources; (c) Any form of forced population transfer which has the aim or effect of violating or undermining any of their rights;	The project recognizes that participating farmers have the right to the project lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired. The farmers have the right to own, use, develop, and control the project lands, territories, and carbon benefits in line with the project agreements.
ILO 169	Article 6.1. In applying the provisions of this Convention, one shall: (a) consult the peoples concerned, through appropriate procedures and in particular through their representative institutions, whenever consideration is being given to legislative	The project recognizes that participating farmers have the right to the project lands, territories and resources which they have traditionally owned, occupied or otherwise used or

[5] The Climate Change Amendment Act, 2023.
https://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/2023/TheClimateChange_Amendment_Act_No.9of2023.pdf

	or administrative measures which may affect them directly; (b) establish means by which these peoples can freely participate, to at least the same extent as other sectors of the population, at all levels of decision-making in elective institutions and administrative and other bodies responsible for policies and programmes which concern them; (c) establish means for the full development of these peoples' own institutions and initiatives, and in appropriate cases provide the resources necessary for this purpose.	acquired. The farmers have the right to own, use, develop, and control the project lands, territories, and carbon benefits in line with the project agreements. All consultations carried out are undertaken in good faith and in a form appropriate to the circumstances, with the objective of achieving agreement or consent to the project.

2.6.2 FPIC Process

In Plan Vivo Projects, the term FPIC is used to describe the principles for the negotiation of conditions under which a Project is designed, implemented, monitored, and evaluated:

- **Free** = consent is given voluntarily and without coercion, intimidation, or manipulation.
- **Prior** = consent is sought sufficiently in advance of any authorization or commencement of activities to allow time to understand, access, and analyse information on the proposed activity.
- **Informed** = information provided prior to seeking consent is accessible, objective, and complete.
- **Consent** = a collective decision ("Yes", "No", or "Yes with conditions") made by the rights-holders following their own timelines and decision-making processes with the option to reconsider if the proposed activities change or if new information relevant to the proposed activities emerges.

The FPIC process ensures active involvement of the farmers with statutory or customary rights to land or resources in decision-making, comprising a series of transparent and inclusive steps that empower farmers to negotiate the terms governing the project's design, implementation, monitoring, and evaluation. Photographic evidence of the initial trainings and community engagements is provided in Annex 5.

The following are the key aspects of the FPIC for this project:

i) **Project Introduction and Awareness Sessions** - This part involves ANA providing general information to smallholder farmers about the project's objectives, benefits, and farmer involvement. These sessions help farmers to have a clear understanding of the project activities and make informed decisions independently. These project introduction and training sessions have already been conducted in the initial project areas (including during initial baseline engagement activities in 2021 prior to formal project rollout). The sessions were delivered in Swahili and local dialects and covered the overall project concept, proposed interventions (agroforestry and SALM), farmer roles and responsibilities, expected benefits (including carbon incentives), and grievance redress options. Evidence collected from these sessions includes attendance lists, photographs, and training materials, and photographic evidence is included in the Project Idea Note (PIN) and referenced in project documentation (see Annex 5). To ensure that these FPIC-related trainings and engagement meetings are systematically tracked, the project has included the relevant community engagement and inclusion training activities under Output 3 in Table 3.5 (Activities 3.3–3.5) and aligned them with monitoring indicators in Table 4.5 (including P9–P14).

ii) **Agreement and Responsibilities** – Following the introduction and awareness sessions, the farmers willing to participate are presented with an agreement outlining their responsibilities in tree care and detailing the project's commitments. This includes the project's role in monitoring, evaluation, maintaining communication, and fulfilling its obligation to pay carbon dues once credits are sold.
The agreement is an important element in the FPIC process and a collective decision-making mechanism that allows farmers to consent to and engage with the project on an informed basis.

Ongoing FPIC and Adaptive Project Design

FPIC is treated as an ongoing process throughout the project cycle, not a one-time enrolment step. In addition to the initial trainings, ANA continues to conduct annual community engagement meetings and follow-up consultations through field coordinators and local leadership structures. Feedback raised by farmers and local stakeholders continues to inform project design and safeguards, including adjustments to training content, implementation planning, risk mitigation, and benefit-sharing sensitisation. This ensures there is continued opportunity for rights-holders to raise concerns, request clarifications, and provide input into project implementation and monitoring.

Sample of the responsibilities outlined in for agreement

Ardhi Njema Agroforestry responsibilities

- *Register and enrol tree growers in the carbon offset program*
- *Provide seedlings and tree tags*
- *Monitor tree growth*
- *Provide timely payments for tree growth incentives and carbon offset payments*
- *Communicate program updates to tree growers*

Farmers responsibilities

- *Correctly plant seedlings and tag the trees at 6 months*
- *Maintain the health of the seedling including watering when necessary*
- *Provide Ardhi Njema Agroforestry with access to the shamba to monitor the trees*
- *Provide Ardhi Njema Agroforestry with updates on tree health as requested*

iii) **Affirmative Inclusion Practices** – The project recognizes the patriarchal nature of land tenure in the region and strives to address this through an affirmative process. Opportunities are framed as 'family' driven rather than tradable commodities, aiming to include a broader demographic and avoid privileging those who traditionally qualify under existing norms.

iv) **Consent Form and Community Involvement** – Enrolment in the project is contingent upon the signing of an FPIC consent form. This form, witnessed by a community member, signifies the farmers' acceptance of and commitment to the project guidelines throughout its duration. And willingness to voluntarily participate in project activities.

v) **Transparency and Awareness** – The project team has developed a comprehensive process for information dissemination and awareness creation (detailed in section 2.3). This ensures that all core disclosures are made and that the FPIC process is adhered to, reinforcing the project's commitment to transparency and respect for farmers' rights.

vi) **Participatory monitoring** – Farmers are involved in the monitoring of the project process, like in the case of agroforestry they are involved in counting the number of trees surviving and updating field officers. Farmers also take the field officers round their farms and both parties take the coordinates/ polygons of the planted areas.

2.6.3 Initial FPIC

Initial FPIC was undertaken during baseline project implementation activities, including community sensitization sessions and trainings conducted in the initial project areas. These engagements were carried out in accessible locations within participating villages and delivered in Swahili and local dialects to ensure all participants clearly understood the project's objectives, interventions, expected benefits, rights and responsibilities prior to enrolment.

During the initial FPIC meetings and trainings, ANA covered the following topics:

- introduction to the carbon project and the carbon cycle;
- agroforestry system options (e.g., border planting, alley cropping, woodlots) and how farmers choose suitable designs;
- SALM practices (e.g., minimum tillage, mulching, composting, nutrient management and IPM);
- expected performance requirements (tree retention, survival expectations, monitoring access);
- benefit-sharing principles including carbon revenues and incentives;
- grievance reporting mechanisms and feedback channels;
- inclusion approaches to support women and youth participation within household-based participation models.

Feedback from participants during these engagements informed project design and safeguards. For example, early discussions confirmed farmer preferences for agroforestry system types (border planting preferred by the majority) and highlighted risks and implementation considerations such as species suitability and farmer support needs. These inputs informed the project's technical training content, extension planning, and ongoing engagement approach.

The project observed positive community reception to the project concept and interventions, with strong participation in meetings including high female attendance (over 60% as recorded). Evidence of initial FPIC meetings is included in Annex 5, while additional consultation outcomes and stakeholder engagement planning are included in Annex 10.

The evidence of this is provided in Annex 5.

A report on stakeholder engagement so far, the stakeholder engagement plan, initial and planned FPIC processes, and development of the grievance mechanism can be found in the following report:

Annex 10
Stakeholder Engagem

3. Project Design

Baselines

3.1 Baseline Scenario

The most likely future land use and land management scenario of the project areas, in the absence of the project interventions, is fully described in Annex 7 based on AR-TOOL02 v07.0: "Combined tool to identify the baseline scenario and demonstrate additionality). We describe the baseline from a general perspective below.

Nyeri County.

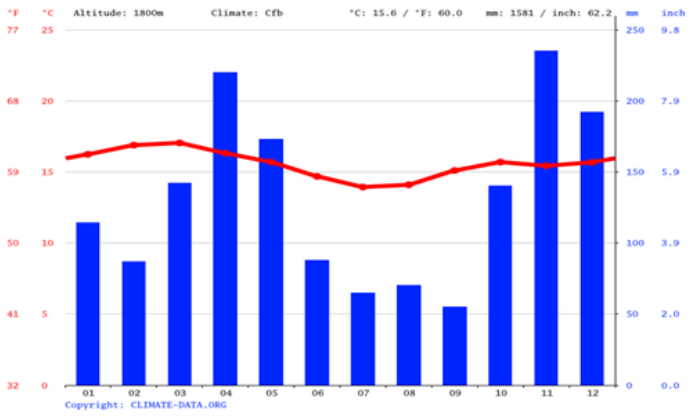


Fig 3.1.1: The annual climate averages for Nyeri County

The climatic conditions in Nyeri are categorized as mild and moderate. There is also a significant amount of rainfall throughout the year that even the driest month still has a lot of rainfall. This location is classified as Cfb by Köppen and Geiger[6]. The average yearly temperatures in this region are 15.6 °C | 60.0 °F while the annual precipitation is approximately 1581mm | 62.2 inch. Nyeri also experiences a moderate climate, and the summers are not easy to define as the seasons merge almost seamlessly.

Laikipia County.

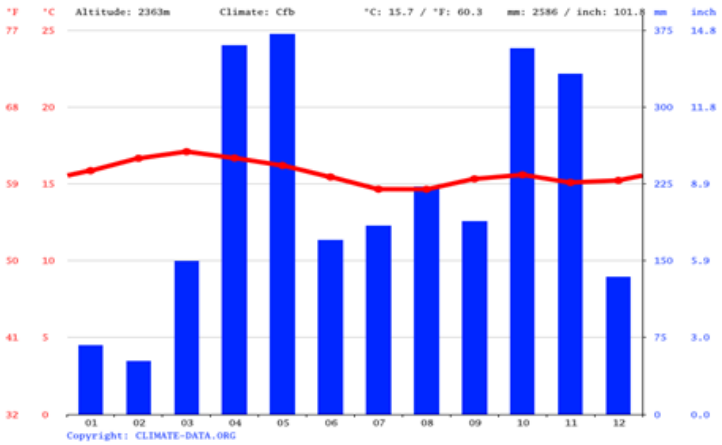


Fig 3.1.2: The annual averages for Nyahururu station in Laikipia, 2023.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	15.9 °C (60.5) °F	16.7 °C (62) °F	17.1 °C (62.8) °F	16.7 °C (62) °F	16.2 °C (61.1) °F	15.4 °C (59.8) °F	14.7 °C (58.4) °F	14.6 °C (58.4) °F	15.3 °C (59.6) °F	15.6 °C (60.1) °F	15.1 °C (59.1) °F	15.2 °C (59.4) °F
Min. Temperature °C (°F)	9.5 °C (49.2) °F	9.4 °C (48.9) °F	10.3 °C (50.5) °F	11.7 °C (53) °F	11.7 °C (53) °F	10.9 °C (51.6) °F	10.2 °C (50.3) °F	10.1 °C (50.2) °F	9.8 °C (49.7) °F	10.4 °C (50.7) °F	10.9 °C (51.6) °F	10.2 °C (50.4) °F
Max. Temperature °C (°F)	22.2 °C (72) °F	23.7 °C (74.7) °F	23.9 °C (75) °F	22.3 °C (72.2) °F	21.4 °C (70.6) °F	20.6 °C (69) °F	19.5 °C (67.1) °F	19.6 °C (67.3) °F	21 °C (69.8) °F	21.1 °C (70) °F	20 °C (68) °F	20.7 °C (69.3) °F

[6] Beck, H., Zimmermann, N., McVicar, T. et al. Present and future Köppen-Geiger climate classification maps at 1-km resolution. Sci Data 5, 180214 (2018). https://doi.org/10.1038/sdata.2018.214

Precipitation / Rainfall mm (in)	67 (2)	52 (2)	149 (5)	360 (14)	371 (14)	170 (6)	184 (7)	222 (8)	188 (7)	357 (14)	332 (13)	134 (5)
Humidity(%)	59%	53%	56%	68%	70%	70%	73%	74%	67%	69%	76%	69%
Rainy days (d)	5	4	7	12	13	13	17	17	11	13	14	9
avg. Sun hours (hours)	9.8	10.3	9.9	8.7	8.7	8.5	7.7	7.7	8.9	8.5	7.5	8.6

Table 3.1.1: Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours for Laikipia County. Data: 1991 – 2021.

In Laikipia, the difference in precipitation between the driest and wettest months is 319 mm | 13 inch. The average temperatures vary throughout the year by 2.5 °C | 4.4 °F. Further, November exhibits the highest relative humidity (76.36%) while February exhibits an extremely low level of relative humidity (52.86%). August is the wettest month (22.57 days) while February is the driest (5.27 days).

Kirinyaga County.

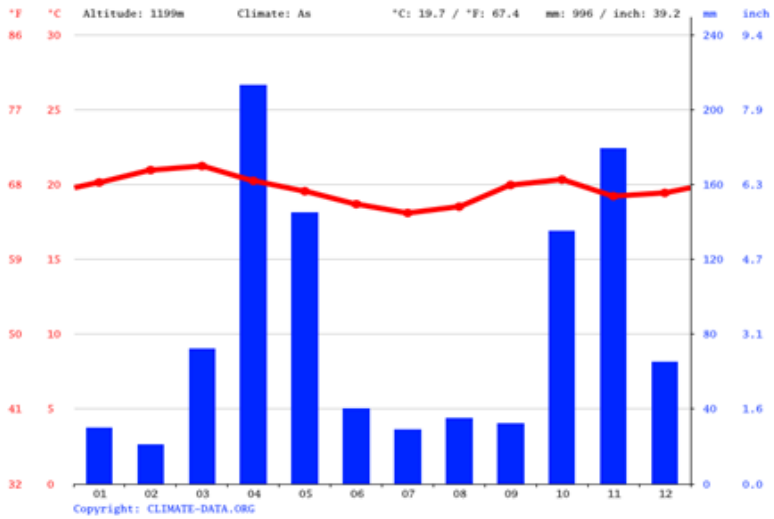


Fig 3.1.3: The annual climate averages for Kirinyaga County, taken for the Sagana Station.

In Kirinyaga, the summers experience a good amount of rainfall, while winters have very little. The averages are classified as tropical, and the climate is considered to be Aw according to the Köppen-Geiger climate classification. The average yearly temperature for this region is 19.7 °C | 67.4 °F while the annual precipitation average is approximately 996 mm | 39.2 inch.

As presented above, the project areas have favourable climatic conditions for agriculture. However, there is a likelihood that future land use and land management will continue with the trend of unsustainable agricultural practices like monocropping, extensive tillage, limited composting, improper use of synthetic fertilizers, and unguided agroforestry practices. The present farming techniques employed by smallholder farmers within this locality lead to soil degradation and pose environmental risks. As such, issues such as soil erosion, nutrient depletion, and loss of biodiversity are exacerbated by the absence of sustainable land management practices, therefore leading to a decline in the land's long-term productivity.

Further, business as usual cultivation approaches, often involving poor soil conservation methods, extensive tillage, and monoculture, coupled with unplanned agroforestry, result in reduction in soil fertility. As a result, this heightens the vulnerability of the ecosystem to extreme weather conditions. These actions have negative implications on ecosystems, such as water quality impairment, habitat destruction, and loss of biodiversity, including beneficial organisms.

As presented in Annex 7, new and modified approaches to these practices are necessary, especially in the face of climate change, which has affected Kenya's agricultural productivity. Several SALM initiatives, both government- and NGO-led, have been implemented in some of these regions. Among these initiatives is the National Agroforestry Strategy 2021-2030 which facilitates programmes aiming to integrate trees into individual farms to combat soil degradation, and the Kenya Climate Smart Agriculture project funded by the World Bank, targeting soil and water improvement in drought regions like Laikipia. Previous efforts have not yielded much fruit as the participation levels of the community were reduced to mere tokenism, including providing land without a substantial investment in community environmental education, high implementation costs, and weak land tenure policies.

This Plan Vivo project addresses this by concentrating on community awareness and encouraging community ownership of the project, programs which increase participation in the project, and working with local governments to encourage land tenure security to improve long-term stewardship of the project areas.

3.2 Carbon Baseline

The most likely land use scenario, in the absence of the project interventions and the additionality of the project, were determined using AR-TOOL02 v1.0, with the relevant specifications taken from the Plan Vivo Agriculture and Forestry Carbon Benefits Assessment Methodology (PM001). The baseline scenario and additionality will be re-evaluated at least every ten years in accordance with Plan Vivo requirements.

Calculation of Baseline Removals by Carbon Pools

Baseline removals were developed following Equation 1 of the PM001 methodology. Procedures for estimating the parameters in Equation 1 were guided by PU001 (and PU002. Based on survey data and field assessments, the most likely land use scenario in the absence of the project is continued subsistence mixed farming, with intermittent fallow periods, scattered trees for fuelwood, timber, or boundary marking, and ongoing degradation due to poor land management.

Although there are existing trees and biomass in the project areas, these are typically harvested within short cycles for their products or to clear land for crops. Therefore, the carbon stocks of aboveground woody biomass, non-woody biomass, litter, deadwood, and soil organic carbon are assumed to be in a dynamic equilibrium, with no net increase over time. This means that the baseline land use is not resulting in long-term net sequestration of carbon, and in fact, may be declining or stable at best.

This was also confirmed through the surveys, where farmers noted use of chemical fertilizers, frequent land clearing, and removal of crop residue for livestock feed, practices that further limit the potential for soil organic carbon accumulation or biomass regeneration in the absence of the project.

Therefore, in line with AR-TOOL14 v4.2, Section 5, the net GHG removals under the baseline scenario can conservatively considered to be zero, supported by meeting the conditions under both Point 11 and Point 12 as follows:

Point 11:

a) The project will not harvest or remove any existing trees; rather, these will be left undisturbed and monitored throughout the project.
b) The implementation of agroforestry and SALM practices is not expected to cause mortality to the existing pre-project trees.
c) The carbon stocks of pre-project trees will not be included in project carbon accounting, but their existence will be documented and monitored as part of the baseline integrity.

Point 12:

At least one of the required conditions is met:

f) The land is subjected to periodic cycles such as fallowing, burning, and re-clearing, leading to oscillations in biomass between minimum and maximum levels. This is a common pattern in the project areas where soil fertility and productivity are heavily depleted over time.

Additionally, while lands in Mt. Kenya may be fertile, several indicators of degradation such as reduced biodiversity, erosion from steep slopes, unsustainable land use, and declining productivity align with **point (g)**, which combines the conditions under paragraph 11.

In conclusion, under the prevailing land use, based on Equation 1 under the PM001 methodology:

- Net removals for aboveground woody biomass are zero due to the periodic harvesting.
- No long-term biomass accumulation for non-woody biomass is expected.
- No significant belowground biomass is sustained without permanent vegetation.
- Both litter and deadwood are periodically removed or burned.
- Due to the ongoing degradation, the exposure of topsoil, poor residue management, and limited composting, there is a stagnant/declining levels of soil organic carbon
- No long-term carbon storage in harvested wood products is expected under the baseline, as materials are typically used in short-lived applications.

Therefore, based on Equation 1 of PM001 and the supporting modules, net GHG removals under the baseline scenario are set to zero for all carbon pools.

Baseline Emissions from Carbon Pools

The baseline emissions from carbon pools were calculated in accordance with Equation 2 of the PM001 methodology, which includes emissions from the following carbon pools – aboveground woody biomass, non-woody biomass, belowground biomass, litter, deadwood, soil organic carbon, and wood products.

In the project areas, no significant emissions from these pools are expected under the baseline scenario because of the following:

- Biomass present on-farm is harvested cyclically for its products and does not accumulate over time. Wood is typically burned, releasing the stored carbon into the atmosphere. Because of this, the carbon stocks remain in a state of low equilibrium and do not represent an increasing or decreasing source of emissions.

- Herbaceous biomass (non-woody biomass) is managed for subsistence crop production, with residues either removed for animal feed or burned.
- Without sustained aboveground biomass, belowground biomass remains minimal. Shallow-rooted annual crops dominate the landscape, with no expectation of root biomass or loss under the baseline.
- Both litter and deadwood are either cleared manually or burned as part of land preparation, resulting in a net-zero change in carbon emissions from these pools under the baseline, consistent with non-conservation land-use practices.
- Baseline farming practices such as minimal composting, burning of crop residue, use of synthetic fertilizers, and poor manure management, continue to deplete soil organic matter.

Therefore, following the procedures in Module PU002 and supported by field evidence, the total net GHG emissions from all carbon pools under the current baseline scenario are estimated at zero.

Table 3.2 Total net-greenhouse gas emissions under the baseline scenario

Year	Baseline emissions (t CO_2e)
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0

3.3 Livelihood Baseline

3.3.1 Initial Livelihood Status

According to the International Monetary Fund (IMF), Kenya's GDP per capita stands at $2,470, placing it 14th in Sub-Saharan Africa. The Kenya National Bureau of Statistics (KNBS) estimated the national poverty headcount ratio at 39.88% in 2022. Disaggregated at the county level, Laikipia has a poverty ratio of 32.5%, while Nyeri and Kirinyaga have comparatively lower poverty levels at 18.2% and 23.1% respectively.

The project conducted a household survey in May 2025 in alignment with Plan Vivo's Participatory Toolkit (Tool 5: Well-being Assessment). The initial status is presented below, with the analysis including 66 households across the project villages in the three counties. The data is disaggregated by the gender of the household head where appropriate. Indicators were selected based on survey data availability, local context, and relevance to agroforestry livelihoods.

Table 3.3.1: Initial Livelihood Status - Well-being Assessment Baseline, based on Participatory Toolkit Tool 5 and Household Survey Data.

Indicator	Status 1 (Better off)	% Households (Status 1)	Status 2 (Vulnerable Position)	% Households (Status 2)	Comments

Income diversity	≥2 income sources (e.g., crops, livestock, business)	68.2%	≤1 income source	31.8%	45 households have multiple incomes; 21 rely on 1 source or casual labor.
Food Security	Self-sufficient (uses farm products for household)	77.3%	Sells most products (potential deficit)	22.7%	51 households consume farm products; 15 sell >50% of produce.
Livestock Ownership	Owns livestock (any type, >5 units)	81.8%	No livestock or minimal (<5 units)	18.2%	54 households own livestock; 12 have none or minimal.
Tree Planting Practice	Plants trees (agroforestry)	92.4%	Does not plant trees	7.6%	61 households practice tree planting; 5 do not.
Education of Household Head	Secondary or higher	45.5%	Primary or lower	54.5%	30 heads have secondary/tertiary education; 36 have primary/none.
Employment Status	Employed (formal or business)	4.5%	Not employed	95.5%	Only 3 households report employment; 63 rely on farming/casual work.
Household Head Gender	Male-headed	50.0%	Female-headed	50.0%	33 male-headed; 33 female-headed. No significant income disparity observed.

3.3.2 Expected Livelihood Change

Stakeholder Group	**Expected Change in Livelihood Status**	**Evidence from Survey & Local Trends**
Smallholder Farmers *(Nyeri, Kirinyaga, Laikipia)*	- Declining soil fertility and crop yields due to continued monocropping and fertilizer overuse. - Increased climate vulnerability due to lack of tree cover. - Market insecurity and reliance on low-value produce.	- 41% of respondents report degraded soil fertility. - 72% mention erosion as a current problem. - 31.8% of households have only one income source, mostly farming.

Female-Headed Households	- Disproportionate exposure to poverty due to fewer income opportunities and access to inputs. - Increased burden from fuelwood collection and food provision.	- 50% of surveyed households are female-headed. - 58% report inadequate firewood access. - 70% cite "financial aid" and "access to credit" as top needs.
Youth (18–35 years)	- Limited livelihood opportunities, leading to rural–urban migration and high unemployment. - Reduced intergenerational farm transition.	- Youth largely absent from household head data. - Only 4.5% of households report employment. - "Lack of money" and "no opportunities" listed as key challenges.
Seedling Suppliers	- Unstable demand for indigenous seedlings, leading to business stagnation. - Missed opportunity for diversification into agroforestry-compatible species.	- No structured market for seedling supply without project coordination. - Survey indicates low awareness of native species' value.
County Governments *(All 3 counties)*	- Slow progress in local SDG targets on land restoration and rural development. - Increased demand for emergency support (e.g., food aid, erosion mitigation).	- Poverty headcount: Laikipia (32.5%), Kirinyaga (23.1%), Nyeri (18.2%). - Without project, economic benefits from improved agroecosystems would be unrealized.
Local Authorities *(chiefs, sub-chiefs)*	- Decreased capacity to mobilize communities around land restoration initiatives. - Continued pressure from community grievances related to livelihoods.	- Chiefs currently facilitate community engagement; without support, influence may weaken. - Demand for tangible outcomes like jobs and training will go unmet.
Universities (e.g., Dedan Kimathi)	- Fewer field research opportunities and reduced community knowledge integration into academic programs. - Lower engagement in applied rural innovation.	- Academic institutions cited as important for tree species advice. - Without project, no framework for community–academic collaboration.
Agroforestry Research Agencies (KEFRI, KARLO)	- Limited uptake of research outputs (e.g., improved seed systems, tree species trials). - Reduced visibility of institutions among smallholder systems.	- Without on-ground tree planting, scientific recommendations remain underutilized. - Certification of nurseries may stagnate.

3.4 Ecosystem Baseline

3.4.1 Initial Ecological Conditions

Prior to the start of the project, the ecological conditions across the project areas were characterized by degraded soils, loss of biodiversity due to land degradation and the effects of climate change. It was observed that human practices have negatively impacted the integrity of the land, which, coupled with natural processes, has reduced its value, productivity, and ecological complexity. It can be surmised that this has affected the land's ability to support food production, livelihoods, and ecosystems.

The degradation is primarily driven by:

- **Human activities**, including unsustainable resource management, overgrazing, deforestation, urbanization, and settlements.
- **Extreme weather conditions**, especially flooding, droughts.
- **Agricultural and livestock production** as they are not practiced with sensitivity to sustainable land management. Key drivers include land clearance (such as clearcutting and deforestation), agricultural depletion of soil nutrients through poor farming practices such as exposure of naked soil after crop harvesting, overstocking, and grazing beyond the carrying capacity of the land, use of chemical fertilizers and pesticides.

Farmers in the study area practise subsistence mixed farming which does not perform optimally. There has been significant loss of tree cover, and poor use of synthetic fertilizers and soil conservation techniques render the lands less productive over time, necessitating the farmers to farm on new lands (often through renting) leading to more deforestation. Lack or poor implementation of fallow systems exhausts the land as well, by not giving it appropriate time to recover. Use of crop residue as animal feed further exacerbates loss of nutrients from the soil. Poor manure management coupled with limited composting skills deny the soil the much-needed resources to recover from overuse.

Biodiversity has suffered as a result. Intensive monocropping, pesticide use, and habitat fragmentation have led to the decline of key pollinators and beneficial organisms. Anecdotal evidence from farmer interviews suggests a lack of awareness about beneficial species, with some farmers actively destroying habitats used by pollinators such as carpenter bees and will spray them with pesticides as soon as they see them. This ecological simplification reduces the resilience of the system to shocks such as drought, pest outbreaks, or invasive species. These risks are intensifying due to climate change.

3.4.2 Expected Ecosystem Change

Under the current baseline scenario, the ecological conditions in the project areas are expected to deteriorate further in the absence of the targeted intervention. If the current farming and land management practices persist, soil degradation will intensify due to continuous cultivation without adequate nutrient replenishment, poor manure management, and the use of synthetic fertilizers, which will further reduce soil fertility, increase soil erosion, and lead to a decline in agricultural productivity. Deforestation will also likely increase, worsening the degradation of already fragile ecosystems, resulting in further habitat loss and fragmentation.

Biodiversity is also expected to decline under the baseline scenario as the continuous use of pesticides, monocropping, and habitat destruction will further reduce populations of pollinators and beneficial organisms. The ecosystem will become more simplified and less resilient, making it more

vulnerable to climate shocks such as drought and floods, challenges that are becoming more frequent and severe due to climate change.

Without increased awareness or capacity-building among farmers, the existing harmful practices such as the destruction of pollinator habitats and misuse of chemicals are likely to persist. This will accelerate the decline in species variety and ecological function, undermining the ability of the landscape to sustain food production, maintain soil health, or buffer against environmental stressors.

Theory of Change

3.5 Project Logic

Table 3.5 below provides a summary of the causal links between project activities and expected outcomes as well as key assumptions. Regarding risks, we refer to §Risk Management.

Table 3.5 Project Logic

Aim To improve soil fertility by reducing land degradation, thereby promoting climate change resilience among smallholder farmers in Nyeri, Laikipia, and Kirinyaga counties in Kenya, as well as support environmental conservation through carbon sequestration while increasing livelihoods for rural communities through the implementation of agroforestry systems.		
	Description	**Assumptions/Risks**
Outcomes		
Carbon Benefit	The estimated 6 million trees to be planted in the agroforestry systems will sequester atmospheric carbon from the atmosphere through photosynthesis and storage in biomass. The SALM practices, such as minimum tillage, will improve the soil's ability to sequester carbon that will be stored below the ground. The SALM cycles incorporate aerating manure stockpiles to reduce methane emissions by inhibiting methanogens, contributing to climate change mitigation. The farmers will monetize the carbon absorbed through this project, acting as an extra source of income.	The trees planted by the farmers will survive and grow, achieving the expected carbon sequestration rates. The adoption of agroforestry practices will lead to reduced deforestation and land degradation. The adoption of various SALM practices will be done simultaneously in the same farms. The project will be registered with Plan Vivo and certified to sell carbon credits.
Livelihood Benefit	Integrating the ~6 million trees into agricultural farms is expected to enhance soil fertility and increase food production. The ~500,000 fruit trees to be planted will provide diversified products from the farm. Farmers will achieve economic stability through reduced dependency on single crops and additional income from incentives and carbon credit benefits,	Farmers will nurture the trees until they reach maturity. Farmers will successfully adopt SALM. There will be sustained markets for agroforestry products such as Croton nuts.

	lessening their vulnerability to market and climate shocks.	Farmers will enjoy additional income paid from incentives and the sale of carbon credits.
Ecosystem Benefit	The agroforestry systems will enhance biodiversity by supporting a variety of species, leading to promotion of ecological balance and pest control. The native trees will provide habitat and food for local wildlife, including birds, insects, and small animals. Wildlife species that could be considered pests, such as rodents, are managed through mechanical control methods. SALM practices will help restore soil biodiversity balance and promote beneficial organisms.	The farmers will nurture the trees to ensure a high survival rate. The farmers will successfully adopt SALM.
Outputs and activities		
Output 1	Improved climate change resilience among the farmers through enhanced biodiversity, microclimates, and soil fertility.	Farmers will adopt the agroforestry systems and SALM practices, supported by technical training and partnerships with agencies including NEMA, KALRO, and KFS to address the resilience gaps.
Activity 1.1	Restore ~30,000 ha of agricultural land by establishing agroforestry systems and SALM practices.	There is a risk that farmers may not fully adopt the new practices. This risk will be mitigated by providing targeted technical training and partnering with relevant state and non-state actors to offer practical models of best practices (Activity 3.1).
Activity 1.2	Plant ~6 million trees, including a mix of 3 different tree species with a total of ~100 trees/ha in the agricultural farms to enhance soil fertility and biodiversity.	The farmers will nurture the trees to maturity.
Output 2	Increased efforts to mitigate climate change through reduction and removal of GHG emissions.	All the farmers participating in the project will implement the agroforestry systems.
Activity 2.1	Ensure that the trees planted in the project will grow to maturity, actively removing carbon dioxide from the atmosphere and contributing to GHG reduction.	Inadequate tree growth/survival, which will be mitigated through regular monitoring and continuous technical support to the farmers.
Output 3	Improved livelihoods for the project participants through improved land management, income from PVCs, diversified income from agroforestry fruits, and better community governance systems.	All the farmers will be willing to implement the project.

Activity 3.1	Train 60,000 households on agroforestry and SALM practices including project sensitization, FPIC disclosures, roles/responsibilities, and grievance mechanisms.	All the farmers will be willing to implement the project.
Activity 3.2	Plant 500,000 fruit trees.	All the fruit trees planted will survive and yield fruits.
Activity 3.3	Conduct inclusive training and awareness sections for women, widows, youth, and PWDs in collaboration with County Departments of Gender and Social Services annually. These sessions will build capacity, promote equal participation, and ensure equitable benefit-sharing.	Active participation and logistical feasibility, mitigated through targeted outreach and gender-sensitive facilitation.
Activity 3.4	Conduct continuous (annual) FPIC processes and community engagement meetings (at least one annual community meeting per project region) to ensure transparency and sustained consent throughout the project cycle, including grievance handling and adaptive management updates. Annual community meetings will be conducted across each project region to support continuous FPIC, transparency, and adaptive project management. Meetings will be scheduled once per year per project region, aligned with the annual monitoring cycle and planned during periods of high farmer availability (typically after peak planting/weeding seasons). The ANA Project Team will lead meeting planning and delivery in collaboration with lead farmers and local committees. County Government representatives (including Departments of Gender and Social Services) and relevant technical agencies (e.g., KFS, KALRO, NEMA where appropriate) will be invited to participate. Each meeting will be documented through attendance registers (disaggregated by gender, youth, elderly, and PWD participation), meeting minutes, grievance logs, and action plans. Follow-up actions (e.g., corrective actions, additional training, enrichment planting, or community feedback resolutions) will be tracked through the internal database and reflected in the annual monitoring report.	Risk of communication gaps, mitigated through structured annual engagement schedules, use of lead farmers and local committees, inclusive facilitation, and documented action tracking.
Activity 3.5	Conduct annual training for project governance structures (lead farmers, local committees) to strengthen accountability, coordination, and local ownership	Stability of local leadership.

Technical Specification

The technical specification template for each project intervention is available in Annex 7, following the PM001 methodology.

3.6 Project Activities

Table 3.6 Project Activity Summary

Project Intervention	Project Activities (A#)	Inputs
Output 1: Improved climate change resilience among farmers through enhanced biodiversity, microclimates, and soil fertility.	**A1.1** Restore ~30,000 Ha of agricultural land by establishing agroforestry systems and implementing SALM practices which include mulching, terracing, composting, and cover cropping	Native and improved seedlings, SALM inputs (mulch, compost, cover crops), community labour, and technical support.
	A1.2 Plant ~6 million trees, including *Grevillea robusta*, *Croton megalocarpus*, *Vitex keniensis*, and fruit species across participating farms at an average density of 100 trees/ha	Seedlings, nursery infrastructure, watering equipment, and labour for planting and maintenance
	A1.3 Conduct regular monitoring and maintenance of planted areas to ensure high survival rates and soil fertility recovery.	Monitoring equipment, lead farmer involvement, field visits, and data collection tools.
Output 2: Increased efforts to mitigate climate change through the reduction and removal of GHG emissions.	**A2.1** Ensure tree survival and growth through continuous management, replacement planting, and technical support to maintain carbon sequestration rates	Monitoring tools, replanting materials, technical assistance, and data collection tools
	A2.2 Implement annual measurement and reporting of GHG removals in line with **PM001**	Technical staff, field survey tools, and data management systems.
Output 3: Improved livelihoods for project participants through enhanced land management, diversified income, and strengthened local governance.	**A3.1** Train 60,000 households on agroforestry and SALM practices	Training materials, demonstration plots, trainers/facilitators, and logistical support.
	A3.2 Plant ~500,000 fruit trees (e.g., avocado, mango, citrus) to diversify income and enhance food security.	Fruit seedlings, nursery inputs, tools, and labour.
	A3.3 Conduct inclusive training and awareness sessions for women, widows, youth, and PWDs in collaboration with County Departments of Gender and Social Services.	Training venues, facilitation materials, county gender officers, and logistical support.
	A3.4 Conduct continuous (annual) FPIC and community engagement meetings to ensure transparency, consent, and participation throughout the project cycle.	Meeting logistics, communication materials, and community liaison officers.
	A3.5 Conduct annual governance and leadership training for lead farmers and local committees to enhance accountability, coordination, and ownership.	Training resources, facilitation experts, and coordination support.

3.7 Additionality

Table 3.7 provides a summary of the main barriers to project implementation and how they will be overcome for each project intervention. Full details of the additionality assessment can be found in Annex 7.

Table 3.7 Additionality Assessment Summary

Improved Land Management through SALM	**Main Barriers**	**Activities to Overcome Barriers**
Technical	Farmers have limited knowledge on agricultural practices about soil and water conservation techniques that can boost production.	Training and awareness sessions that will include the project technical staff and relevant stakeholders.

Restoration through agroforestry	**Main Barriers**	**Activities to Overcome Barriers**
Financial	Insufficient financial resources to procure seedlings, planting, maintenance, monitoring, and training of the staff and community. Limited finances to implement the project due to high upfront finances needed.	Resource mobilization activities to ensure sufficient upfront funds to scale up the project. The sale of credits through the Plan Vivo certificates will help secure finances to repay the investment fund. Ardhi Njema will provide seedlings free of charge to the farmers to ensure that everyone willing to implement agroforestry is equipped with seedlings.

3.8 Carbon Benefits

Table 3.8a Expected Carbon Benefits Summary *(over 20-year project period)*

Project Intervention	**Baseline Emissions (t CO_2e/ha)**	**Project Emissions (t CO_2e/ha)**	**Leakage Emissions (t CO_2e/ha)**		**Carbon Benefit (t CO_2e/ha)**
Agroforestry for soil and biodiversity restoration	0	-167.2 tCO2e/ha	0%		167.2 tCO2e/ha

Table 3.8b Plan Vivo Certificate Potential *(over 20-year project period)*

Project Intervention	**Carbon Benefit (t CO_2e/ha)**	**Project Area (ha)**	**Total Carbon Benefit (t CO_2e)**	**Risk Buffer (t CO_2e/ha)**	**Potential PVCs (t CO_2e)**

Agroforestry for soil and agrobiodiversity restoration	167.2	30,000	1,053,961	20%	843,169
TOTAL	**167.2**	**30,000**	**1,053,961**	**20%**	**843,169**

Risk Management

3.9 Environmental and Social Safeguards

3.9.1 Exclusion List

The project does not include any activities listed in the Plan Vivo Exclusion List (see Annex 8).

3.9.2 Environmental and Social Screening

Table 3.9.2 provides a summary of the potential risks and impacts identified in the environmental and social risk screening. For the environmental and social risk assessment, please refer to §3.9.3. Similarly, please refer to §3.9.4 for the environmental and social management planning.

The complete environmental and social screening report is included in Annex 9.

Table 3.9.2 Environmental and Social Risks

Risk Area	**Likelihood (1-5)**	**Magnitude (1-5)**	**Significance (low, moderate, severe, high)**
Vulnerable Groups	2	3	Moderate
Gender Equality	2	3	Moderate
Human Rights	1	4	Low
Community, Health, Safety & Security	2	2	Low
Labour and Working Conditions	2	2	Low
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	1	2	Low
Access Restrictions and Livelihoods	3	2	Moderate
Cultural Heritage	1	2	Low
Indigenous Peoples	2	2	Low
Biodiversity and Sustainable Use of Natural Resources	2	2	Low
Land Tenure Conflicts	3	1	Low
Risk of Not Accounting for Climate Change	2	2	Low
Other – e.g. Cumulative Impacts	-	-	Low
Overall risk assigned to project:			**Low**

3.9.3 Environmental and Social Assessment

As described in the screening process summarized in Section 3.9.3, Ardhi Njema Agroforestry's project was classified as a low-risk project. Considering this and following the recommendations from the assessment conducted by Plan Vivo, we carried out an ESA (see ESA report in Annex 10) and developed an ESMP (as filled out in Section 3.9.4), with additional consideration given to the risks assigned as "moderate".

During the initial risk assessment, several identified themes were found that could pose a risk to our project, particularly regarding vulnerable groups, gender equality, access restrictions, and livelihoods. In this case, the team engaged with various key stakeholders to guide the project design, addressing the three themes outlined in Annex 10. This includes an explanation of the discussions and a description of the measures developed to minimize their potential impacts.

The main risks identified as part of the E&S risk screening and ESA are as follows:

Environmental Risks

The project poses several environmental risks, which have been identified and require mitigation measures.

- Soil erosion. The introduction of agroforestry practices, especially in sloping areas, may cause soil erosion if not managed properly. This risk is mitigated through soil conservation techniques, such as terracing and cover cropping.
- Biodiversity risks. While agroforestry systems enhance biodiversity, the introduction of non-native species may disrupt local ecosystems. The project mitigates this by prioritizing native and agroforestry-friendly species, e.g., Grevillea robusta, Moringa Oleifera, to support local flora and fauna.
- Water availability and quality. In dry areas like Laikipia, water scarcity may affect tree establishment and growth. The project plans to implement rainwater harvesting systems and efficient irrigation techniques to address water needs.
- Pesticide use and pollution. The project avoids the overuse of agrochemicals and promotes integrated pest management instead. As such, the project provides training on safe pesticide handling, ensuring minimal impact on water sources and biodiversity.

Social Risks

Social risks identified include:

- Land tenure conflicts. There are concerns about land ownership and disputes among family members, particularly regarding women and youth. This risk is mitigated by emphasizing FPIC and gender-inclusive participation in the project.
- Human-wildlife conflict. Especially in Laikipia, there is a risk of wildlife encroaching on farmland. The project plans to work with KWS to implement mitigation strategies, such as fencing and community outreach to reduce conflicts.
- Cultural sensitivity and exclusion. Ensuring that marginalized groups, particularly women and youth, are involved in decision-making processes. The project includes targeted outreach and training to include these groups, avoiding cultural exclusion or discrimination.

The ESMP (section 3.9.4) aims to manage and mitigate these.

3.9.4 Environmental and Social Management Plan

Table 3.9.4 Environmental and Social Risk and Impact Mitigation Measures

Risk/ Impact	Type	Description	Mitigation Measures	Project Activity	Monitoring Indicator
Soil erosion	Environmental	Agroforestry establishment on sloping land may increase soil erosion if not managed.	Implement soil conservation practices such as terracing, mulching, and cover cropping under SALM. Provide technical training to farmers on soil erosion.	A1.1 A3.1	P1 P2
Biodiversity disruption from non-native species	Environmental	Introduction of non-native species may disrupt ecosystems	Prioritize native and agroforestry-compatible species as well as provide nursery and species training.	A1.2 A3.1	P1 P3 P5
Water scarcity and competition	Environmental	Water shortages during dry seasons may reduce tree survival	Promote rainwater harvesting, mulching, and efficient irrigation techniques. Train farmers on water use efficiency	A1.3 A3.1	P5 P6
Agrochemical pollution from pesticide use	Environmental	Overuse of agrochemicals may contaminate soil and water.	Promote integrated pest management and safe handling practices.	A3.1	P6
Land tenure conflicts	Social	Potential disputes over land ownership or intra-household rights	Conduct FPIC and inclusive consultations. Encourage involvement of spouses/next-of-kins in enrolment and project activities	A3.3 A3.4	P11
Gender exclusion and equitable benefit sharing	Social	Women, widows, and youth may be excluded from participation or benefit-sharing.	Deliver gender-sensitive training. Promote equitable participation.	A3	P7 P9 P10
Human-wildlife conflict	Social / Environmental	Wildlife may damage young trees and crops.	Partner with KWS and communities to implement wildlife deterrent measures and conduct awareness sessions.	A3.4	P11
Cultural exclusion/ marginalization of vulnerable groups	Social	Marginalized or minority groups may be excluded from decision-making.	Ensure culturally sensitive FPIC and continuous stakeholder consultations.	A3.3 A3.4	P9 P10 P11

Health and safety during planting and maintenance	Environ mental/ Social	Risks of injury or unsafe working conditions during planting or maintenance.	Enforce safety standards.	A3.1 A1.2	P12 P13

3.9.5 Native Species

Table 3.9.5 identifies any non-native tree species that will be planted or other non-native plant or animal species that will be introduced into the project. The agroforestry systems will have a mix of native and non-native trees (source used: https://powo.science.kew.org)

Table 3.9.5: Non-Native Species Overview

Project Intervention	Non-Native Species Planted/ Introduced	Justification	Risk Assessment and Management
Agroforestry	*Grevillea robusta*	*Grevillea robusta* is a naturalised and widely established species in Kenya, making it non-invasive. This species is an excellent agroforestry tree due to its rapid growth, soil improvement capabilities, and drought tolerance.	Low risk species – *Grevillea,* although non-native, poses minimal environmental risk as it does not exhibit invasive characteristics in Kenya. It does not aggressively outcompete native species or disrupt local ecosystems. Propagation is mostly through seeds and cuttings.
Agroforestry	*Moringa oleifera*	*Moringa olefeira* is widely established across Kenya. This species is already useful countrywide as it does well in hot and cold weather. The leaves are a good source of protein, vitamins A, B, and C, and minerals such as calcium and iron. Bigger branches are also useful for construction purposes. It is not an invasive species, although it can be easily germinated in nursery conditions using cuttings or seeds.	Low risk species - There is little chance of self-propagation.

3.10 Achievement of Carbon Benefits

The project will generate fPVCs and rPVCs, which will be transformed into vPCs after every verification cycle. A 10% proportion of carbon benefits will be held as insurance against non-achievement of carbon benefits.

3.11 Reversal of Carbon Benefits

Table 3.11 Risk of Reversals

Risk Factor	Impact	Likelihood	Mitigation Measures*	Score
Social				
Land tenure and/or rights to climate benefits are disputed	2: Climate benefits would not be issued for the affected project area, but the geographical spread across different project areas would limit the total impact.	2: Tenure is secure, and agreement contracts are in place.	Project agreements are signed with all the relevant stakeholders **(A3.4)**. Land use is voluntary and based on FPIC **(A3.4)**.	4
Political or social instability	2: Instability would impact the administrative capacities of the project coordinator.	1: After independence (1969) and the post-election violence (2008), Kenya has known no (civil) wars.	Collaborate closely with county governments and national authorities **(A3.4)**. Ensure inclusive participation to avoid politically driven exclusion **(A3.3, A3.4**).	2
Community support for the project is not maintained	3: Potential impact would be important, although our project areas are explicitly trivial for communities (private plots for voluntary agroforestry).	1: The project is community driven.	Provide continuous training on agroforestry and SALM to strengthen ownership **(A3.1).**Maintain transparent benefit-sharing agreements and annual FPIC meetings **(A3.4)**	3
Economic				
Insufficient finance secured to support project activities	3: There would be insufficient incentive to support the project activities, although that situation would only be temporary.	1: The project coordinators are well-established organizations, capable of providing funding in the absence of carbon benefits.	Maintain a financial plan to sustain implementation. Leverage carbon revenue and co-financing opportunities **(A3.5)**.	3
Alternative land uses become more attractive to the local community	2: Climate benefits would not be issued for the affected project area, but the project geographical spread across different project areas would limit the local impact.	1: Benefit sharing mechanism ensures attractive benefit delivery to the project participants.	Enforce project agreements guaranteeing benefit-sharing **(A3.4)**. Strengthen livelihood diversification through fruit tree planting **(A3.2)**.	2
External parties carry out activities that reverse climate benefits	2: Climate benefits would not be issued for affected project areas, but the project geographical spread across	2: Tenure is secure and agreements and contracts are in place.	Include clauses prohibiting external interference in project agreements **(A3.4)**. Resolve disputes via	4

	different project areas would limit the total impact.		established grievance mechanisms **(A3.5)**.	
Environmental				
Fire	2: The project zones will always be repaired, replenished, and rehabilitated after a passage of fire, pest, extreme weather or geological events.	2: Fire is a known risk in Kenya's dryland areas, especially during drought. However, its impact will be mitigated through community awareness and structured fire management.	Conduct community-based fire prevention awareness and training **(A3.1, A3.4)**. Use fire-tolerant species such as *Croton megalocarpus* **(A1.2)**. Maintain community-based monitoring for early response **(A1.3)**.	4
Pest and disease attacks	2: The project zones will always be repaired, replenished, and rehabilitated after a passage of fire, pest, extreme weather or geological events.	1: The tree species selected for the project have a track record of adaptability in Kenyan agro-ecological zones. With early detection and use of integrated pest management, outbreaks are likely to be contained.	Implement mixed-species agroforestry systems **(A1.2)**. Provide technical training on pest identification on IPM **(A3.1)**. Conduct regular monitoring and replanting as needed **(A1.3, A2.1)**.	2
Extreme weather or geological events	2: The project zones will always be repaired, replenished, and rehabilitated after a passage of fire, pest, extreme weather or geological events.	2: Kenya is increasingly experiencing climate-related disruptions, including prolonged dry spells and erratic rainfall.	Use drought-tolerant, locally adapted species **(A1.2)**. Spread planting across 3 counties to distribute risk **(A1.1)**. Train farmers in SALM practices for resilience **(A3.1)**. Conduct regular monitoring and replanting as needed **(A1.3, A2.1)**.	4
Administrative				
Capacity of the project coordinator to support the project is not maintained	3: Potential impact would be important, but the communities could take over some of the responsibilities.	1: The project coordinators are well established organizations, capable of providing support even in the absence of carbon benefits.	Maintain stable management systems and financial planning **(A3.5)**. Empower lead farmers and local governance committees through regular training **(A3.5)**.	3
Technical capacity to implement	3: Potential impact would be important, but the communities	1: The project coordinators are well established	Conduct annual technical trainings for staff and lead farmers **(A3.1, A3.5)**.	3

project activities is not maintained	could take over some responsibilities.	organizations, capable of providing support even in the absence of carbon benefits.	Maintain manuals, nursery guidelines, and technical specifications **(A1.2, A1.3)**.	

*Cross reference activities from Section 3.5 (e.g. Activity 1.1.1)

3.12 Leakage

Table 3.12 Leakage Risk Mitigation

Project Intervention	Leakage Risk	Mitigation Measures*
Agroforestry	AR-TOOL15 version 2.0 states that leakage emission attributable to the displacement of grazing activities is considered insignificant and hence accounted as zero if animals in the receiving grazing land (displaced and existing) does not exceed the carrying capacity of the grazing land. See more details in Annex 7	A statement of the local authority must be made to confirm the location of the grazing lands to where cattle can be displaced, as well as the fact that these grazing lands are not under significant pressure. The project will provide extra trees and distribute the seedlings free of charge.

*Cross reference activities from Section 3.5 (e.g. Activity 1.1.1)

3.13 Double Counting

There are no other greenhouse gas emission reduction and removal projects, programmes, or initiatives that overlap with the project region(s) or that would generate transferrable emission reduction or removal credits from carbon pools or emission sources included in the project.

Carbon benefits achieved by the project will not be included in any other form of greenhouse gas emissions trading.

In every annual report, the project will check emerging regulations that relate to trading carbon credits in Kenya and state how compliance will be organized (if applicable).

Table 3.13 GHG Emission Reduction and Removal Projects and Programmes in the Project Region

Project, Programme or Initiative	Scope	Carbon Credit Generation	Risk Mitigation
No GHG emission reduction/removal project programmes or initiatives overlap with the project region(s).	-	-	-

Agreements

3.14 Land Management Plans

As ANA works with farmers from various communities and villages on their individual farms, they do not create community-wide land management plans. The project works with small-holder farmers who hold title to their land. During the SALM trainings, farmers draw farm maps to identify resources, understand the opportunities for tree planting and to make adjustments to current farming practices (see an example in Annex 11). Discussions around the carbon benefit and potential to enhance income are discussed in initial introductory meetings with farmers groups prior to registering for the project.

3.15 Crediting Period

The crediting period for this project is from 2026 - 2045 (20 years period).

3.16 Benefit Sharing Mechanism

i) The project will allocate at least 60% of net income minus cost of doing business including payment of any charges, taxes or similar fees levied by the Kenyan government from sale of the Plan Vivo certificates to project beneficiaries. The remaining 40% of income will be allocated for management and administration of the project.

ii) The project is designed to maximize benefits to project participants. Farmers receive both free training and seedlings in addition to income from sale of Plan Vivo certificates, which represents a majority of project costs. Additionally, ANA being a non-profit community-based organization and GECA being non-profit non-governmental organization, income from the sale of Plan Vivo certificates is only used to maintain organisational operations and on-farm monitoring, with the remaining profits invested in local tree nurseries or directly back to the farmer.

iii) Project participants receive benefits immediately from tree seedlings for their farms. Farmers will receive a yearly monetary incentive for the trees they keep alive during the first 3 years. Farmers will receive income from the sale of the Plan Vivo certificates once they have been verified and sold, which is expected in Year 5.

iv) To date, ANA has provided a monetary incentive to smallholder farmers for keeping trees alive. Tree survival is verified through on-farm visits and geo-tagged photos. The incentive has been paid through the local mobile phone-based money transfer service, M-Pesa. Farmers receive a text that their incentive is on the way through a blast messaging service provider, and then confirm when they have received the money in their M-Pesa account. Dispersal of income from Plan Vivo certificates sales will follow the same format with individual farmers receiving payments after their farms have been monitored and their M-Pesa account details confirmed.

3.17 Grievance Mechanism

To promote accessibility and enable confidential and anonymous reporting, the project will provide two digital reporting channels as below.

1. QR Code Reporting for smartphone users. The project will incorporate a QR Code that will be shared with project participants during onboarding. For existing project participants, the QR Code will be communicated during subsequent project trainings. The QR Code will link participants to an online feedback form (Google Form) which allows them to submit issues anonymously, with an option for complainants to indicate whether they would like to be contacted for follow-up and updates on the grievance.
2. USSD reporting for non-smartphone users. For project participants without smartphones or internet access, the project will incorporate a USSD channel accessible through feature phones. The USSD mechanism will similarly allow participants to report grievances anonymously, with an option to receive updates on the progress and outcome of their complaint.

A complete workflow for both the QR Code and USSD are included in Annex 17.

The project generally provides a transparent and inclusive grievance redress mechanism to address concerns or feedback raised by project participants and stakeholders, ensuring a timely and fair resolution. The mechanism includes the following steps:

1. Uptake - Grievances/feedback are received through multiple channels, including regular in-person meetings, telephone, email, or WhatsApp, with these contact details provided to all project participants. These channels are also available throughout the duration of the project. Where a grievance is submitted through the QR Code or USSD channel, the complainant receives acknowledgement through the same channel, and where the complainant opts to be contacted, follow -up and updates will be provided accordingly.
2. Acknowledgement and follow-up - Once received, the internal team at ANA acknowledges the complaint using the same channel through which it was submitted. The complainant is informed that their concern is being processed, within 3-5 working days.
3. Verification, Investigation, and Action - The ANA safeguards committee, together with field officers, investigates the issue to determine its validity and identify corrective actions. If the grievance is valid, corrective actions are implemented at the project level.
4. Escalation to GECA - If a resolution is not found at the ANA project level, the grievance is escalated to GECA, the parent organization of ANA. GECA reviews the issue and is responsible for proposing a viable solution in consultation with the affected parties.
5. Independent arbitration - If the issue remains unresolved, it is escalated to an independent third party, preferably a neutral arbitrator. This is the last resort and only when a mutual agreement cannot be reached internally.
6. Response and communication - Once a solution has been agreed upon at any stage of the process, ANA/GECA/The Arbitrator communicates the outcome to the complainant. Responses are provided within 30 working days from the date the grievance was initially submitted, unless another timeline is agreed with the complainant. Where the complainant has opted to receive updates (through the QR Code or USSD reporting channels), ANA/GECA/The Arbitrator will provide progress updates and the final outcome through the relevant channel in a manner that does not compromise anonymity
7. Feedback Monitoring and Learning - All grievances and feedback are recorded and tracked in a project grievance log, with trends and recurring issues analysed regularly to improve future project practices and accountability. The project will ensure that complaints submitted anonymously through QR Code and USSD channels are logged, and analyzed equally to support accountability, learning, and continuous improvement.

We refer to Figure 3.17 below for the flow of events in case a grievance is submitted by the project participants or stakeholders.

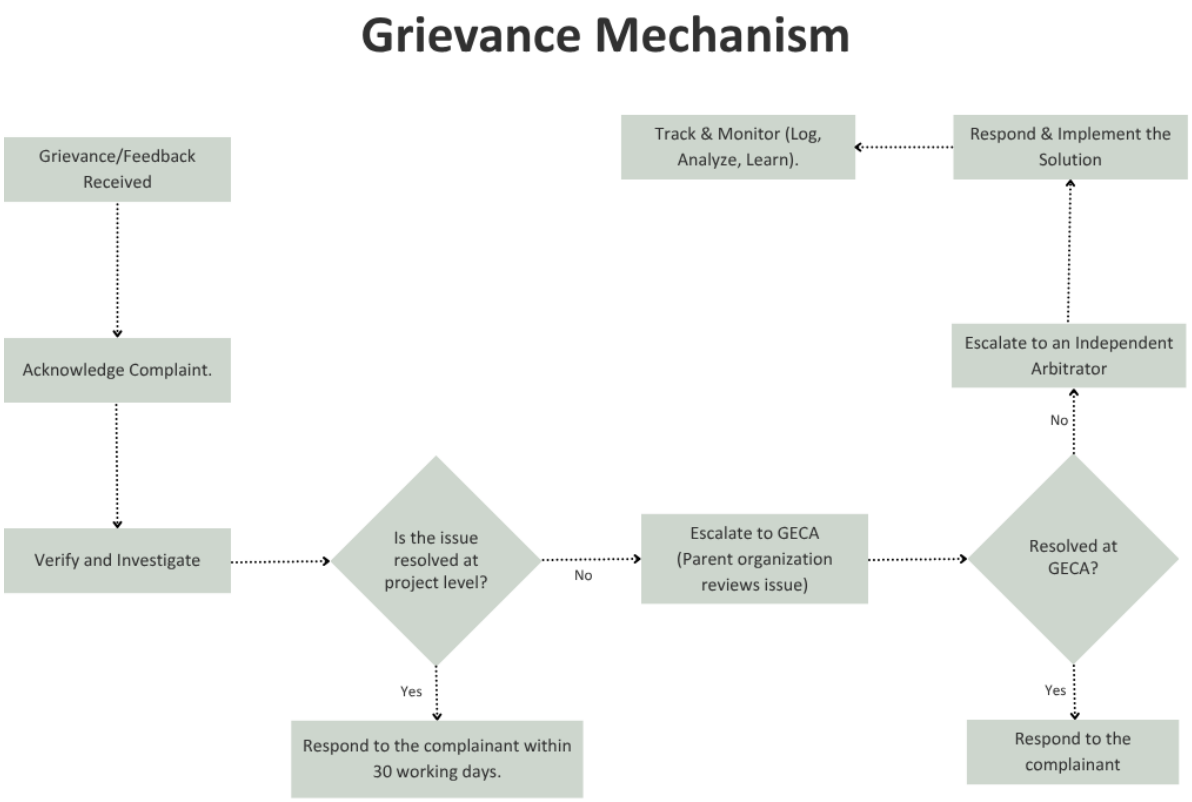


Fig 3.17: Grievance mechanism for participants of the ANA Carbon Project.

3.18 Project Agreements

The project agreement equals the crediting period (20 years). We refer to Annex 12 for an example of project agreements, showing all details, the process for entering into project agreements following FPIC principles, and measures in place that project agreements do not remove, diminish, or threaten project participant's rights to land and/or resources.

4. Monitoring and Reporting

Indicators

4.1 Progress Indicators

Table 4.1 Progress Indicators

Output/Activity	Indicator	Means of Verification
Output 1 Improved climate change resilience among the farmers through enhanced biodiversity, microclimates, and soil fertility.	The number of the smallholder farmers reporting reduced soil erosion and observable biodiversity improvements on their farms based on ecological assessment.	Baseline & Year 5 ecological surveys, farmer perception surveys
Activity 1.1	The number of ha restored under agroforestry and SALM practices.	Field monitoring

Restore 30,000 ha of agricultural land by establishing agroforestry systems and SALM practices.	Adoption rates by participating farmers from 2025 onwards.	
Activity 1.2 Plant 6 million trees, including a mix of 3 different species with a total of ~100 trees/ha in the agricultural farms to enhance soil fertility and biodiversity.	The number of trees planted per hectare with a mix of the different species planted during the project's first 4 years.	Field monitoring
Output 2 Increased efforts to mitigate climate change through reduction and removal of GHG emissions.	Amount of carbon sequestration (tCO2/ha).	Field measurements
Activity 2.1 Ensure that the trees planted in the project will grow to maturity, actively removing carbon dioxide from the atmosphere and contributing to GHG reduction.	Survival rate per year.	Field measurements
Output 3 Improved livelihoods for the project participants through improved land management, income from PVCs, diversified income from agroforestry fruits, and better community governance systems.	%of participating households reporting increased farm productivity and diversified income sources linked to the project.	Livelihood baseline and follow-up surveys
Activity 3.1 Train 60,000 households on agroforestry SALM practices.	The number of smallholder farmers trained split by gender	Pre/post-training evaluations
Activity 3.2 Plant 50,000 fruit trees.	Number of fruit trees planted per year	Internal database

4.2 Carbon Indicators

Table 4.2 provides a summary of the carbon indicators that the project will monitor for each intervention, aligned with the interventions outlined in Section 1.1. The full details for each carbon indicator, including methodologies and frequency of measurement, are presented in Annex 7.

Intervention 1: Restoration (of soil)

This intervention focuses on restoring degraded soils through the planting of native tree species and through the adoption of SALM practices to enhance soil organic carbon, improve soil structure, and promote ecosystem rehabilitation

Table 4.2a Carbon indicators for soil restoration.

Carbon Indicator	Means of Verification
Area of degraded land restored under SALM and native tree planting.	Field measurement, GIS mapping, and farmer reports.
Number and species of native trees planted per hectare	Documentation of seedlings issued and planting records coordinated by ANA field teams.

Survival rate of native tree seedlings	Field survival assessments at 6 months and 3 years post-planting.
Soil organic carbon content (tC/ha)	Soil sampling and laboratory analysis every 5 years.
Above- and below-ground biomass per hectare	Field measurement and internal biomass calculations following IPCC guidelines.
DBH and height measurements for representative trees.	Periodic measurement of 10% sample plots in years 5, 7, and 10.
Plot location and GPS coordinates	Field measurement and spatial data.

Intervention 2: Improved land management through agroforestry

This intervention involves the establishment of agroforestry systems through border planting, alley planting, intercropping, and woodlots.

Table 4.2b Carbon indicators

Carbon indicator	Means of verification
Number of trees planted per hectare in agroforestry systems	Documentation of tree distribution and planting plans
Total project area under improved land management (ha)	Internal project documentation and GIS mapping
Annual survival rate of agroforestry trees	Field monitoring by ANA field coordinators
Change in DBH and tree height over time	Periodic field measurements on representative plots
Estimated carbon sequestration rates (tCO2e/ha/year)	Calculation based on growth and biomass models (see Annex 7)
Disturbed area under management	Field measurement and farmer self-reporting

ANA's field coordinators on-site will visit smallholder farmers on an annual basis to assess the parameters listed in the table above. Based on established minimum management or growth requirements, the participating farmers will receive payments for their ecosystem services.

The results of monitoring will be used for adaptive management on an ongoing basis to ensure that carbon sequestration targets are met.

Please see section 4.6 Progress Monitoring for more detailed monitoring plans.

4.3 Livelihood Indicators

We completed Table 4.3 to describe the indicators that will be used to monitor the livelihood status of the project participants and other local stakeholders, tied with the Sustainable Development Goals (SDGs).

Table 4.3 Livelihood Indicators

Contribution to SDGs	Livelihood Indicator	Means of Verification

SDG 1 - No poverty	Quantity of carbon payments distributed to participants	Annual monitoring
SDG 1 - No poverty	Increase in household income from the sale of project-derived products like fruits and nuts	Monitoring every 2-3 years
SDG 2 - Zero Hunger	Change in yield per acre for key crops	Baseline vs follow-up agricultural production records.
SDG 4 - Quality education	Total number of trainings delivered.	Project/administrative documentation
SDG 4 - Quality education	Number of farmers who can explain the benefits of SALM/agroforestry	Participant interviews
SDG 5 - Gender equality	Number of active women training sessions and in the implementation of project activities	Project/administrative documentation.
SDG 5 - Gender equality	Number of women, young, and elderly people	Project/administrative documentation.
SDG 8 - Decent work and economic growth	Number of active micro-enterprises linked to the project, including nurseries.	Project/administrative documentation

4.4 Ecosystem Indicators

We completed Table 4.4 to describe the indicators that will be used to monitor ecological conditions in the project areas, tied to the SDGs.

Table 4.4 Ecosystem Indicators

Contribution to SDGs.	Ecosystem Indicator	Means of Verification
SDG 12 - Responsible consumption and production	Proportion of farmers reducing agrochemical use	Annual surveys
SDG 15: Life on land	Number of living trees established	Annual monitoring with field measurement
SDG 15: Life on land	Number of ha restored	Annual monitoring with field measurement

Monitoring

4.5 Monitoring Plan

We refer to Annex 13 for the monitoring flowchart and detailed description of the specific monitoring and verification activities. In this section, we summarize the overall guidelines, responsibilities, and approaches used in monitoring the project.

Method.

The monitoring follows AR-ACM003 v2.0, with sampling approaches and protocols defined in Sections 4.2, 4.3, and 4.4. The project uses direct field measurement, farmer reporting, participatory surveys, and ecological assessments to ensure data reliability.

Each participating farmer has a project agreement and will be provided a Plan Vivo map, specifying performance-based milestones against which progress is assessed. Data points are recorded digitally using standardized monitoring forms and Kobo Toolbox to manage large datasets consistently across project areas.

Frequency.

1. ***Annual Monitoring.*** *Activity-based progress indicators are recorded on an annual basis, and annual reports summarize implementation progress, risk events, and household livelihood outcomes.*
2. ***5-yearly monitoring.*** *A full carbon monitoring round is carried out at least once every five years, including DBH measurements, above- and below-ground biomass surveys, and biodiversity assessments. This cycle ensures accuracy for vPVC issuance.*
3. ***Milestone-based checks.*** *Survival rate counts occur within the first year of planting, in year 3, and again in years 5, 7, and 10, alongside DBH sampling. Natural regeneration and faunal recolonization assessments begin in year 3, once vegetation cover is established.*
4. ***Ongoing field follow-up.*** *Disturbance events like pests, fires, cyclones, and illegal harvesting are reported throughout the year by field officers and community monitors.*

Responsibility.

Monitoring is a shared responsibility between the ANA project team and the participating communities. This is broken down as below:

1. *ANA field coordinators lead in data collection, including survival counts, DBH measurements, and ecosystem surveys.*
2. *Participating farmers are progressively trained to collect and record field data, especially ecosystem observations and survival counts to ensure sustainability and local ownership.*
3. *Project directors consolidate data, verify results, and prepare annual and 5-yearly monitoring reports submitted to Plan Vivo.*

Area and Sampling.

Representative sampling is applied across the three project areas. Plots with similar baseline conditions and interventions are grouped into strata, ensuring sampling is statistically robust. At least 7% of plots are sampled annually for routine ecosystem monitoring indicators (tree survival, hectares restored, agrochemical reduction). Biodiversity, faunal recolonization and soil health indicators are assessed through baseline and 5-yearly ecological surveys. For carbon stock monitoring, a 10% sub-sample of trees is measured with designated plots during each 5-year round. Plot locations are georeferenced (GPS) and revisited consistently over time.

Risk Mitigation.

Progress indicators for risk mitigation (disturbance events, agrochemical use, fire and cyclone occurrence) are recorded annually in farmer surveys and community meetings. The monitoring systems enable adaptive management. If survival rates, biomass growth, or biodiversity results fall below thresholds, corrective actions, including replanting, additional training, or enrichment planting are triggered, and payments are adjusted accordingly.

4.6 Progress Monitoring

The annual milestones/targets of the progress indicators are listed in Table 4.6, with the targets subdivided into three categories – full target achievement, partial target achievement, and missed target achievement.

There are the following consequences for certificate issuance and correlative actions that will be implemented if the yearly performance targets are not met (mitigation actions):

I. If the values for all indicators meet or exceed their performance target, the full issuance is received;
II. If one or more of the indicator values are below its performance target for one monitoring period, the full issuance is received, but corrective actions must be implemented;
III. If one or more of the indicator values are partially achieved for two consecutive monitoring periods, the full issuance is received, but corrective actions must be implemented;
IV. If one or more of the indicator values are missed for two consecutive monitoring periods or partially achieved for three consecutive monitoring periods, certificate issuance is withheld until corrective actions have been implemented and the performance target(s) have been reached.

Table 4.5 Progress Indicators

Progress Indicator (P #)	**Annual milestone or target**		
	Full Target Achievement	**Partial Target Achievement**	**Missed Target**
P1: The number of the smallholder farmers reporting reduced soil erosion and observable biodiversity improvements on their farms based on ecological assessment.	At least 75%	Between 50-75%	Less than 50%
P2: The number of ha restored under agroforestry and SALM practices. Adoption rates by participating farmers from 2025 onwards.	30,000 Ha of agricultural land restored during the project's first 10 years	Between 20,000 and 30,000 Ha of agricultural land restored during the project's first 10 years	<20,000 Ha of agricultural land restored over the first ten years.
P3: The number of trees planted per hectare with a mix of the different species planted during the project's first 4 years.	100 trees/ha	Between 75 and 100 trees/Ha	<75 trees/Ha
P4: Amount of carbon sequestration (tCO2/ha).	1.933 tCO2e/ha/year	Between 1 and 1.933 tCO2e/ha/year	<1tCO2e/ha/year
P5: Survival rate per year.	At least 65%	Between 50% and 65%	<50%
P6: %of participating households reporting increased farm productivity and diversified income sources linked to the project.	At least 65%	Between 50% and 65%	<50%
P7: The number of smallholder farmers trained split by gender	60,000 households trained, targeting 60% females.	Between 40,000 to 60,000 households trained	<40,000 households trained.
P8: Number of fruit trees planted per year	50,000	Between 30,000 and 50,000 fruit trees planted per year	<30,000 fruit trees planted per year.
P9: Number of inclusive training and awareness sessions	At least two inclusive training	At least one inclusive training	None conducted

conducted annually for women, widows, youth, and PWDs	sessions per county per year.	session per county per year.	
P10: % of female, youth, and PWD participants attending inclusive training and awareness sessions	>50% of total project participants reached through inclusive sessions	Between 30-50%	<30%
P11: Number of FPIC and community engagement meetings conducted annually	At least 2 FPIC and community engagement meetings held per county per year	1 per county per year	None conducted
P12: Number of project governance structures trained annually on governance and coordination	>1 training per county per year	Training held in 1-2 counties	None conducted
P13: % of project governance representatives reporting improved understanding of project management and inclusion principles	At least 80%	60-80%	<60%
P14: Annual community meeting per project region (minimum 1 per year)	1 community engagement per project region per year	None conducted	None conducted

4.7 Carbon Monitoring

The carbon monitoring scheme will follow a double track as follows:

- The performance indicators will be monitored annually throughout the crediting period, allowing follow-up on the activity-based indicators. This also underpins the carbon estimation as described in Annex 7.
- Carbon verification rounds will be organized every three-five years, allowing verification of estimated carbon sequestration and recalibration of the carbon model to fit the measured carbon sequestration rates based on field measurements. Every verification round will be verified by a VVB. The frequency of the VVB verifications could be accelerated in the future should the project expand.

4.8 Livelihood and Ecosystem Monitoring

Livelihood indicators are presented in Table 4.3 and are monitored in line with the overall monitoring framework described in Section 4.5 (Monitoring Plan). Ecosystem indicators are presented in Table 4.4 and are monitored through (i) annual routine monitoring and (ii) baseline and 5-yearly ecological survey rounds as described in Section 4.5. Relevant livelihood, inclusion, and ecosystem-related performance thresholds are defined in Table 4.5 (Progress Indicators P6–P13 and P1, where applicable) and are linked to the corrective actions and certificate issuance consequences described in Section 4.6 (Progress Monitoring).

To ensure consistency and traceability across the PDD, an indicator crosswalk is provided below to show the linkage between the livelihood/ecosystem indicators and the progress indicators used for performance tracking and corrective action triggers.

Indicator Crosswalk Table (Livelihood & Ecosystem Monitoring Alignment with Section 4.5 / Table 4.5)

Section/Table	Indicator	Frequency	Linked to Progress Indicators
Table 4.3	Carbon payments distributed	Annual	P6
Table 4.3	Yield per acre change	Baseline + every 2-3yrs	P6
Table 4.4	Living trees established	Annual	P5
Table 4.4	Hectares restored	Annual	P2
Table 4.4	Biodiversity index	Baseline + every 5yrs	P1

Additional livelihood and inclusion indicators in Table 4.3 correspond to progress monitoring indicators P7–P13 in Table 4.5, including training delivery, participation by gender and vulnerable groups, FPIC/community engagement, and governance structures.

4.8.1 Livelihood Monitoring

Livelihood monitoring will assess changes in household wellbeing and socio-economic outcomes resulting from project implementation, including carbon benefit-sharing, productivity impacts from improved land management, and diversified income sources from agroforestry products. Livelihood data will be collected through annual project monitoring, routine participant surveys, and periodic baseline-to-follow-up livelihood assessments every 2–3 years, as specified in Table 4.8.1.

Livelihood monitoring also supports performance-based project management and certificate issuance rules, with relevant thresholds and corrective action triggers defined in Table 4.5 (P6–P13) and consequences described in Section 4.6.

Table 4.8.1: Livelihood Monitoring

Contribution to SDGs	Livelihood Indicator	Means of Verification
SDG 1 - No poverty	Quantity of carbon payments distributed to participants	Annual monitoring
SDG 1 - No poverty	Increase in household income from the sale of project-derived products like fruits and nuts	Monitoring every 2-3 years
SDG 2 - Zero Hunger	Change in yield per acre for key crops	Baseline vs follow-up agricultural production records.
SDG 4 - Quality education	Total number of trainings delivered.	Project/administrative documentation
SDG 4 - Quality education	Number of farmers who can explain the benefits of SALM/agroforestry	Participant interviews
SDG 5 - Gender equality	Number of active women training sessions and in the implementation of project activities	Project/administrative documentation.

SDG 5 - Gender equality	Number of women, young, and elderly people	Project/administrative documentation.
SDG 8 - Decent work and economic growth	Number of active micro-enterprises linked to the project, including nurseries.	Project/administrative documentation

4.8.2 Ecosystem Monitoring

Ecosystem monitoring will focus on tracking ecological integrity and biodiversity co-benefits resulting from agroforestry, SALM, and restoration activities across the project areas. The ecosystem indicators are presented in Table 4.4 and are monitored through two complementary approaches:

1. Annual ecosystem monitoring, focusing on indicators that can be tracked through routine field assessments, farmer surveys, and field observations (e.g., survival counts, hectares restored, and agrochemical reduction); and
2. Baseline and 5-yearly ecological survey rounds, covering biodiversity, natural regeneration/faunal recolonisation, and soil health parameters.

Annual ecosystem monitoring supports ongoing adaptive management, while 5-yearly surveys provide higher-resolution ecological evidence for evaluation of long-term impacts and co-benefits. Where applicable, ecosystem-related performance thresholds are linked to progress indicators in Table 4.5 (including P1, P2 and P5).

Table 4.8.2 Ecosystem Monitoring

Contribution to SDGs	**Ecosystem Indicator**	**Means of Verification**	**Frequency**
SDG 12 - Responsible Consumption and Production	Proportion of farmers reducing agrochemical use	Annual farmer perception surveys and field observations	Annual
SDG 15 - Life on Land	Number of living trees established per hectare	Field measurements and survival counts by ANA field coordinators	Annual
SDG 15 - Life on Land	Number of hectares restored under agroforestry and SALM practices	Field measurement, GIS mapping, and restoration reports	Annual
SDG 15 - Life on Land	Biodiversity index (species richness and abundance in sample reports)	Baseline and 5-yearly ecological surveys	Every 5 years
SDG 15 - Life on Land	Evidence of natural regeneration and faunal recolonization in restored areas	Participatory ecosystem surveys and ecological assessments	Every 5 years
SDG 15 - Life on Land	Soil health improvement (soil	Soil sampling and farmer perception	Every 5 years

	organic matter, visible soil erosion reduction)	surveys	

Reporting

4.9 Annual Report

ANA will be responsible for the annual reports, which will be provided by Q1 of each year. The annual report will include all new participants enrolled in the program and all updated information regarding carbon, livelihood, and ecosystem benefits collected through monitoring activities. The report will also include the financial aspects related to costs and revenue generated, as well as the amounts of PVCs issued and retired, with corresponding benefit sharing with participants. Similarly, the report will focus on the results of the monitoring of environmental and social KPIs, as well as the results of the grievance mechanisms activated.

4.10 Record Keeping

All information related to the project has been collected with an initial simplified database (Excel spreadsheet), which includes basic information on project participants aggregated by counties and villages, coordinates, and the interventions. The database will be supplemented over time with new detailed variables, including carbon benefits (which will also be included in the project agreement), land management plan, and monitoring results.

5. Governance and Administration

5.1 Governance Structure

The schematic diagram of the governance of the Project Organizational Structure is presented in Figure 5.1. ANA will oversee the project coordination and implementation. ANA's Project Director for Carbon Projects is responsible for project documentation, management, and financial reporting. ANA's Director for Climate Smart Agriculture is responsible for project implementation and monitoring activities which include stakeholder engagements and management of Project Officers.

Project Officers are responsible for farmer recruitment, training, and distribution of seedlings through Field Coordinators. The Field Coordinators are also responsible for receiving grievances from farmers and resolving them to the Project Officer through the specified channel. Field Coordinators are drawn from the local community.

Both directors report to GECA's Founder, while Project Officers report to the Directors and the Field Coordinators report to the Project Officers. GECA will provide oversight of the project, registration, and financial considerations.

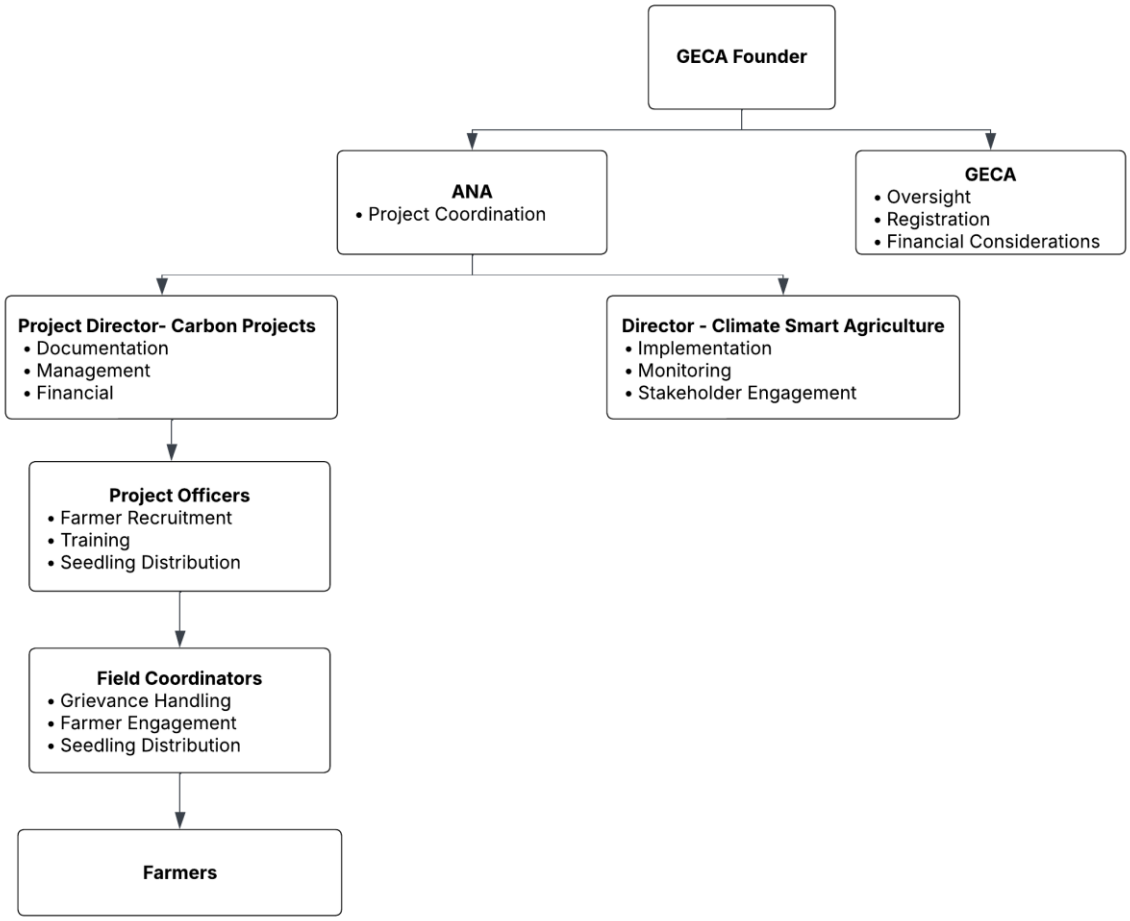


Figure 5.1: Schematized summary of the governance structure of the project.

5.2 Equal Opportunities

The project is implemented by GECA and ANA in partnership with smallholder farmers in Nyeri, Kirinyaga, and Laikipia, guided by the principles of equity, inclusion, and non-discrimination.

Participation is open to all community members regardless of gender, age, sexual orientation, or ethnicity, with targeted efforts to include individuals in situations of economic or social vulnerability. Community-led structures, including Community Forest Associations (CFAs), help oversee participation and minimize the risk of elite capture.

Internally, both organizations operate by following the same principles of inclusion and non-discrimination, starting with the selection process of employees and collaborators, with more than 50% of the workforce composed of women.

5.3 Legal and Regulatory Compliance

The project operates in full compliance with all relevant national and international policies, laws, and regulations governing land management, environmental protection, and GHG emission assessment.

Table 5.3 below summarizes the applicable legal and policy instruments and how the project ensures compliance with each.

A formal Letter of Approval from the relevant authorities responsible for land management and GHG emissions within the project regions is provided in Annex 15, confirming that the project does not contravene any national or regional laws or regulations.

Table 5.3: Legal and Regulatory Compliance

Policy, Law or Regulation	Level	Relevance	Compliance Measures
Climate Change (Amendment) Act, 2023	National	Provides a legal framework for carbon markets, climate mitigation, and adaptation measures at national and county levels.	The project integrates both mitigation (carbon sequestration) and adaptation (resilient farming systems) measures and aligns with carbon market requirements outlined in the Act
Environmental Management and Co-ordination Act (EMCA), 1999	National	Mandates Environmental and Social Impact Assessments (ESIA) and NEMA oversight for environmental projects.	The project undertook an Environmental and Social Assessment (ESA) and adheres to all environmental safeguards required by NEMA.
Land Act, 2012	National	Governs land ownership, tenure, and sustainable land use.	The project involves only landowners or legitimate land users who provide consent through FPIC, ensuring voluntary participation and lawful land use.
Wildlife Conservation and Management Act, 2013	National	Regulates wildlife conservation and management and addresses human-wildlife conflict.	The project collaborates with the Kenya Wildlife Service (KWS) to mitigate wildlife-farmer conflicts, particularly in Laikipia County.
The project collaborates with the Kenya Wildlife Service (KWS) to mitigate wildlife-farmer conflicts, particularly in Laikipia County.	International	Ensures the rights of indigenous and local communities through Free, Prior, and Informed Consent (FPIC).	The project obtained FPIC from all participating farmers and ensures ongoing engagement through inclusive consultations and grievance mechanisms.
International Labour Organization (ILO) Convention 169 on Indigenous and Tribal Peoples	International	Promotes participation, consultation, and non-discrimination of indigenous and tribal peoples.	The project applies inclusive participation, ensuring women, youth, and marginalized groups are fully represented in decision-making.
Plan Vivo Standards (2023)	International / Voluntary	Sets environmental and social safeguards for community-based carbon projects.	The project aligns with Plan Vivo standards through stakeholder consultations, FPIC, gender inclusion, and sustainable land management practices.

5.4 Financial Plan

The project to date has been funded through grant funding and donations. Grant funding will continue to be a source of revenue as the sale of carbon offsets sales up. To achieve the scale of this project through the 20-year crediting period, concessional debt financing will be sought from impact investors to cover the cost of the seedlings and monetary incentives for the farmers. The sale of the carbon offsets will be used for required compliance and regulatory fees as well as project administration and administration.

The financial plan in Annex 16 details the project budget associated with the described activities as well as the projected revenue generated from the sale of the carbon offsets.

5.5 Financial Management

Project finances are currently managed through the accounting software QuickBooks. Expenditures are managed and reported through Bank of America in the United States and through Stanbic Bank in Kenya. Oringo & Associates, Certified Public Accountants, in Nairobi Kenya prepares annual financials for ANA and GECA will use Smith, Sullivan and Brown PC, CPAs in Boston, Massachusetts pursuant to US state and federal laws for non-profits. These audits will be available three months after the end of the fiscal year (December 31 for both organizations).

For the public audit, the project will use Plan Vivo's Tool 16 to ensure transparency and inclusion of local stakeholders in the financial management. Three (3) annual public audit meetings will be held in the counties of project activities. The meetings will be announced through Telerivet and through local stakeholders like local nurseries, local government and Community Forest Associations. Financial information will be presented in a transparent and easy to understand way. Participants will be able to ask questions and review the financial mechanisms of the project.

Annexes

Annex 1 – Project Boundaries

Project boundary: Nyeri, Kirinyaga and Laikipia Counties

https://drive.google.com/file/d/1xbhAoJGH1dtrkMFyRfpMt9IIVpEVvQ26/view?usp=sharing

Nyeri coordinates
https://drive.google.com/file/d/1sIIRb5cZYbg4Y6yjgBgSC29ur5PYzfNN/view?usp=sharing

Kirinyaga coordinates

https://drive.google.com/file/d/15bdUBzNWeYHbLBYYpvL-O52ar4TL-LDT/view?usp=sharing

Laikipia coordinates

https://drive.google.com/file/d/1hRQWRS0fLdp8VxOhmFzEVWuMKgkOf0HD/view?usp=sharing

Kirinyaga polygons SR2022

https://drive.google.com/drive/folders/1RvuziUZ-9qNMB_XA7J6YGUhdn5t3y9go?usp=sharing

Annex 2 –Registration Certificate and Partner Agreements

Please find ANA's registration certificate attached, as below.

Certificate No. 02648

Republic of Kenya

MINISTRY OF LABOUR AND SOCIAL PROTECTION
STATE DEPARTMENT FOR SOCIAL PROTECTION
DEPARTMENT OF SOCIAL DEVELOPMENT

Certificate of Registration of Community Based Organization (CBO)

This is to Certify that

ARDHI NJEMA AGROFORESTRY COMMUN ITY BASED ORGANISATION

Group Name / Project

NTURUKUMA	NANYUKI	CENTRAL
Sub-Location / Ward	Location	Division
LAIKIPIA EAST	Constituency	LAIKIPIA
Sub-County		County
NUK/HUDC/061	LAIKIPIA EA ST	26/11/2019
Registration No.		Date of Registration

Is registered with the Department of Social Development by:

Name WAWERU MWANGI
County / Sub County Social Development Officer

20/05/2021
Date of Issue

Signature

DEPARTMENT OF SOCIAL DEVELOPMENT LAIKIPIA 20 MAY 2021

Kenya Vision 2030

Note: *The Contents of this Certificate should not be erased, altered or defaced in any way.*

Annex 3 – Initial Project Participants

Project	Name of	Location	Project	Extent of	Project	Start date	Requirement

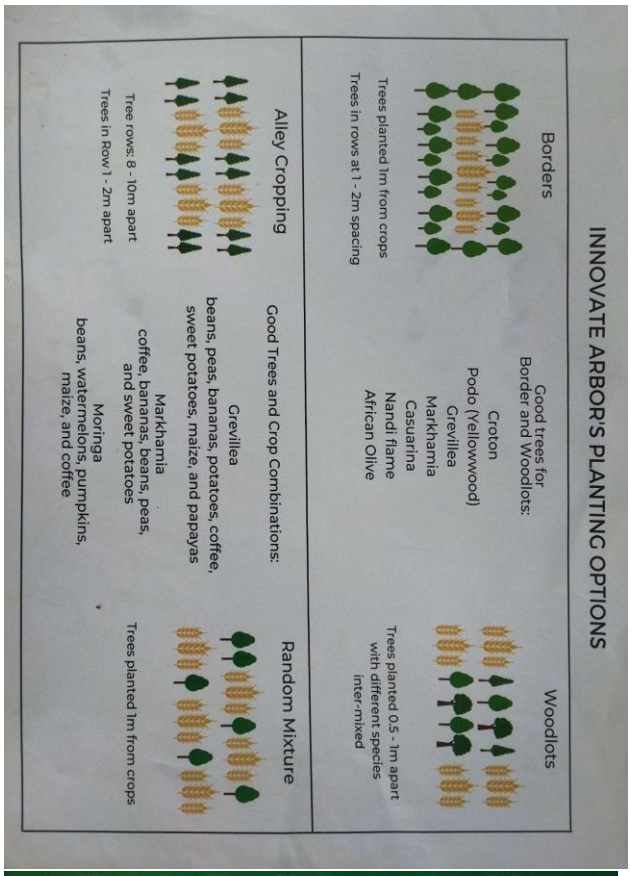
area	project participant		interventions	project area	agreement reference		2.3.1 and 2.3.2 met?
Nyeri		Nyeri	Agroforestry, SALM	15,000 Ha			
Kirinyaga		Kirinyaga	Agroforestry, SALM	10,000 Ha			
Laikipia		Laikipia	Agroforestry, SALM	5,000 Ha			

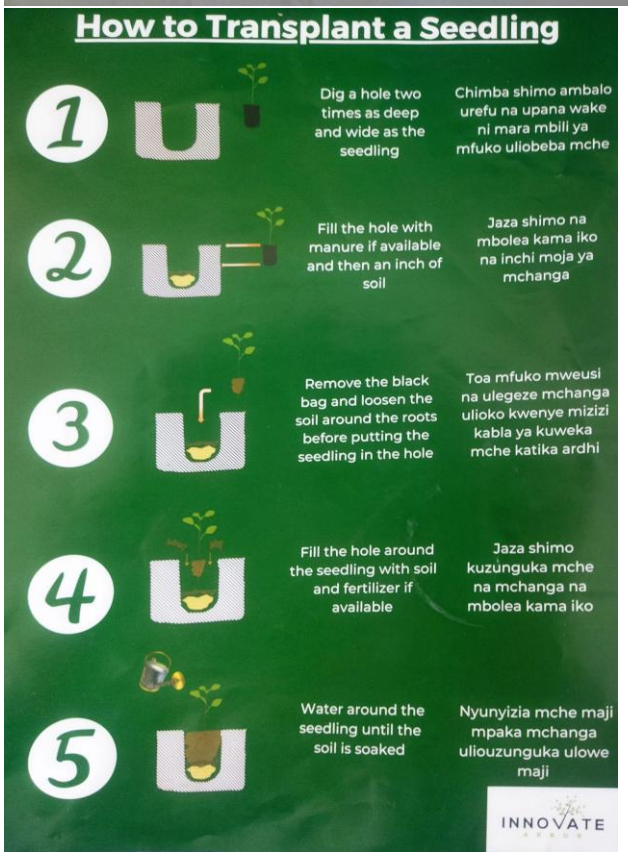
Please see spreadsheet (provided to Plan Vivo for internal use) for details of Initial Project Participants.

Annex 4 –Participatory Design

See participatory maps (Annex 11), participatory community sessions in Laikipia, Nyeri, and Kirinyaga are attached below together with the attendance lists.

Sample Project Awareness Material





Participatory Design - Attendance List

Personal information of participants redacted for publication – please contact Plan Vivo for access.

Annex 5 – Initial FPIC

Attendance sheets for the meetings held prior to key decisions being made.

Personal information of participants redacted for publication – please contact Plan Vivo for access.

Figure A5: Farmer trainings on Agroforestry systems in Laikipia in 2021

Annex 6 – Carbon Calculations Spreadsheet

For details of the calculations for the carbon benefits, we refer to the Excel files attached.

Annex 7 – Technical Specifications

Project Intervention:	Ardhi Njema Agroforestry (Restoration through agroforestry)
Version:	1.1
Date Approved:	Enter the date this version was approved for use by Plan Vivo.
Methodology:	PM001 Agriculture and Forestry Carbon Benefit Assessment Methodology
Modules/Tools:	Specific Plan Vivo modules and tools of Agriculture and Forestry Carbon Benefit Assessment Methodology: 1. PU001 Estimation of Baseline and Project GHG Removals by Carbon Pools in Plan Vivo Projects 2. PU002 Estimation of baseline and project GHG emissions from carbon pools in Plan Vivo projects. 3. PU003 Estimation of baseline and project GHG emissions from emission sources in Plan Vivo projects. 4. PU004 Estimation of GHG emissions from leakage in Plan Vivo projects. 5. PU005 Estimation of uncertainty of carbon benefit estimates in Plan Vivo projects.

Certificate Type(s):	fPVCs, rPVCs and vPVCs.

Applicability conditions

We refer to §1.2.1 for a description of the project boundaries and to the sections below for a description of the baseline scenario.

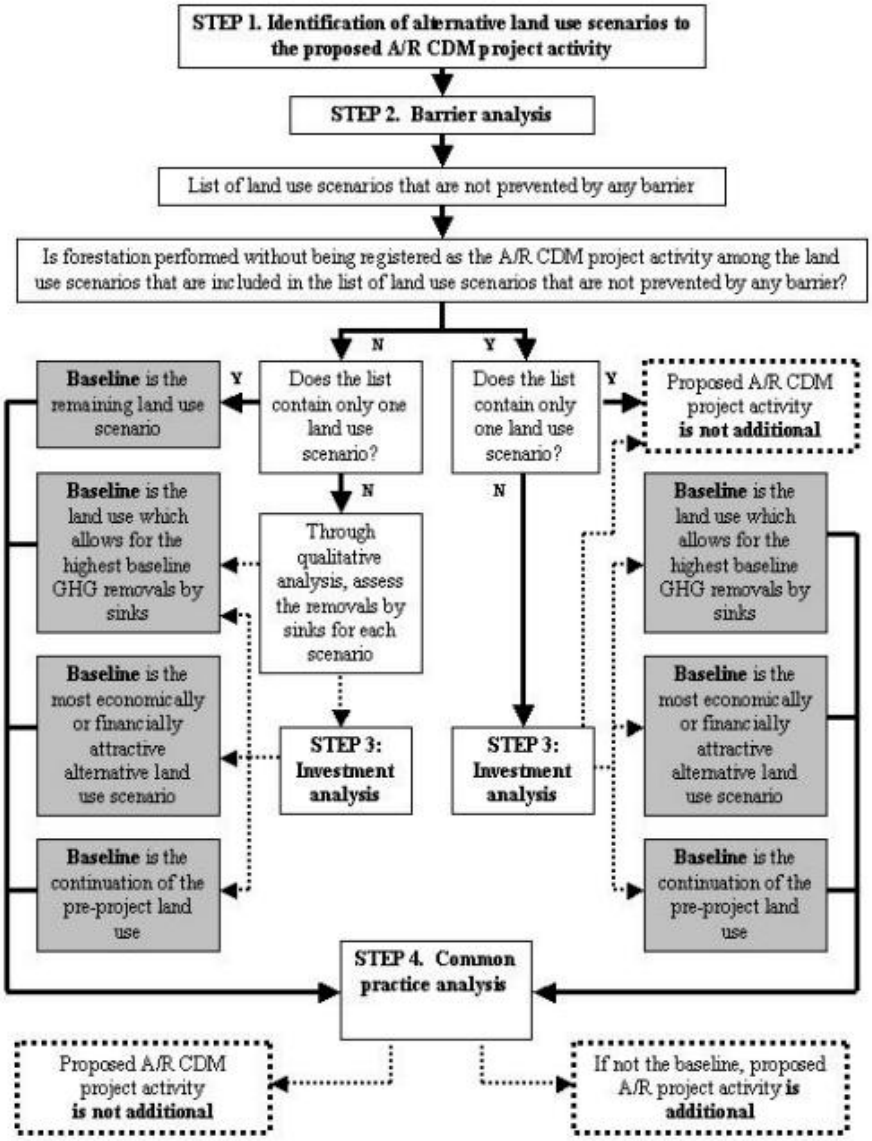
This technical specification only applies to the three counties – Nyeri, Kirinyaga, and Laikipia in Central Kenya. The project's baseline started with 600 smallholder farmers in 56 villages in Nyeri, 10 villages in Kirinyaga, and 4 villages in Laikipia, with each farmer availing 1 ha of land for project activities. These counties boast agriculture-friendly climates with ample rainfall, moderate temperatures, and diverse seasonal patterns that foster sustainable crop production.

The applicability conditions for the project zones and potential expansion zones are:

(i) Project implementation is subject to the explicit consent of all participating smallholder farmers.
(ii) The project zones must be confined to the three counties of Nyeri, Kirinyaga, and Laikipia.
(iii) Farmers must demonstrate a willingness to actively participate in the project.

Additionality

Below we describe the most likely land use scenario in the absence of the project interventions and the additionality of the interventions using AR-TOOL02 v07.0: "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities". We follow the following steps:



STEP 0: Preliminary screening based on the starting date of the Plan Vivo project activity.

The starting date of his activity was ____ 2020, as an agroforestry project. Later in 2024, when the Ardhi Njema Agroforestry team was enrolled into the Plan Vivo accelerator, the incentive from the Plan Vivo project was seriously considered in the decision to proceed with the project activity. At that time, the baseline measurement campaign was organized.

STEP 1: Identification of alternative land use scenarios.

Sub-step 1a. Define alternative scenarios to the proposed CDM project activity.

Based on the surveys carried out on our farmers and courtesy calls paid to various county government offices (incl. Ministry of agriculture – Nyeri, Kirinyaga, and Laikipia), we identify the following land use scenarios to be credible:

- Continuation of pre-project land use, which entails monocropping, excessive tillage, and use of synthetic fertilizers.

- Adoption of tree planting (agroforestry) and improved land management without carbon finance through individual efforts.

Sub-step 1b. Consistency with mandatory applicable laws and regulations.

The alternative land use scenarios are in compliance with mandatory legislation and regulations considering their enforcement in the project areas.

STEP 2: Barrier analysis.

Sub-step 2a. Identification of barriers that would prevent the implementation of alternative scenarios.

We identify no financial, technical, institutional, local tradition, prevailing practices, local ecological, social conditions, or land tenure barriers that would possibly hamper the continuation of the alternative land use to the proposed project activity. However, agroforestry and improved land management without extra funding from Plan Vivo certification is not a plausible scenario, given the amount of funding required to implement and scale the project.

Sub-step 2b. Eliminate alternative scenarios which are prevented by the identified barriers.

We eliminate the scenario of agroforestry and improved land management without extra Plan Vivo funding since it is not a plausible future scenario for improving the BAU scenario.

Sub-step 2c. Determination of baseline scenario (if allowed by the barrier analysis)

We do not include the implementation of agroforestry and improved land management without the project being registered as a Plan Vivo project in the list of land use scenarios that are not prevented by any barrier. This leaves us with one land use scenario (the continuation of pre-project land use). According to this tool, we will therefore continue to Step 4: Common practise analysis.

STEP 4: Common practice analysis.

We identify no similar previous or ongoing planting activities within the project regions similar to this proposed Plan Vivo project. However, there are various similar implementations around the project regions, specifically in Embu, Meru, and Murang'a counties. Ardhi Njema Agroforestry always asks farmers if they are part of any other carbon project as well as doing any other background checks before enrolling them into the proposed project. Similarly, this Plan Vivo project activity is not the baseline scenario, and hence, it is additional.

Below is a summary of the basic barriers the project activities are to overcome.

Improved Land Management through SALM	Main Barriers	Activities to Overcome Barriers
Technical	Farmers have limited knowledge on agricultural practices about soil and water conservation techniques that can boost production.	Training and awareness sessions that will include the project technical staff and relevant stakeholders. Ardhi Njema shall partner with tech companies to offer technology for on-farm data collection and monitoring that will be combined with ground truth data.

Restoration through agroforestry	Main Barriers	Activities to Overcome Barriers
Financial	Insufficient financial resources to procure seedlings, planting, maintenance, monitoring, and training of the staff and community. Limited finances to implement the project due to high upfront finances needed.	Resource mobilization activities to ensure sufficient upfront funds to scale up the project. The sale of credits through the Plan Vivo certificates will help secure finances to repay the investment fund. Ardhi Njema will provide seedlings free of charge to the farmers to ensure that everyone willing to implement agroforestry is equipped with seedlings.

Project activities

We refer to the table below for a summary of project activities and input needed to implement the project intervention.

Aim To enhance soil fertility, combat land degradation, and strengthen climate resilience among smallholder farmers while promoting carbon sequestration and improving rural livelihoods through agroforestry.		
	Description	**Assumptions/Risks**
Outcomes – Intended overall project aim		
Carbon Benefit- Increased carbon removal by the trees planted	The estimated 6 million trees to be planted in agroforestry systems will sequester atmospheric carbon from the atmosphere through photosynthesis and storage in biomass. SALM practices such as minimum tillage will improve the soil ability to sequester carbon that will be stored below ground. SALM cycles. Aerating manure stockpiles is also expected to reduce methane emissions by inhibiting methanogens. The carbon absorbed through this project will be monetized adding extra income to the farmers.	Trees planted by farmers will survive and grow, achieving expected carbon sequestration rates. Adoption of agroforestry practices will lead to reduced deforestation and land degradation. Adoption of various SALM practices will be done simultaneously in the same farms. The project will be registered with Plan Vivo and certified to sell carbon credits.

Livelihood Benefit- Increased crop yields and diversified farm products	The estimated 6 million trees that will be incorporated into the agricultural farms is expected to enhance soil fertility, therefore increasing food production. Additionally, availability of fruits trees from the estimated 500,000 fruit trees to be planted will provide diversified products from the farm. Farmers will enjoy economic stability due to reduced dependency on single crops and additional income from incentives and carbon credit benefits which lessens their vulnerability to market and climate shocks.	Farmers will take care of the trees to grow to maturity. Farmers will adopt SALM successfully. There will be sustained markets for agroforestry products such as Croton nuts. Farmers will enjoy additional income paid from incentives and sale of and carbon credits.
Ecosystem Benefit	The agroforestry systems will enhance biodiversity by supporting a variety of species, which leads to promotion of ecological balance and pest control. Native trees provide habitat and food for local wildlife, including birds, insects and small animals. The wildlife that could be considered as pests, such as rodents, are being managed using mechanical means. SALM will help restore soil biodiversity balance and promote beneficial organisms.	Farmers will take care of the trees to ensure a high survival rate. Farmers will adopt SALM successfully.
Outputs	**Activity & Description**	**Means/Resources (Inputs)**
Output 1: Improved climate change resilience through agroforestry and SALM practices.	A1.1 Restore ~30,000 ha of agricultural land by establishing agroforestry systems and implementing SALM practices (mulching, terracing, composting, cover cropping).	Seedlings, SALM inputs (mulch, compost, seeds), technical support, farmer labour.
	A1.2 Plant ~6 million trees (Grevillea robusta, Croton megalocarpus, Vitex keniensis, and fruit trees) at an average density of 100 trees/ha.	Nursery infrastructure, watering equipment, planting labour, and maintenance tools.
	A1.3 Regular monitoring and maintenance of planted areas to ensure survival and soil recovery.	Monitoring tools, lead farmers, data collection applications.

Output 2: Increased GHG reduction and removal through carbon sequestration.	A2.1 Manage and replace trees to maintain survival and carbon stock growth.	Technical assistance, replanting materials, data collection systems.
	A2.2 Conduct annual GHG measurements using PM001.	Field staff, carbon accounting tools, and monitoring software.
Output 3: Improved livelihoods and community governance.	A3.1 Train 60,000 households on agroforestry and SALM practices.	Training modules, field demonstrations, facilitation support.
	A3.2 Plant 500,000 fruit trees to diversify household income.	Fruit seedlings, nursery materials, and planting equipment.
	A3.3 Conduct inclusive annual training sessions for women, widows, youth, and PWDs to promote equitable participation.	County Gender Office collaboration, venues, training materials.
	A3.4 Conduct annual FPIC and community engagement meetings to maintain transparency and consent.	Community meeting logistics, liaison officers, information materials.
	A3.5 Conduct annual governance training for lead farmers and local committees to enhance accountability and coordination.	Facilitators, training venues, and learning materials.

Carbon benefits

Crediting Period

State the crediting period over which carbon benefits are estimated.

The crediting period selected is 20 years.

Carbon Pools and Emission Sources

List the carbon pools and emission sources included in the estimation of carbon benefits and provide justification for any excluded carbon pools or emission sources.

These technical specifications are developed using Module PU001. We include the following carbon pools:

Carbon pool	Included?	Justification/Explanation
Aboveground woody biomass	Yes	This is a potentially significant pool and is considered for tree planting and agroforestry activities.

Belowground woody biomass	Yes	This is a potentially significant pool and is considered for tree planting and agroforestry activities.
Non-tree biomass	No	
Deadwood	No	
Litter	No	
Soil organic carbon	No	
Wood products	No	Wood products are not accounted for, and are conservatively excluded.

The project's intervention targets smallholder farms that are largely devoid of trees, with the assumption that the current woody biomass stock on these farms would remain static under both the baseline scenario and under the project intervention scenario.

Baseline Emissions/Removals

We used AR-TOOL02 v1.0 to determine the most likely land use scenario in the absence of the project interventions and the additionality of project interventions with the relevant specifications taken from the Plan Vivo Agriculture and Forestry Carbon Benefit Assessment, methodologies PM001, PU001, and PU002.

This reference scenario and additionality will be re-evaluated at least every 10 years.

Calculation of baseline removals by carbon pools.

The Zero Baseline claim was developed following Section 5 of the AR-TOOL-14 v4.2. As confirmed in Section 3.1 and in the section Additionality of this Annex, the most likely reference scenario is considered to be the land use prior to the implementation of the project activity. In some cases, the biomass stock in the project area is different from zero due to the presence of scattered trees

Based on survey data and field assessments, the most likely land use scenario in the absence of the project is continued subsistence mixed farming, with intermittent fallow periods, scattered trees for fuelwood, timber, or boundary marking, and ongoing degradation due to poor land management.

Although there are existing trees and biomass in the project areas, these are typically harvested within short cycles for their products or to clear land for crops. Therefore, the carbon stocks of aboveground woody biomass, non-woody biomass, litter, deadwood, and soil organic carbon are assumed to be in a dynamic equilibrium, with no net increase over time. This means that the baseline land use is not resulting in long-term net sequestration of carbon, and in fact, may be declining or stable at best.

This was also confirmed through the surveys, where farmers noted use of chemical fertilizers, frequent land clearing, and removal of crop residue for livestock feed, practices that further limit the potential for soil organic carbon accumulation or biomass regeneration in the absence of the project.

Therefore, in line with AR-TOOL14 v4.2, Section 5, the net GHG removals under the baseline scenario can conservatively considered to be zero, supported by meeting the conditions under both Point 11 and Point 12 as follows:

Point 11:

d) The project will not harvest or remove any existing trees; rather, these will be left undisturbed and monitored throughout the project.
e) The implementation of agroforestry and SALM practices is not expected to cause mortality to the existing pre-project trees.
f) The carbon stocks of pre-project trees will not be included in project carbon accounting but their existence will be documented and monitored as part of the baseline integrity.

Point 12:

At least one of the required conditions is met:

f) The land is subjected to periodic cycles such as fallowing, burning, and reclearing, leading to oscillations in biomass between minimum and maximum levels. This is a common pattern in the project areas where soil fertility and productivity are heavily depleted over time.

The project satisfies both Point 11 and 12 of AR-TOOL 14. Regarding point 11, the project is not harvesting the remaining existing trees in the project area, the existing trees will not be affected by planting, and the project will not count the carbon of the existing trees. However, the survival of these trees will be monitored. Regarding point 12, the project clearly satisfies sub-item F.

In conclusion, under the prevailing land use, based on Equation 1 under the PM001 methodology:

- Net removals for aboveground woody biomass are zero due to the periodic harvesting.
- No long-term biomass accumulation for non-woody biomass is expected.
- No significant belowground biomass is sustained without permanent vegetation.
- Both litter and deadwood are periodically removed or burned.
- Due to the ongoing degradation, the exposure of topsoil, poor residue management, and limited composting, there is a stagnant/declining levels of soil organic carbon
- No long-term carbon storage in harvested wood products is expected under the baseline, as materials are typically used in short-lived applications.

Therefore, based on Equation 1 of PM001 and the supporting modules, net GHG removals under the baseline scenario are set to zero for all carbon pools.

Baseline monitoring data will be collected whenever changes are highlighted during the project activity. The monitoring will be shared with the Plan Vivo secretariat as soon as possible through the annual reporting process, at the latest by the second annual report.

Expected Project Emissions/Removals

For details of the calculations for the carbon benefits, we refer to the Excel files attached.

Potential Leakage

Leakage is defined as a reduction in carbon stocks or increase in greenhouse gas emissions outside the project area, as a result of the project activities. On the smallholder farms, both sustainable and cash crop farming can continue as before. Yet, the main potential source of agroforestry leakage

would clearly come from displaced grazing, i.e., burning pressure displaced towards other nearby areas because grazing is no longer possible within the project areas.

This technical specification uses AR-TOOL15 version 2.0 to estimate leakage significance: A/R Methodological tool – Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity. The tool, under Section 10, states that: "Leakage emission attributable to the displacement of grazing activities under the following conditions is considered insignificant and hence accounted as zero (applicable conditions are underlined):

a) Animals are displaced to existing grazing land and the total number of animals in the receiving grazeland (displaced and existing) does not exceed the carrying capacity of the grazing land;
b) Animals are displaced to existing non-grazing land and the total number of animals displaced does not exceed the carrying capacity of the receiving grassland;
c) Animals are displaced to cropland that has been abandoned within the last five years;
d) Animals are displaced to forest lands, and no clearance of trees, or decrease in crown cover of trees and shrubs, occurs due to the displaced animals;
e) Animals are displaced to zero-grazing system.

Observation of leakage was discussed during the stakeholder engagement meetings, and will be included in the annual monitoring targets (Section 4), and the current project areas cannot be important or designated grazing lands.

The above conditions are safeguarded as applicability conditions: the leakage risk from displaced grazing is insignificant.

Uncertainty

We refer to Section 8.2 of the AR-TOOL14 V4.2 which states that "Ex ante estimation (projection) of carbon stock in tree biomass is not subjected to uncertainty control, although the project participants should use the best available data and models that apply to the project site and the tree species". It is therefore not necessary to control for uncertainty as described in PU005.

Expected Carbon Benefits

We refer to the Tables below to summarize the Expected Carbon Benefits.

Expected Carbon Benefits Summary

Project Intervention	Baseline Emissions (t CO_2e/ha)	Project Emissions (t CO_2e/ha)	Leakage Emissions (t CO_2e/ha)	Carbon Benefit (t CO_2e/ha)
Agroforestry for soil and biodiversity restoration	**0**	**-167.2 tCO2e/ha**	**0%**	**-167.2 tCO2e/ha**

**Based on AR-TOOL14 v4.2 Section 5*

Plan Vivo Certificate Potential

Project Intervention	Carbon Benefit (t CO_2e/ha)	Project Area (ha)	Total Carbon Benefit (t CO_2e)	Risk Buffer (t CO_2e/ha)	Potential PVCs (t CO_2e)

Agroforestry for soil and agrobiodiversity restoration	167.2	30,000	1,053,961	20%	843,169
TOTAL	**167.2**	**30,000**	**1,053,961**	**20%**	**843,169**

Monitoring

The project will rigorously keep track of the performance of each survey plot over time. Each smallholder farmer has a project agreement with a farm map, along with a monitoring scheme specifying the performance-based milestones.

Milestone-based monitoring scheme for each smallholder plot

Time of measurement (year)	**Performance-based milestone**	**Method of measurement**
0 (Within one year of planting)	At least 50% of the planned number of trees is planted.	Physical counting of all new trees planted while counting all the existing trees
1	100% of the planned number of trees planted.	Physical counting of all the new trees planted
3	At least 65% of the trees planted surviving	Physical counting of all the surviving trees
5	An average DBH of at least __ cm	DBH measurements based on a representative sample of at least 10% of the trees concerned
7	An average DBH of at least __ cm	DBH measurements based on a representative sample of at least 10% of the trees concerned
10	An average DBH of at least __ cm	DBH measurements based on a representative sample of at least 10% of the trees concerned

All the project plots are visited by the ANA field coordination team in the years specified in the monitoring table. At the first three milestone checks, all planted trees are observed to count the number planted and the survival rate. At the last three milestone checks, diameter at breast height is measured for every project plot at a representative subpopulation of that plot, with the subpopulation equal to 10% of the total planted trees in that plot. The subpopulation of the planted trees is sampled during linear transect walks crossing the project plot and recording every tree

encountered (until the 10% target is reached). Alongside DBH measurements, species, number of trees, and health status will be recorded as well.

Successful evaluation is determined by a combination of on the ground team judgement as well as office data analysis. If both analyses suggest that the farmer has met the target, full payments are received every year. If the target has not been met but the threshold is achieved, partial payment is made and corrective actions implemented. If the threshold is not met, payments are withheld until targets are reached the following year.

The use of funds acquired from agroforestry projects will be divided into two broad categories. 40% will go to program operations and development, whereas the remaining 60% will be sent directly to the smallholder farmer's accounts. The funds will be distributed periodically over a twenty-year period based on the milestones above.

Annex 8 – Exclusion List

Activities	**Included in Project ('Yes' or 'No')**
Any project activities leading to or requiring the destruction [1] of critical habitat [2] or any forestry project which does not implement a plan for improvement and/or sustainable management.	No
Any activity which could be associated with the significant impairment of areas particularly worthy of protection of cultural heritage (without adequate compensation in accordance with international standards).	No
Trade in animals, plants or any natural products not complying with the provisions of the CITES/Washington convention [3].	No
Destructive fishing methods or drift net fishing with a net more than 2.5 km in length, explosives and/or poison.	No
Large-scale commercial logging operations for use in primary tropical moist forest.	No
Production or trade in wood or other forestry products other than from sustainably managed forests [4].	No
Exploitation of diamond mines and marketing of diamonds where the host country has not adhered to the Kimberley Process.	No
Activities involving harmful or exploitative forms of forced labour [5] or harmful child labour [6].	No
Projects that include involuntary physical displacement and/or forced eviction.	No
Production or activities that encroach on lands owned, or claimed or occupied by Indigenous Peoples, without full documented consent of such peoples.	No
Harmful and unsafe production, use, sale or trade of pharmaceuticals, ozone layer depleting substances [10], and other toxic [11] or dangerous materials such as asbestos or products containing PCB's [12], wildlife or products regulated under CITES, including all products that are banned or are being progressively phased out internationally	No
Production or trade of arms, ammunition, weaponry, controversial weapons, or components thereof (e.g., nuclear weapons and radioactive ammunition, biological and chemical weapons of mass destruction, cluster bombs, anti -personnel mines, enriched uranium).	No
Procurement and use of firearms.	No

Provision of finances to military institutions involved in conservation or security activities.	No
Production or trade of strong alcohol intended for human consumption or other alcoholic beverages (excluding beer and wine).	No
Production or trade of tobacco and other drugs	No
Gambling, gaming establishments, casinos or any equivalent enterprises and undertaking [10].	No
Any trade related to pornography or prostitution.	No
Production or trade in radioactive material. This does not apply to the procurement of medical equipment, quality control equipment or other application for which the radioactive source is insignificant and/or adequately shielded	No
Production or trade in unbound asbestos. This does not apply to the purchase or use of cement linings with bound asbestos and an asbestos content of less than 20%.	No
Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.	No
Transboundary trade in wastes, except for those accepted by the Basel Convention and its underlying regulations [11].	No
Any activity leading to an irreversible modification or significant displacement of an element of culturally critical heritage [12].	No
Production and distribution, or investment in, media that are racist, antidemocratic or that advocate discrimination against a part of the population.	No
Projects involving the planting or introduction of invasive species	No
Projects that increase the dependency of primary participants and other stakeholders on fossil fuels.	No

Notes:

[1] Destruction means (1) the elimination or severe reduction in the integrity of a habitat/area caused by a major and long-term/prolonged change in land-use or water resources or (2) the modification of a habitat such that this habitat's ability to fulfil its function/ role is lost.

[2] The term critical habitat encompasses natural and modified habitats that deserve particular attention. This term includes (1) spaces with high biodiversity value as defined in the IUCN's classification criteria, including, in particular, habitats required for the survival of endangered species as defined by the IUCN's red list of threatened species or by any national legislation; (2) spaces with a particular importance for endemic species or whose geographical range is limited; (3) critical sites for the survival of migratory species; (4) spaces welcoming a significant number of individuals from congregatory species; (5) spaces presenting unique assemblages of species or containing species which are associated according to key evolution processes or which fulfil key ecosystem services; (6) and territories with socially, economically or culturally significant biodiversity for local communities. Primary forests or high conservation value forests must also be considered as critical habitats

[3] https://cites.org/eng/disc/text.php

[4] Sustainably managed forests are forests managed in a way that balances ecological, economic and socio-cultural needs.

[5] Forced labour means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

[6] Harmful child labour means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development. Employees must be at least 14 years of age, as defined in the ILO's Declaration on the Fundamental Principles and Rights at Work (C138 – Minimum Age Convention, Article 2), unless local laws require compulsory school attendance or a minimum working age. In such circumstances, the highest age requirement must be used.

[7] Any chemical component which reacts with, and destroys, the stratospheric ozone layer leading to the formation of holes in this layer. The Montreal Protocol lists Ozone Depleting Substances (ODS), their reduction targets and deadlines for phasing them out

[8] Including substances included under the Rotterdam Convention, Stockholm Convention and WHO "Pharmaceuticals: Restrictions in Use and Availability".

[9] PCBs (polychlorinated biphenyls) are a group of highly toxic chemical products that may be found in oil-filled electrical transformers, capacitors and switchgear dating from 1950 to 1985.

[10] Any direct financing of these projects or activities involving them (for example, a hotel including a casino). Urban improvement plans which could subsequently incorporate such projects are not affected.

[11] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal (1989).

[12] "Critical cultural heritage" is considered as any heritage element recognised internationally or nationally as being of historical, social and/or cultural interest.

Annex 9 - Environmental and Social Screening Report

Guidance on use

Background

- The questionnaire includes questions aligned with the Plan Vivo Standard Environmental and Social Safeguards (Section 3.9, V5.0) and other Safeguard Provisions that are embedded in V5.0 of the Standard (namely Stakeholder Engagement, Stakeholder Consultation, Free Prior and Informed Consent, Grievance Redress Mechanism).

The questionnaire also draws from the Plan Vivo Environmental and Social Policy Framework (ESPF)

- The questionnaire is structured around the IUCN ESMS Questionnaire, which itself is designed to be aligned with the IUCN ESMS (2016), and the World Bank Environmental and Social Framework (2017), including World Bank Standards 1-10.
- The number of questions has been limited in this version of the questionnaire to ensure that it is practical and user-friendly.
- The purpose of the questionnaire is to establish: 1) the project risk rating; 2) the significance of risks and impacts; 3) alignment with safeguard provisions; 4) the need for further E&S assessment during project design; 5) the likely safeguard plans that should be developed.
- Due to the early stage in project design, the questionnaire is not designed to assess alignment with the Plan Vivo Standard requirements, but rather prompt projects as to what will be expected regarding those requirements that relate to E&S safeguards.
- Any social and environmental risks must inform the design of the *Project*.

Requirement

- As per the Plan Vivo Standard v5, every project must conduct a screening of environmental and social risks and impacts at the PIN stage of project design. The questionnaire and screening report are to be submitted alongside the PIN to the Plan Vivo Foundation.

Process for use of the E&S questionnaire

- The Project Coordinator is to fill in the “Project coordinator response” section of the questionnaire. This is the column shaded light grey.
- Once completed by the Project Coordinator, the Plan Vivo Foundation Project Officer and E&S reviewer is to fill in the “E&S reviewer comments” section of the questionnaire. This includes filling in the “E&S reviewer conclusions”.

- The screening report is then completed at the end by the Plan Vivo Foundation E&S reviewer, and the results are shared and discussed with the Project Coordinator.

Establishing significance of risks and impacts

Table 1 illustrates how risk significance can be established based on an estimate of likelihood of something happening, and the impact should it occur. This likelihood-magnitude matrix can be used by the Project Officer and the E&S reviewer to estimate the risk and impact significance of the E&S risk areas indicated in the E&S questionnaire **Section B**, below. Note that while the questionnaire focuses on key topics and issues that are common to natural resource management projects, the project coordinator should include other known E&S risks and impacts associated with the planned project.

Likelihood represents the possibility that a given risk event is expected to occur. The likelihood should be established using the following five ratings:

- *Very unlikely to occur (1)*
- *Not expected to occur (2)*
- *Likely – could occur (3)*
- *Known to occur - almost certain (4)*
- *Common occurrence (5)*

Impact (or consequence) refers to the extent to which a risk event might negatively affect environmental or social receptors – see below criteria distinguishing five levels of impacts:

Table 1: Rating impact of a risk area

Severe (5)	Adverse impacts on people and/or environment of **very high magnitude**, including **very large scale** and/or spatial extent (large geographic area, large number of people, transboundary impacts), cumulative, **long-term (permanent and irreversible**); **receptors** are considered **highly sensitive**; examples are severe adverse impacts on areas with high biodiversity value[1]; severe adverse impacts to lands, resources and territories of indigenous peoples; significant levels of displacement or resettlement with long-term consequences on peoples' livelihood; impacts give rise to severe and cumulative social conflicts with long-term consequences.
Major (4)	Adverse impacts on people and/or environment of **high magnitude**, including **large scale** and/or spatial extent (large geographic area, large number of people, transboundary impacts), of certain duration **but still reversible** if sufficient

	effort is provided for mitigation; receptors are considered sensitive; examples are adverse impacts on areas with high biodiversity value; adverse impacts to lands, resources and territories of indigenous peoples; significant levels of displacement or resettlement with temporary consequences on peoples' livelihood; impacts give rise to social conflicts which are expected to be of limited duration.
Medium (3)	Adverse impacts of **medium magnitude**, **limited in scale** (small area and low number of people affected), **limited in duration** (temporary), impacts are relatively predictable and can be avoided, managed and/or mitigated with known solutions and straight forward measures.
Minor (2)	Adverse impacts of **minor magnitude, very small scale** (e.g. very small affected area, very low number of people affected) and only short duration, may be easily avoided, managed, mitigated.
Negligible (1)	Negligible or no adverse impacts on communities, individuals, and/or on the environment.

Table 1: Rating significance of a risk area (Source: IUCN ESMS questionnaire, 2020)

		Likelihood of occurrence				
		Very unlikely to occur (1)	*Not expected to occur (2)*	*Likely – could occur (3)*	*Known to occur - almost certain (4)*	*Common occurrence (5)*
Magnitude	*Severe (5)*	Moderate	Substantial	High	High	High
	Major (4)	Low	Moderate	Substantial	Substantial	High
	Medium (3)	Low	Moderate	Moderate	Moderate	Substantial
	Minor (2)	Low	Low	Moderate	Moderate	Moderate
	Negligible (1)	Low	Low	Low	Low	Low

Establishing project risk category

The project risk category will be determined based on an understanding of the types of potential E&S risks and impacts associated with the project, and the availability of appropriate and known mitigation measures. Most Plan Vivo projects are thought to be of either low or moderate risk. If high risk projects are identified, the E&S impact assessment would look to understand the alternative project designs available to reduce the potential risks and impacts.

Table 2: Rating significance of a risk area (Source: IUCN ESMS questionnaire, 2020)

Risk Category	**Definition**
Low	Insignificant or low potential environmental and social risks and impacts have been identified. No additional management measures are required; no Environmental and Social Management Plan (ESMP) section of the PDD required.
Moderate	Moderate and/or substantial potential adverse risks and impacts have been identified, in one or more risk areas. These risks and impacts can be mitigated through known mitigation measures, such as a Stakeholder Engagement Plan, livelihood restoration plan, or through the project's ESMP.
High	High risks and impacts that are potentially diverse and irreversible, and for which standard solutions are not sufficient to manage, and for which specialist safeguard plans and expertise is required.

Alignment with safeguard provisions

Section C of the questionnaire refers to the Plan Vivo Standard (V5.0) safeguard provisions which are integrated into the Standard. These include:

- *Stakeholder engagement and consultation*
- *Free, Prior and Informed Consent*
- *Grievance Redress Mechanism*

The project coordinator will answer the questions related to these provisions, and clarify the project's intentions to meet these Standard requirements during the project design phase.

Environmental and Social Assessment

The E&S questionnaire should determine what E&S assessment is required during the project design phase (PDD development). For low and moderate risk projects, a tailored E&S assessment is required. For high-risk projects, an Environmental and Social Impact Assessment (ESIA) is required. The project coordinator should consider in responses what further assessment of risks and impacts is required, and the E&S reviewer will comment on this and include a summary in the Screening Report section.

Safeguard Plans

The E&S questionnaire should determine which Safeguard Plans are required by the project. For low risk projects, it is unlikely that an ESMP will be required. For moderate risk projects, and ESMP will be required. Projects will, according to the Standard, also require a mandatory Stakeholder Engagement Plan and a Grievance Redress Mechanism.

Some projects might require specialist plans, such as an Indigenous Peoples Plan (IPP) or a Livelihood Restoration Plan.

SECTION A: PROJECT INFORMATION	
Project title:	**Ardhi Njema Agroforestry**
Project coordinator:	**Green Earth Climate Action**
Country:	**Kenya**
Geography/ landscape:	**Central Kenya; Nyeri, Laikipia and Kirinyaga counties.**
Project summary:	**The project works with ANA Community Based Organisation to implement an agroforestry activity. Protection of crops by restoring agroforestry crops around ~600 smallholders' farmlands, over 300 ha. Improved land management intervention also to train farmers in planting and management techniques. Potential to expand in the future to ~60,000 smallholders over 30,000 ha.**
Name and role of project coordinator staff member filling this questionnaire:	**Filled in with v1 of PIN (submitted 08/07/24).**
Confirm that the Plan Vivo Exclusion List is appended to this E&S questionnaire:	**Yes, copied from PIN.**

SECTION B: POTENTIAL E&S RISKS AND IMPACTS			
Topic	**Question**	**Project coordinator response**	**E&S reviewer comments**
E&S Risks and Impacts			
Vulnerable Groups	Are there vulnerable or disadvantaged groups or individuals, including people with disabilities (consider also landless groups, lower income groups less able to cope with livelihood shocks/ stresses) in the project area, and are their livelihood conditions well understood by the project?	*Yes. The project has undertaken baseline assessment of the target area and any vulnerable groups will be taken into consideration when making any project decisions.* *The extent of vulnerability can be understood from various perspectives, mainly from gender, youth or poverty lenses. Census data sheets have been used to provide poverty baselines, and gender disaggregation has also been derived from the same documents.*	*OK – this has been realised at PIN stage and is expected to be fleshed out during the project design process. The PDD should demonstrate how these assessments and consultations have impacted on the projects' design.*
	Is there a risk that project activities disproportionately affect vulnerable groups, due to their vulnerability status?	*No. Careful consideration is done to ensure that vulnerable groups benefit from project activities as well.* *There will be flexibility in developing safe landing spaces for women and youth, who will be encouraged to participate as family members owning land with clear title.*	*OK*
	Is there a risk that the project discriminates against vulnerable groups, for example regarding access to project services or benefits and decision-making?	*No. All groups will have free access to the project and voluntarily choose to participate.* *It should be noted that project enrolment will be limited to those who have absolute ownership of their land, which carries the inherent risk of excluding those who do not have secure land tenure: this category could potentially include the poorest members with no*	*OK – this is good to hear. Do you know how to project will ensure this yet? If so, please describe. If not, please provide thorough details at PDD stage.*

		documented rights to the land, women and youth who's ownership of land is limited and controlled by older male family members. The model adopted is one that treats farms as 'family –owned' hence providing space for women and youth to participate even if titles may be in the names of the husbands.	
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2, the project has done well to assess the vulnerable and marginalised groups in the area at PIN stage and the documentation shows the extent of the consultation. Implementation of the outputs of these meetings into project design through PDD stage means this risk is unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: 3, if this risk were to occur it would impact a significant number of people in a substantial way.* *Risk significance:* ***Moderate***			
Gender equality	Is there a risk of adverse gender impacts due to the project/ project activities, including for example discrimination or creation/exacerbation or perpetuation of gender-related inequalities?	*Possibly. To address this, the project incorporated gender inclusivity throughout the development process, including consulting with stakeholders during the stakeholder engagement process. As noted, the project will promote gender and youth inclusivity through education and awareness creation via annual training. This will be quantified and monitored through meeting attendance and will be monitored every five years to evaluate the effectiveness of the training.*	*OK – a description of these actions should be included at PDD stage. The GESI specialist should also be identified and their impact quantified through the project design process.*
	Is there a risk that project activities will result in adverse impacts on the situation of women or girls, including their rights and livelihoods? Consider for example where access restrictions disproportionately affect women	*No. Women and girls will benefit from various activities in the project. The project also recognizes that much of the work on the farm is carried out by women, but training on family-wide inclusion in project activities will address this.*	*OK – as above.*

	and girls due to their roles and positions in accessing environmental goods and services?		
	Is there a risk that project activities could cause or contribute to gender- based violence, including risks of sexual exploitation, sexual abuse or sexual harassment (SEAH)? Consider partner and collaborating partner organizations and policies they have in place. Please describe.	*No. Careful screening of partner organisations that may be involved in the project will be done to ascertain that their policies are in line with the project coordinator on SEAH.*	*OK – this is good to hear, thank you.*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2, the project has a good understanding on the position and opinions of women and girls in the project area and management provisions are already in place. More detail needs to be provided through the project design phase, but this consultation mean this risk is unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: If this risk were to occur it would impact a moderate number of people in a relatively minor way.* *Risk significance:* ***Low***			
Human Rights	Is there a risk that the project prevents peoples from fulfilling their economic or social rights, such as the right to life, the right to self-determination, cultural survival, health, work, water and adequate standard of living?	*No. The project enhances human rights, especially enhancing the right to food, health and income from the project activities. It is envisaged that since the project activities will lead to greater empowerment, enhanced access to capital and information, the participating communities will benefit by enlarging their negotiated agency and hence increase their access to life supporting opportunities.*	*OK – how?*
	Is there a risk that the project prevents peoples from enjoying their procedural rights, for example through exclusion of individuals	*No. The project enhances human rights and promotes inclusivity. These risks will be mitigated by the affirmative actions mentioned above. Further, as*	*OK – how? A description of how the project plans to be inclusive and non-discriminative during its design and*

	or groups from participating in decisions affecting them?	*mentioned above, the community support is expected to result in a more empowered populace, with more robust and granular interaction with management bodies, and with increased agency in driving change and making decisions where resources are concerned.*	*implementation should be included at PDD stage.*
	Are you aware of any severe human rights violations linked to project partners in the last 5 years?	*No. Not applicable.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 1 – the nature and values of the project and experience of the project coordinators mean that this risk is very unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: 4 – if this risk were to occur, it would substantially impact a significant number of people.* *Risk significance:* ***Low***			
Community, Health, Safety & Security	Is there a risk of exacerbating existing social and stakeholder conflicts through the implementation of project activities? Consider for example existing conflicts over land or natural resources, between communities and the state.	*No. Project will be implemented on privately owned lands.*	*OK*
	Does the project provide support (technical, material, financial) to law enforcement activities? Consider support to government agencies and to Community Rangers or members conducting monitoring and patrolling. If so, is there a risk that these	*No. Project does not envisage providing support to law enforcement agencies.*	*OK*

	activities will harm communities or personnel involved in monitoring and patrolling?		
	Are there any other activities that could adversely affect community health and safety? Consider for example exacerbating human-wildlife conflict, affecting provisioning ecosystem services, and transmission of diseases.	*No. The project will not exacerbate human-wildlife conflict or impact existing ecosystem services.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2 – due to the project activities and nature of the planned interventions, this risk is very unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: 2 – if this risk were to occur, it would have a marginal impact on a relatively small number of people.* *Risk significance:* ***Low***			
Labour and working conditions	Is there a risk that the project, including project partners, would lead to working conditions for project workers[25] that are not aligned with national labour laws or the International Labor Organization's (ILO) Declaration on the Fundamental Principles and Rights at Work (discriminatory working conditions, lack of equal opportunity, lack of clear employment terms, failure to prevent harassment or exploitation, failure to ensure freedom of association etc.)?	*No. Project will follow set out laws and guidelines for labour including national and international labour laws.*	*OK*

	Is there an occupational health and safety risk to project workers while completing project activities?	*Yes. Occupational health and safety guidelines will be followed to ensure safety of workers.*	*OK*
	Is there a risk that the project support or be linked to forced labour, harmful child labour, or any other damaging forms of labour?	*No. The project does not support forced labour, harmful child labour or any other damaging labour practices.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2 – due to the nature of the planned project activities and their commitment to abiding by relevant labour laws, this risk is very unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: 2 – if this risk were to occur it would have a limited impact on a relatively small number of people.* *Risk significance:* ***Low***			
Resource efficiency, pollution, wastes, chemicals and GHG emissions	Is there a risk that project activities might lead to releasing pollutants to the environment, cause significant amounts of waste or hazardous waste or materials?	*No. The project does not envisage generation of any hazardous pollutant wastes.*	*OK*
	Is there a risk that the project will lead to significant consumption of energy, water or other resources, or lead to significant increases of greenhouse gases?	*No. The project does not envisage consumption of energy, water and other resources by households beyond what they use before the project implementation.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 1 – the project activities and values mean this risk is negligible.* *Estimated magnitude of risks (1-5) & justification: 2 – if this risk were to occur, it would have a minimal impact on a relatively small number of people.* *Risk significance:* ***Low***			

Access restrictions and livelihoods	Will the project include activities that could restrict peoples' access to land or natural resources where they have recognised rights (customary, and legal)? Consider projects that introduce new access restrictions (e.g. creation of a community forest), reinforce existing access restrictions (e.g. improve management effectiveness and patrolling of a community forest), or alter the way that land and natural resource access restrictions are decided (e.g. through introducing formal management such as co-management).	*No. The project does not propose any new land management that would restrict access to land or negatively impact livelihoods.*	*OK – the project intervention has been well-consulted and designed to not negatively impact the project participants or area in any way. Information on how this has been achieved should be provided at PDD stage.*
	Is there a risk that the access restrictions introduced /reinforced/altered by the project will negatively affect peoples' livelihoods?	*No. The project does not propose any restrictions.*	*OK – as above.*
	Have strategies to avoid, minimise and compensate for these negative impacts been identified and planned?	*Yes. Strategies to minimise any possible negative impacts that may arise will be addressed in the management plan.*	*OK – please describe the potential negative impacts that may arise. The management of these potential risks can be discussed at PDD stage.*

E&S reviewer conclusions

Estimated likelihood of risks (1-5) & justification: 3, more information should be provided at PDD stage on how this risk is being managed and how impacts are being minimised through the project activities. As such, this risk is assigned as being possible.

Estimated magnitude of risks (1-5) & justification: 2, if this risk were to occur, it would have a significant impact on a relatively small number of people.

Risk significance: ***Moderate***

Cultural heritage	Is the Project Area officially designated or proposed as a cultural site, including international and national designations?	*No. The project area is private farmers lands.*	*OK*
	Does the project site potentially include important physical cultural resources, including burial sites and monuments, or natural features or resources of cultural significance (e.g. sacred sites and species, ceremonial areas) and is there risk that the project will negatively impact this cultural heritage?	*No. The project area is private farmers lands.*	*OK*
	Is there a risk that the project will negatively impact intangible cultural heritage? Consider for example cultural practices, social and cultural norms in relation to land and natural resources.	*No. The project compliments cultural heritage.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 1 – the nature of the project region and activities mean that this risk is negligible.* *Estimated magnitude of risks (1-5) & justification: 2 – if this risk were to occur it would have a relatively minor impact on a small number of people.* *Risk significance:* ***Low***			
Indigenous Peoples	Are there Indigenous Peoples[26] living within the Project Area, using the land or natural resources within the project area, or with claims to land or territory within the Project Area?	*No. Land is under private freehold in the project area.* *There are no indigenous groups in the project area.*	*OK – no indigenous groups identified within the project area or which the project activities could have a direct or indirect impact on. Any changes to this should be identified immediately and discussed at PDD stage.*

	Is there a risk that the project negatively affects Indigenous Peoples through economic displacement, negatively affects their rights (including right to FPIC), their self-determination, or any other social or cultural impacts?	*No. The project will not cause any effects on indigenous peoples.*	*OK – as above.*
	Is there a risk that there is inadequate consultation of Indigenous Peoples, and/or that the project does not seek the FPIC of Indigenous Peoples, for example leading to lack of benefits or inappropriate activities?	*No. Consultation with stakeholders is free for everyone to participate in.* *There are no indigenous people in the project sites. The project thrust is on farmlands that are owned by individuals who have either purchased the land or inherited it from their parents/grandparents.*	*OK – the FPIC process and stakeholder engagement already shown at PIN stage confirms this. Please continue this work through PDD stage!*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2, due to the nature of this project and the project area, this risk is very unlikely to occur.* *Estimated magnitude of risks (1-5) & justification: 2, if this risk were to occur the project would have ample resources to identify and manage it through the safeguarding provisions already in place, therefore it would have a relatively limited impact.* *Risk significance:* ***Low***			
Biodiversity and sustainable use of natural resources	Is there a risk that project activities will cause adverse impacts on biodiversity (both in areas of high biodiversity value, and outside of these areas) or the functioning of ecosystems? Consider issues such as use of pesticides, construction, fencing, disturbance etc.	*No. The project will enhance biodiversity.* *The following are examples of tree species that will be considered:* *Markhamia Lutea; Grevillea robusta; Guava; Moringa oleifera; Croton megalocarpus; Meru Oak.*	*OK – please provide a bit more detail on how the project aims to enhance biodiversity, e.g. the kinds of plants being used, the flora and fauna being considered, the impact on the surrounding project region, etc.*

		Additionally, there will be other plants introduced such as Tithonia, which are excellent border shrubs and are fodder supplements.	
	Is there a risk that the project will introduce non-native species or invasive species?	*No. The project will not introduce any invasive species.*	*OK*
	Is there a risk that the project will lead to the unsustainable use of natural resources? Consider for example projects promoting value chains and natural resource-based livelihoods.	*No. The project does not promote over reliance on any specific value chain.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2 – the project activities and values mean that the risk of negatively impacting on biodiversity in the project area and region is unlikely.* *Estimated magnitude of risks (1-5) & justification: 2 – if this risk were to occur, it would impact a small number of people in a potentially substantial way.* *Risk significance:* ***Low***			
Land tenure conflicts	Has the land tenure and use rights in the project area been assessed and understood?	*Yes. Land is under freehold ownership or lease.*	*OK*
	Is there a risk that project activities will exacerbate any existing land tenure conflicts, or lead to land tenure or use right conflicts?	*No. Participation in the project is fully voluntary. Any existing land tenure conflicts or potential issues concerning documentation, protected areas in or near the project region, or legal ownership over private lands will be verified by the local authorities, mainly village elders, sub-chiefs, and the chiefs.*	*OK – is there any history of land tenure conflicts or any potential issues concerning documentation, protected areas in or near the project region, or legal ownership over private lands, etc.? This should be further discussed at PDD stage if so. Please also note expansion in*

			the project area will require an update to this.
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 3, where this risk is well-managed and very unlikely considering the project activities and requirements for participants, it remains more pressing as the project may plan an expansion and has not fully considered the possibility of land tenure disputes just yet. This is fine to leave for now as very thorough consultations have taken place at PIN stage, but a useful thing to keep an eye on as the project progresses and potentially grows.* *Estimated magnitude of risks (1-5) & justification: 1, this risk will have a relatively minor impact should it occur due to the features of the project design itself, therefore a very low magnitude.* *Risk significance:* ***Low***			
Risk of not accounting for climate change	Have trends in climate variability in the project areas been assessed and understood?	*Yes. There's available publications of recent climate variability in the area as well as primary data that has been collected by ANA team.*	*OK –this is well included in the baseline scenario section in this PIN document.*
	Has the climate vulnerability of communities and particular social groups been assessed and understood?	*Yes. There's available publications of recent climate variability in the area as well as primary data that has been collected by the ANA team.*	*OK*
	Is there a risk that climate variability and changes might influence the effectiveness of project activities (e.g. undermine project-supported livelihood activities) or increase community exposure to climate variation and hazards? Consider floods, droughts, wildfires, landslides, cyclones, etc.	*No. The project would have a positive impact on climate resilience for the communities.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: 2, this risk is well identified and well managed so is unlikely to occur.*			

Estimated magnitude of risks (1-5) & justification: 2, if this risk were to occur it would have a relatively limited impact on a significant number of people. *Risk significance:* ***Low***			
Other – e.g. cumulative impacts	Is there a risk that the project will contribute cumulatively to existing environmental or social risks or impacts, for example through introducing new access restrictions in a landscape with existing restrictions and limited land availability?	*No.*	*OK*
	Are there any other environmental and social risks worthy of note that are not covered by the topics and questions above?	*No.*	*OK*
E&S reviewer conclusions *Estimated likelihood of risks (1-5) & justification: N/A – no risks further identified.* *Estimated magnitude of risks (1-5) & justification: N/A – no further risks identified.* *Risk significance:* ***Low***			
SECTION C: SAFEGUARD PROVISIONS			
Stakeholder engagement: requirements 2.1.1-2.1.3	Has a stakeholder analysis been conducted that has identified all stakeholders that could influence or be affected by the project, or is this still to be completed? Please describe.	*Yes. Stakeholder analysis was completed, with all stakeholders identified. The engagement and participation was done across the three counties, with attendance sheets provided in Annex 4.*	*OK – please provide any available updates to the project participants section of the PIN, and further details of the stakeholder engagement and participatory processes at PDD stage.*
	Are the local community and indigenous peoples statutory or customary rights to land or resources within the project area already	*The project, at this time, does not include IPLC with statutory or customary lands rights. All project participants hold legal title to their land.*	*OK*

	clear and documented, or is further assessment required? Please describe.		
	Are local governance structures and decision-making processes described and understood (including details of the involvement of women and marginalized or vulnerable groups), or is further assessment required? Please describe.	*Yes. The project takes into account local government structures and local chiefs and/or county governments, which are all included in the project consultations. The project specifically consulted, and will still consult county governments, including departments of gender and social services, departments of agriculture, livestock, and fisheries, and other related ministries that will help provide a big picture understanding of the project areas.* *The local administration, including chiefs, will help communicate the project to the local communities, as well as help in the verification of land tenure and the presence of any conflicts.*	*OK – please provide descriptions of these structures, and how the project plans to utilise and work with them, in sections 2.3 and 4.1 of this PIN. More details will be required at PDD stage.*
	Are past or ongoing disputes over land or resources in the project area known and documented, or is there need for further assessment? Please describe.	*No. There are no known land or resource disputes in the project area.*	*OK*
Stakeholder consultation: requirements 2.5.1 and 2.5.2	Does the project have a Stakeholder Engagement Plan with clear measures to engage Vulnerable Groups, or is this plan still to be developed? Please describe.	*Yes, the project has an inclusive Stakeholder Engagement Plan, provided in Section 2.*	*OK – looking forward to reading about this plan at PDD stage.*
	Has the Project Coordinator informed all stakeholders of the project, through providing relevant project information in an accessible	*Yes. The project coordinator provides project information in an accessible format – various languages, both oral, and written – for project stakeholders.*	*OK – if possible, it would be great to see evidence of this exchange/the agreement that is being used. You can*

	format, or does this still need to be completed? Please describe.		*attach it as an Annex to the PIN if you wish.*
Free, Prior and Informed Consent: requirements 2.6.1-2.6.4	Has the project analysed and understood national and international requirements for Free Prior and Informed Consent (FPIC)? Please describe.	*Yes. This is part of Section 2 of this PDD.*	*OK – please get in touch if you have further questions around the FPIC process. Looking forward to reading about the details of this process at PDD stage.*
	Has the project identified potential FPIC rightsholders and potential representatives in local communities and among indigenous peoples, or is this still to be completed? Please describe.	*Yes. The project has identified potential FPIC rightsholders, included in Section 2.*	*OK – please ensure they are included in detail in section 2.5 of this PIN.*
	Has the project worked with rightsholders and representatives of local communities and indigenous peoples to understand the local decision-making process and timeline (ensuring involvement of women and vulnerable groups), or is this still to be completed? Please describe.	*Yes. This has been completed. The project has partnered with local government structures, and CFAs.*	*OK – please ensure outputs of these consultations are included in project design and detailed at PDD stage.*
	Has the project sought consent from communities to 'consider the proposed Project', and if so, where is this in principle consent documented? Please describe.	*Yes. The project obtains signed consent from each project participants, which are stored with ANA.*	*OK – again, it would be great to see evidence of this/the contracts that were signed. This should also be described in detail in the* Project Participants *section of the PIN.*
Grievance Redress Mechanism:	Does the project already have a Grievance Redress Mechanism (GRM), or is this still to be established? Please describe.	*Yes. The project has a Grievance Redress Mechanism, as found in this PDD.*	*OK – looking forward to reading about the design of the grievance mechanism and its details at PDD stage.*

requirements 3.16.1	For projects with a GRM, is this accessible to project affected people? Please describe.	*Yes, the project participants are all provided with the GRM upon enrolling in the project.*	*OK - Please ensure the grievance mechanism is designed to be accessible to all project participants, particularly the most vulnerable. This detail can be provided at PDD stage, but the project design process should utilise engagement, participatory and FPIC processes to design an accessible and suitable grievance mechanism.*

E&S reviewer conclusions for safeguard provisions

Are the project Safeguard Provisions adequately addressed, or to be adequately addressed during the project design phase? YES

What additional actions need to be conducted during the project design phase? N/A - PLEASE SEE BELOW COMMENTS IN SCREENING SUMMARY

Any other comments - N/A

SECTION D: SCREENING REPORT (E&S REVIEWER TO COMPLETE)

Name of E&S reviewer	***AMELIA EVANS***
Date of E&S screening:	***COMPLETED 22/10/24***
Project risk rating:	*LOW – the project risk rating is overall assigned as low, with some moderate risks identified and required to be managed through project design and PDD-writing stage.*
Principle risks and impacts	*Where risks have been identified, primarily to vulnerable groups, including women and girls, the project shows competent management and good knowledge of the local context, meaning these risks are well-managed, well-engaged with within the affected communities and groups, and should be mitigated against via project design features throughout the project period. Where access restrictions have been identified as a moderate risk as well, thorough community, participants and stakeholder consultation means this risk is being well-managed by the project. This is required to be further evidenced and worked on through the project design and PDD stage.*

	E&S topic/ risk area	Likelihood (1-5)	Magnitude (1-5)	Significance (low, moderate, severe, high)
	Vulnerable Groups	2	3	Moderate
	Gender equality	2	3	Moderate
	Human Rights	1	4	Low
	Community, Health, Safety & Security	2	2	Low
	Labour and working conditions	2	2	Low
	Resource efficiency, pollution, wastes, chemicals and GHG emissions	1	2	Low
	Access restrictions and livelihoods	3	2	Moderate
	Cultural heritage	1	2	Low
	Indigenous Peoples	2	2	Low
	Biodiversity and sustainable use of natural resources	2	2	Low
	Land tenure conflicts	3	1	Low
	Risk of not accounting for climate change	2	2	Low
	Other – e.g. cumulative impacts	-	-	Low
Likely safeguard plans required	*The ESA, ESA report and ESMP (all included in the PDD template) should be filled out, with an additional consideration to the risks assigned as 'moderate' here.*			

[1] For the definition see IUCN ESMS Standard on Biodiversity Conservation and Sustainable Use of Natural Resources.

Annex 10 – Environmental and Social Assessment Report

Introduction

Purpose and Objectives of the assessment

The purpose of this ESA is to evaluate the environmental and social impacts of the project and develop an actionable plan to mitigate any potential adverse effects. The project seeks to restore soil fertility, promote sustainable land management, and sequester carbon dioxide through agroforestry. This ESA also ensures that the project adheres to Plan Vivo as well as natural and international environmental regulations.

The main objectives of this ESA are:

- To assess the potential environmental and social risks of the agroforestry interventions.
- To ensure compliance with local and international environmental laws, including the Climate Change Amendment Act (2023) and UNDRIP.
- To develop mitigation strategies that address negative impacts while enhancing positive outcomes, including improvement of soil health, biodiversity conservation, and enhancement of local livelihoods.

Scope of the assessment

The assessment covers all the relevant environmental, social, and economic aspects within the three project areas. It evaluates both biophysical and social aspects, including:

- Carbon sequestration potential.
- Soil restoration and management practices.
- Biodiversity impacts.
- Socio-economic impacts, especially on smallholder farmers, including gender considerations.
- Stakeholder engagement processes and FPIC compliance.
- Legal and regulatory compliance.

E&S Risks and Impacts Assessed

The key risks and impacts considered for this ESA include:

- Environmental risks, including soil erosion, water scarcity, biodiversity loss, and pollution from agrochemicals.
- Social risks, including land tenure conflicts, gender exclusion, and human-wildlife conflicts, particularly in Laikipia.
- Carbon benefits, covering positive climate change mitigation through carbon sequestration by trees.

Stakeholder Engagement

Stakeholder Identification

The project identified various stakeholders, categorized into primary stakeholders (directly affected) and secondary stakeholders (indirectly affected). The key groups include:

- Primary stakeholders

    - Smallholder farmers, who are direct beneficiaries of the project and adopt agroforestry practices as well as receive training.
    - Local seedling suppliers who provide quality seedlings for planting.
- Secondary stakeholders.
    - County governments to ensure the project aligns with local regulations.
    - NEMA, who oversee compliance with environmental and carbon regulations.
    - NGOs and Local Institutions such as KEFRI, KFS.

Stakeholder Consultation

Throughout the project's design phase, consultations with farmers, local authorities, and other community members. These consultations can be summarized as below:

1. Nyeri County.
    - Location - Tumutumu, Mathira West.
    - Stakeholders - Smallholder farmers, local chiefs, department of social services.
    - Issues discussed - Conflicts regarding benefit-sharing within households.
    - Outcome - The project will conduct inclusive training and awareness sections on an annual basis as highlighted in A3.3 in Section 3.5 (under project activities). This training will be in collaboration with the respective county departments of gender and social services to drive sensitization on equitable benefit sharing. This activity is already included in the ESMP (Section 3.9.4) and will be monitored under progress indicator P9.
2. Kirinyaga County.
    - Location - Mumbi Tree Nursery.
    - Stakeholders - Seedling suppliers, local government representatives.
    - Issues discussed - Tree species suitability and waste disposal.
    - Outcome - Look into tree species and improved waste management protocols.
3. Laikipia County.
    - Location - Segera Village, Laikipia North.
    - Stakeholders - Smallholder farmers, local authorities.
    - Issues Discussed - Human-wildlife conflict.
    - Outcome - The project acknowledges that consultations with KWS are yet to be undertaken, as farmers reported limited past engagement and support. The project will initiate follow up consultations with KWS and relevant county authorities to explore the potential collaboration on human-wildlife conflict management. In the interim, the project promotes farmer-to-farmer transfer of indigenous knowledge on mitigating wildlife conflicts, such as the use of solar-powered lamps to deter elephants at night, as part of ongoing community engagement. Once the consultations are concluded, updates will be reflected in the project's monitoring plan, activities, and ESMP accordingly.

Free, Prior, and Informed Consent (FPIC)

The project has undertaken the following steps to ensure voluntary, informed consent from all participants.

- All farmers were informed about the project and its potential impacts before enrolment.
- Farmers signed FPIC consent forms, witnessed by local community leaders.

- Ongoing engagement through community meetings, SMS updates, and grievance redress mechanisms to ensure farmers are consistently informed and involved in decision-making processes.

Risk Assessment

Environmental Risks.

The project poses several environmental risks, which have been identified and require mitigation measures.

- Soil erosion. The introduction of agroforestry practices, especially in sloping areas, may cause soil erosion if not managed properly. This risk is mitigated through soil conservation techniques, such as terracing and cover cropping.
- Biodiversity risks. While agroforestry systems enhance biodiversity, the introduction of non-native species may disrupt local ecosystems. The project mitigates this by prioritizing native and agroforestry-friendly species, e.g., *Grevillea robusta*, *Moringa Oleifera*, to support local flora and fauna.
- Water availability and quality. In dry areas like Laikipia, water scarcity may affect tree establishment and growth. The project plans to implement rainwater harvesting systems and efficient irrigation techniques to address water needs.
- Pesticide use and pollution. The project avoids the overuse of agrochemicals and promotes integrated pest management instead. As such, the project provides training on safe pesticide handling, ensuring minimal impact on water sources and biodiversity.

Social Risks

Social risks identified include:

- Land tenure conflicts. There are concerns about land ownership and disputes among family members, particularly regarding women and youth. This risk is mitigated by emphasizing FPIC and gender-inclusive participation in the project.
- Human-wildlife conflict. Especially in Laikipia, there is a risk of wildlife encroaching on farmland. The project plans to work with KWS to implement mitigation strategies, such as fencing and community outreach to reduce conflicts.
- Cultural sensitivity and exclusion. Ensuring that marginalized groups, particularly women and youth, are involved in decision-making processes. The project includes targeted outreach and training to include these groups, avoiding cultural exclusion or discrimination.

Compliance with National and International Standards.

National Legislation.

The project complies with several national regulations, including:

- The Climate Change Act (2023), which provides guidelines on carbon markets and emphasizes the integration of climate adaptation and mitigation strategies in local development projects.
- The Environmental Management and Co-ordination Act (EMCA, 1999). The project complies with this Act by conducting a thorough Environmental and Social Impact Assessment (ESIA), and ensuring the project adheres to all environmental safeguards required by NEMA.
- Land Act (2012). The project ensures landowners are involved in the decision-making process, and all farmers hold legal rights to the land before they can participate.

- The Wildlife Conservation and Management Act (2013). With the risk of human-wildlife conflict, the project will follow guidelines set by KWS to avoid or mitigate wildlife disruptions on the farms.

International Standards

The project also adheres to international frameworks, including:

- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). The project ensures FPIC for all project participants, especially those from marginalized or indigenous groups, guaranteeing their rights to participate and benefit from the project.
- The International Labour Organization (ILO) Convention 169. This convention on Indigenous and Tribal Peoples is relevant to the project's engagement with local communities. The project follows the principles of participation, consultation, and ensuring non-discrimination for all groups, especially women and youth.
- Plan Vivo Standards. The project aligns with Plan Vivo's E&S safeguards, including stakeholder consultations, free and informed consent, and ensuring the environmental sustainability of carbon activities.

Environmental and Social Management Plan

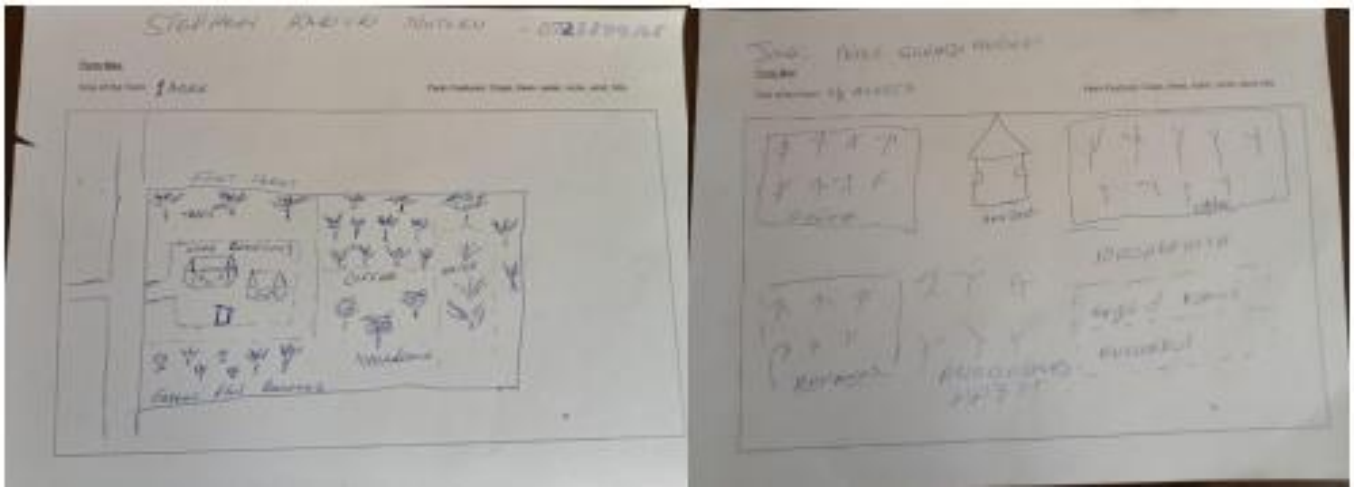
The ESMP outlines how the project will manage and mitigate potential environmental and social impacts throughout its lifecycle. The measures include:

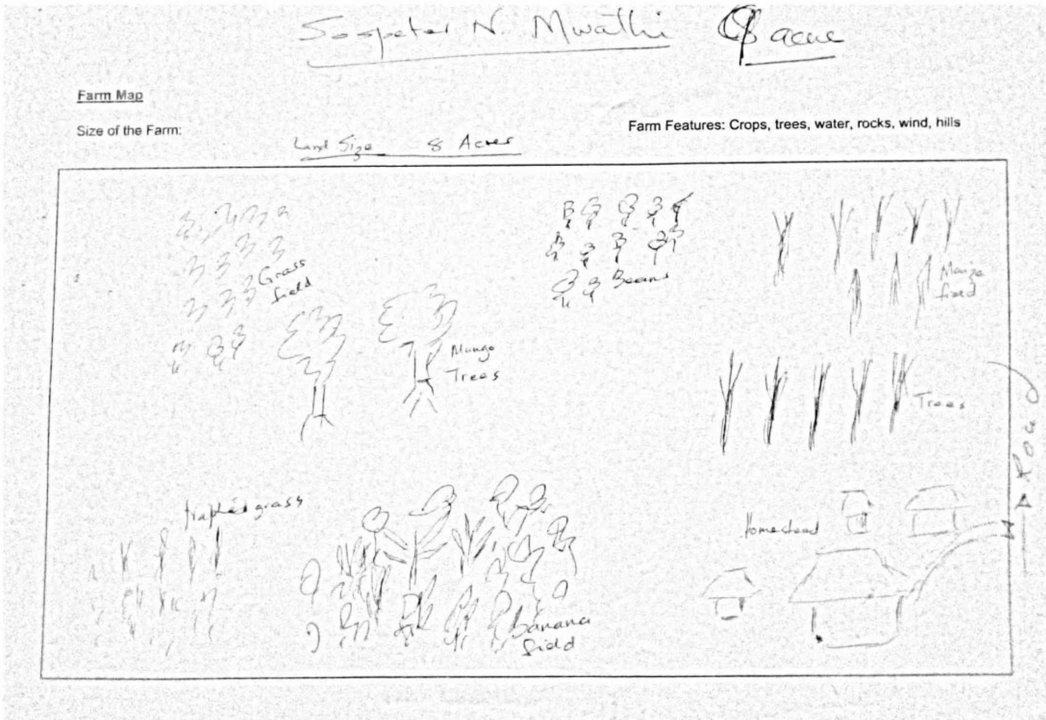
- Mitigation measures for environmental risks such as soil erosion, pesticide pollution, and biodiversity preservation.
- Stakeholder involvement through continued consultations, ensuring ongoing participation, particularly women and youth.
- Monitoring and reporting mechanisms, including regular assessments of tree growth, carbon sequestration, and social impacts to ensure adherence to the planned interventions.

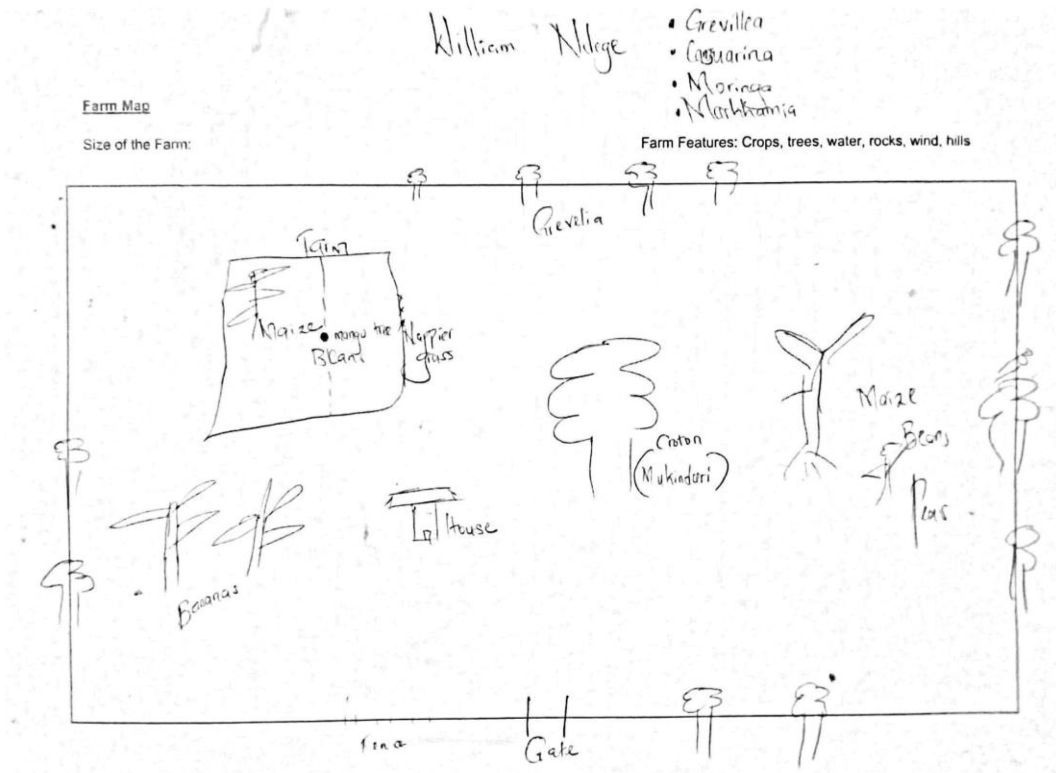
The full ESIA report conducted by ANA can be found here: Annex 10 ESIA_ANA 30.6.2025 signed.pdf

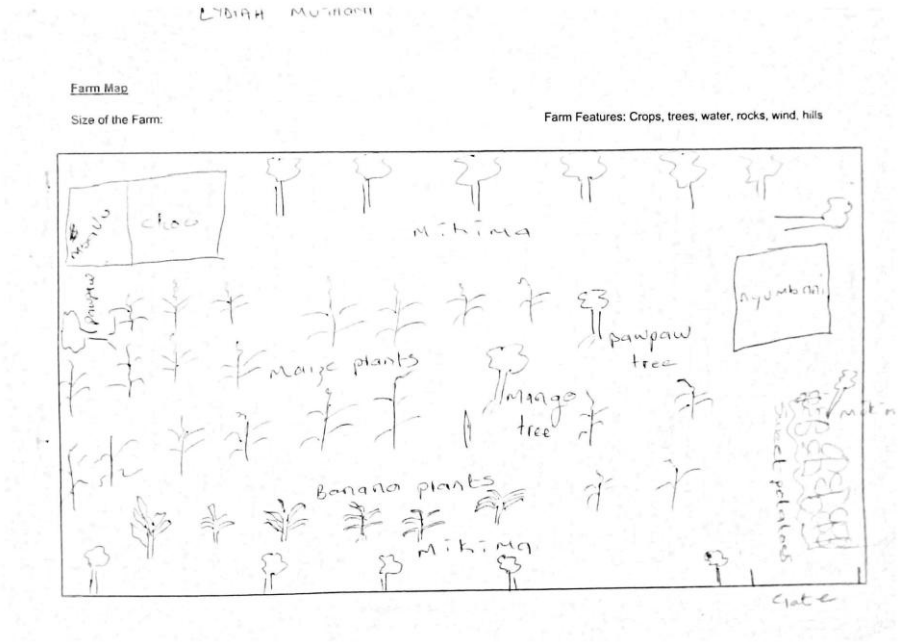
Annex 11 – Land Management Plans

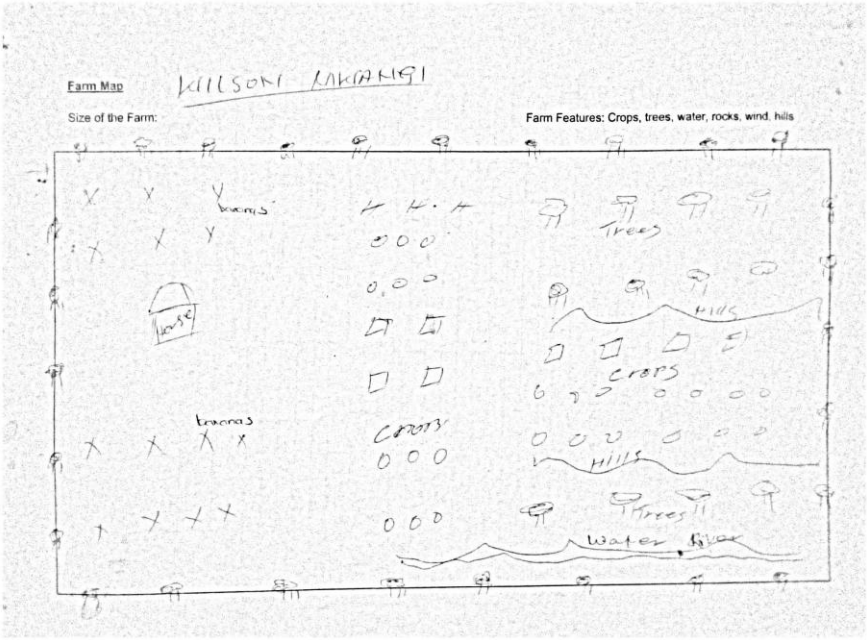
Sample Farms Maps

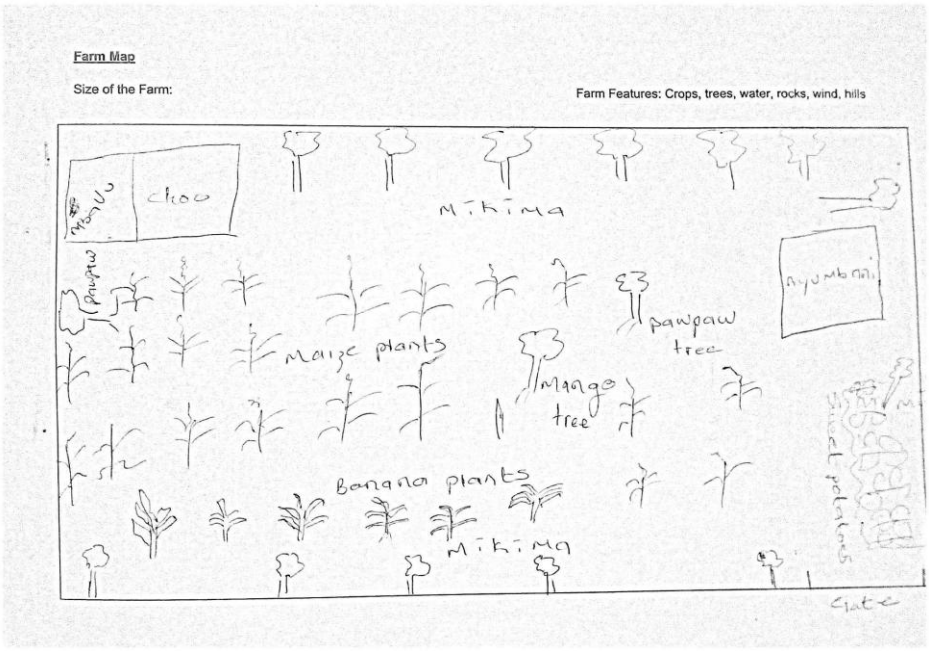



Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
Land Size 8 Acres
Grass field
Mango Trees
Beans
Trees
Napier grass
Banana field
Homestead
Road


Grevillea
Casuarina
Moringa
Markhamia
Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
Grevilia
Maize
Napier grass
Croton
(Mukinduri)
Maize
Beans
Peas
House
Bananas
Gate


Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
Mikima
Maize plants
pawpaw tree
Mango tree
Banana plants
Mikima
Gate


Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
Trees
Hills
Crops
Hills
Trees
Water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Farm Features: Crops, trees, water, rocks, wind, hills
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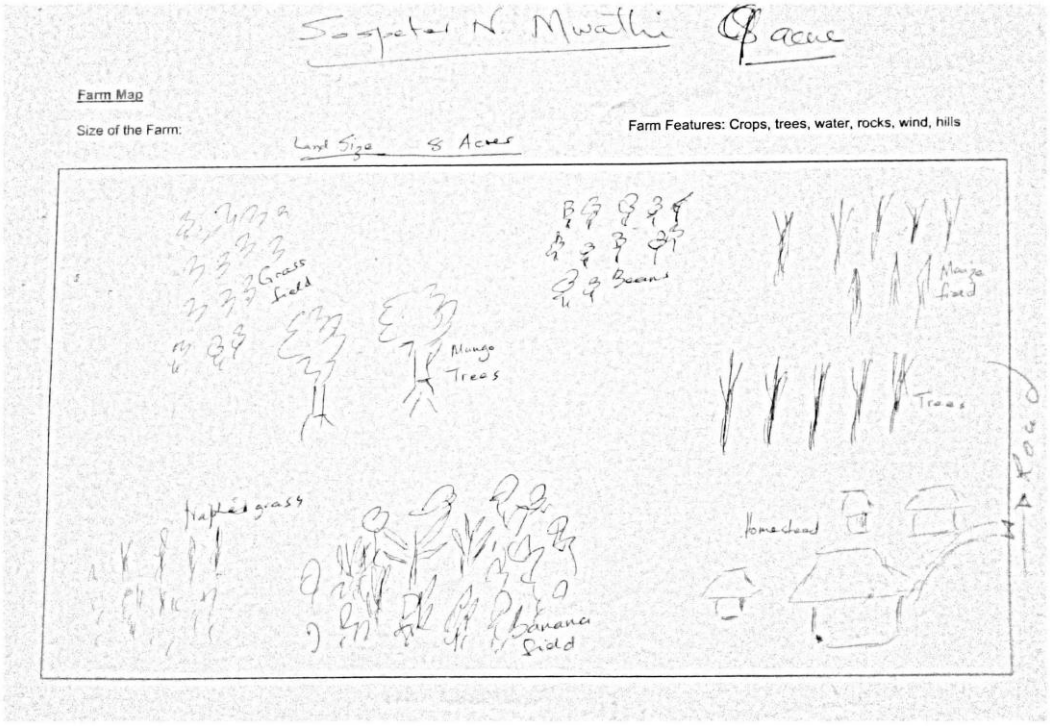
Banana plants
Mikima
Gate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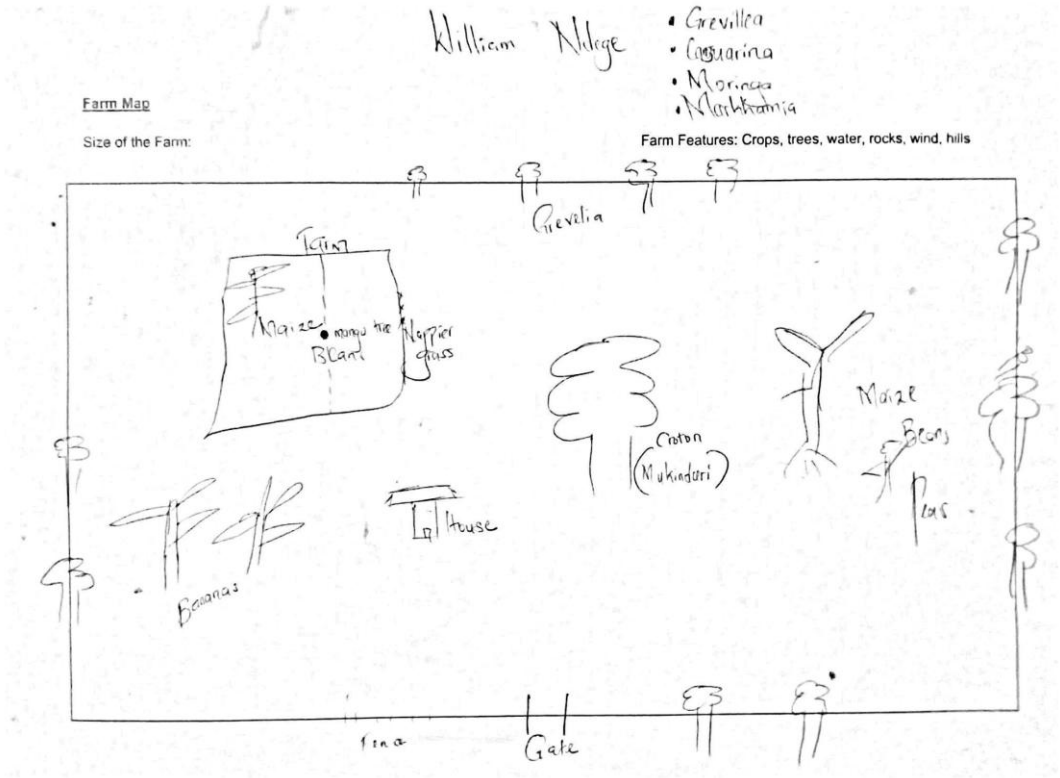
Land Size 8 Acres
Farm Features: Crops, trees, water, rocks, wind, hills
Grass field
Mango Trees
Beans
Maize field
Trees
Road
Napier grass
Banana field
Homestead


William Ndege
• Grevillea
• Casuarina
• Moringa
Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
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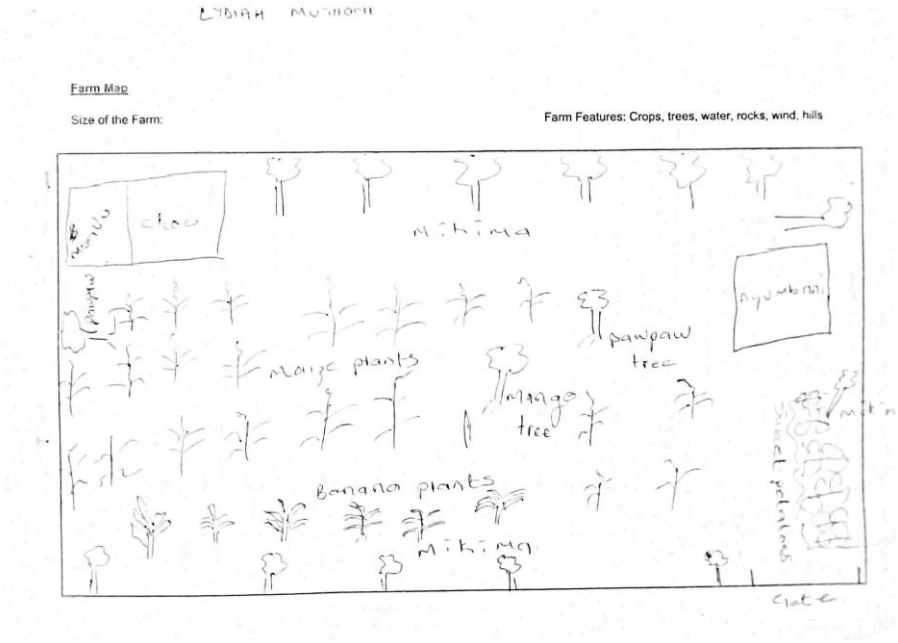
Toilet
Maize
Napier grass
Croton (Mukinduri)
Maize
Beans
Banana
House
Gate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Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
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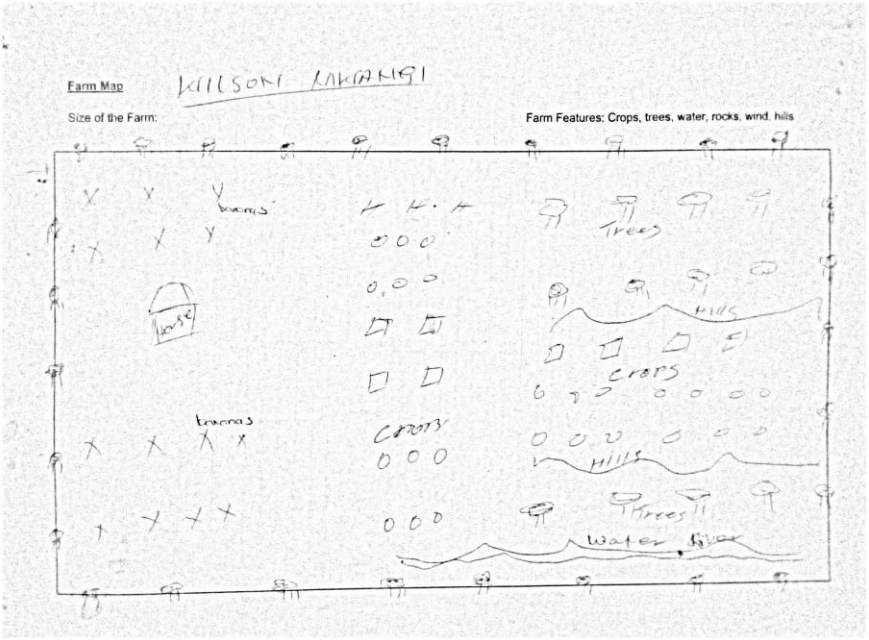
Maize plants
pawpaw tree
Mango tree
Banana plants
Mikima
Gate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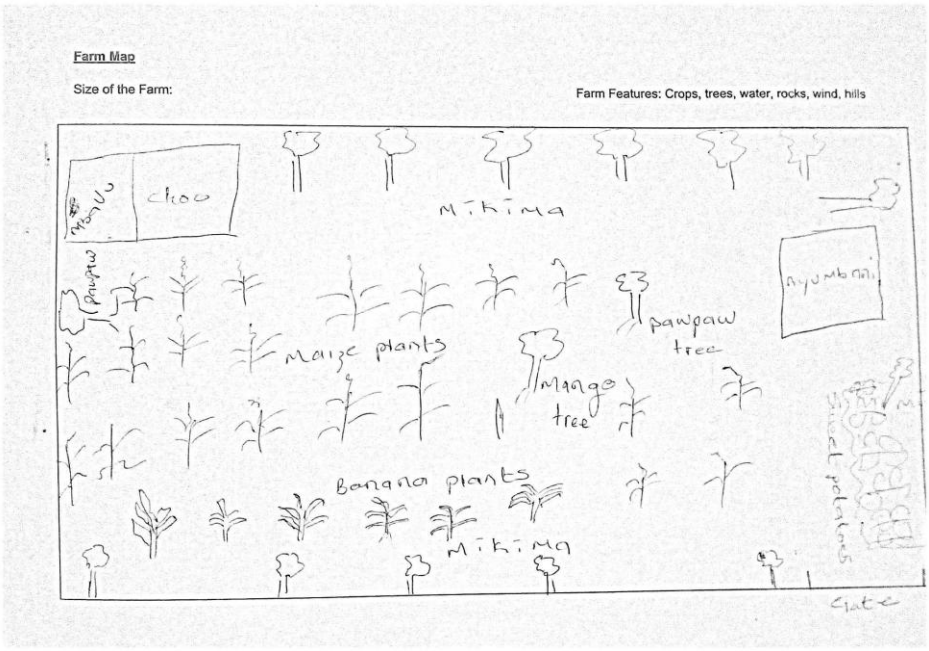
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
Trees
Hills
Crops
Hills
Trees
Water


Farm Map
Size of the Farm:
Farm Features: Crops, trees, water, rocks, wind, hills
choo
Mikima
Maize plants
pawpaw tree
Mango tree
Banana plants
Mikima
Gate

Annex 12 – Project Agreements

Ardhi Njema Agroforestry (ANA)
Address: 1664- 10400, Nanyuki
Phone: 0112612589

This Agreement is made between **Ardhi Njema Agroforestry** Community Based Organization of P.O. Box 1164-10400 Nanyuki, hereinafter referred to as "**ANA,**" and the undersigned individual farmer, hereinafter referred to as the "**Landowner**" or "**Tree Grower.**"

Sir Name:	First Name:		
Other Name(s):	Gender	M	F
ID Number:	Date of Birth:		
Date of ID issuance:	County:		
Phone Number:	Sub-County:		
Home Address:	Village:		
Property Number:	Lat:	Long:	
Property Size (Ha):	Email:		

1. Definitions

For clarity in this Agreement:

"Carbon Credits / Plan Vivo Certificates (PVCs)" means certified units issued under the Plan Vivo Standard based on verified carbon sequestration from approved project interventions.

"Project Area" means the portion of land owned or managed by the Tree Grower and formally registered under this Agreement for tree-planting and carbon-credit generation.

"Crediting Period" means the duration over which carbon benefits are measured, verified, and issued, being **20 years**, extendable to **40 years** subject to applicable requirements.

"Monitoring Targets" means the performance indicators a Tree Grower must meet, including tree survival, maintenance practices, accurate reporting, and cooperation with monitoring activities.

"FPIC (Free, Prior and Informed Consent)" means the voluntary and informed consent given by the Tree Grower without coercion before joining the project.

2. Purpose of the Agreement

This Agreement outlines the roles, responsibilities, and expectations of both parties in participating in the Ardhi Njema Agroforestry Carbon Project, developed under the Plan Vivo Standard and in compliance with the Carbon Market Regulations, 2024 of Kenya. It formalizes the Tree Grower's participation in carbon credit generation through sustainable agroforestry practices.

3. Duties and Responsibilities

A. Ardhi Njema Agroforestry (ANA) shall:

i. Register and enroll eligible farmers under the Plan Vivo Standard.
ii. Provide seedlings and technical training on planting, maintenance, and sustainable land use.
iii. Monitor and verify tree growth and health, including through field visits and data collection
iv. Aggregate and transact verified carbon credits generated through the project.
v. Share benefits from carbon revenues as outlined in Section 4.
vi. Provide accessible grievance redress mechanisms
vii. Uphold Free, Prior, and Informed Consent (FPIC) principles and maintain transparent communication.

B. Tree Growers shall:

Ardhi Njema Agroforestry (ANA)
Address: 1664- 10400, Nanyuki
Phone: 0112612589

i. Plant and care for seedlings in accordance with project guidelines.
ii. Implement sustainable land management practices provided through training
iii. Permit ANA staff and verifiers access for monitoring and verification.
iv. Provide accurate and timely updates on tree growth when requested.
v. Maintain trees for the full crediting period and harvest according to guidelines.
vi. Notify ANA of any threats to the project area or changes in land ownership.

4. Carbon Rights and Land Tenure

i. The Tree Grower retains full ownership of their land.
ii. Carbon rights resulting from project interventions are assigned to ANA for the purpose of developing, registering, and managing the carbon project and trading in the voluntary carbon market.
iii. These rights are non-exclusive and time-bound, and do not affect subsistence use of the land.
iv. The Tree Grower may not generate or assign any other carbon credits from the same interventions during the term of this agreement.

5. Crediting and Agreement Period

i. The crediting period shall be 20 years from the date of signing, with a possibility of extension to 40 years subject to market conditions and Plan Vivo Standard requirements.
ii. The agreement period shall match the full crediting period and be similarly extendable upon mutual consent.

6. Estimated Annual Carbon Benefits

The estimated annual average plan vivo certificates to be generated under this entire project will be 2000tCO_2e. These final values for each individual land owner will be subject to verification and market conditions.

7. Rights to Sell Carbon Credits

The Tree Grower hereby grants ANA the exclusive right to sell Plan Vivo Certificates (PVCs) on their behalf. The Tree Grower agrees not to register or generate carbon credits from any other standard, registry, or intervention based on the same trees or project area covered under this Agreement.

8. Benefit-Sharing Mechanism

i. Revenue from the sale of carbon credits shall be shared between ANA and the Tree Grower in accordance with the Carbon Market Regulations, 2024.
ii. Eligibility for payments is based on fulfillment of monitoring targets and other project requirements
iii. If targets are not met, payments may be reduced or withheld until corrective action is taken.
iv. ANA shall publish annual summaries of credit revenue and distributions.

9. Monitoring and Verification

i. Monitoring will be conducted using Plan Vivo-approved methodologies including field visits, remote sensing, and third-party verification.
ii. Tree Growers may be asked to support monitoring by providing updates or access.
iii. All monitoring shall be conducted at no cost to the Tree Grower.

10. Grievance Mechanism

Tree Growers may raise complaints or concerns through the following channels:

i. Mobile: 0112612589
ii. Email: anagrievances@gecation,org

iii. In person: Through ANA Field Officers during regular site visits or scheduled community meetings.

ANA is committed to fair and timely resolution of all grievances.

11. Data Protection and Privacy

i. Personal data will be collected and used solely for project implementation and compliance.
ii. All data will be securely stored in compliance with the Data Protection Act, 2019.
iii. Tree Growers may request access to or correction of their data at any time.

12. Termination

i. This Agreement shall be valid for 20 years and may be extended up to 40 years upon mutual agreement.
ii. Either party may terminate this Agreement with 90 days' written notice
iii. ANA may terminate this Agreement in cases of fraud, material breach, or persistent non-compliance.

13. Declarations

By signing this Agreement, the Tree Grower affirms:

i. They understand the Agreement, roles, benefits, and expectations.
ii. They have voluntarily agreed to participate under FPIC principles
iii. They own or have secure rights to the land under this project
iv. They will cooperate to uphold the success of the project.

Signatures:

Tree Grower

Name:

Date: Sign:

Ardhi Njema Agroforestry

Name and Position:

Date: Sign:

Annex 13 – Monitoring Plan

In this Annex, we present the detailed monitoring plan, with parameters linked to the project indicators (Tables 4.1, 4.2, 4.3, 4.4) and in line with AR-TOOL14 guidance.

Aboveground and Belowground biomass

According to AR-TOOL 14-4 v2, the allometric equation applied to a tree species must be preferably selected from an existing data applicable to the local situation (e.g. represented by similar ecological conditions). Thus, we preferably used the allometric equations based on Kuyah et a. (2012) for calculating above-ground and belowground biomass. Based on these allometric equations, above-ground and below-ground carbon content can be estimated per hectare per year.

Table 13a: Allometric equations from Kuyah et al. (2014) for aboveground biomass (AGB); belowground biomass (BGB) using DBH and Height (m); and Total Biomass (TB)

Variable	Equation
AGB	$AGB = 0.091 \times dbh^{2.472}$
BGB	$BGB = 0.490 \times AGB^{0.923}$
TB	AGB + BGB

Sampling the smallholder plots

Each smallholder plot is monitored according to the agreement:

1. ***Year 0–1:*** *≥50% of planned trees planted and protected.*
2. ***Year 3:*** *≥65% survival rate.*
3. ***Years 5–10:*** *DBH milestones (3 cm at Year 5, 4 cm at Year 7, 6 cm at Year 10).*

Tree counts are made across 100% of plots during Years 0-3; thereafter, DBH and biomass measurements use 10% representative sampling. Plots are sampled via linear transects, recording tree health, species, and survival.

Monitoring parameter list

Monitoring parameter	Definition/Unit	Method	Frequency	Means of verification
Project area (ha)	Total hectares enrolled under Plan Vivo agreements	GPS delineation	Annual	Legal agreements and Plan Vivo maps
Number of seedlings planted	# of seedlings distributed and planted per hectare	Field counting, nursery distribution logs	Annual	Annual records
Tree survival rates (%)	% of seedlings surviving after planting	Survival counts at years 1, 3, 5, 7, 10	Milestone years	Monitoring surveys, field reports
DBH growth (cm/yr)	Average diameter at breast height of planted trees	Tape measure on a 10% sample of trees per plot	Years 5, 7, 10	Survey reports
Aboveground biomass (tCO2e/ha)	Estimated biomass carbon stock	Allometric equations (Kuyah et al., 2012) applied to DBH and height	Every 5 years	Biomass survey reports
Belowground biomass (tCO2e/ha)	Estimated belowground carbon stock	Allometric equations (Kuyah et al., 2012) applied to DBH and height	Every 5 years	Biomass survey reports
Disturbance events	Fire, pest outbreaks, cyclones, uncontrolled cutting	Community meetings, field staff reports	Annual	Incident reports
Female participation	% of women attending	Headcount, attendance logs	Annual	Reports, photographs

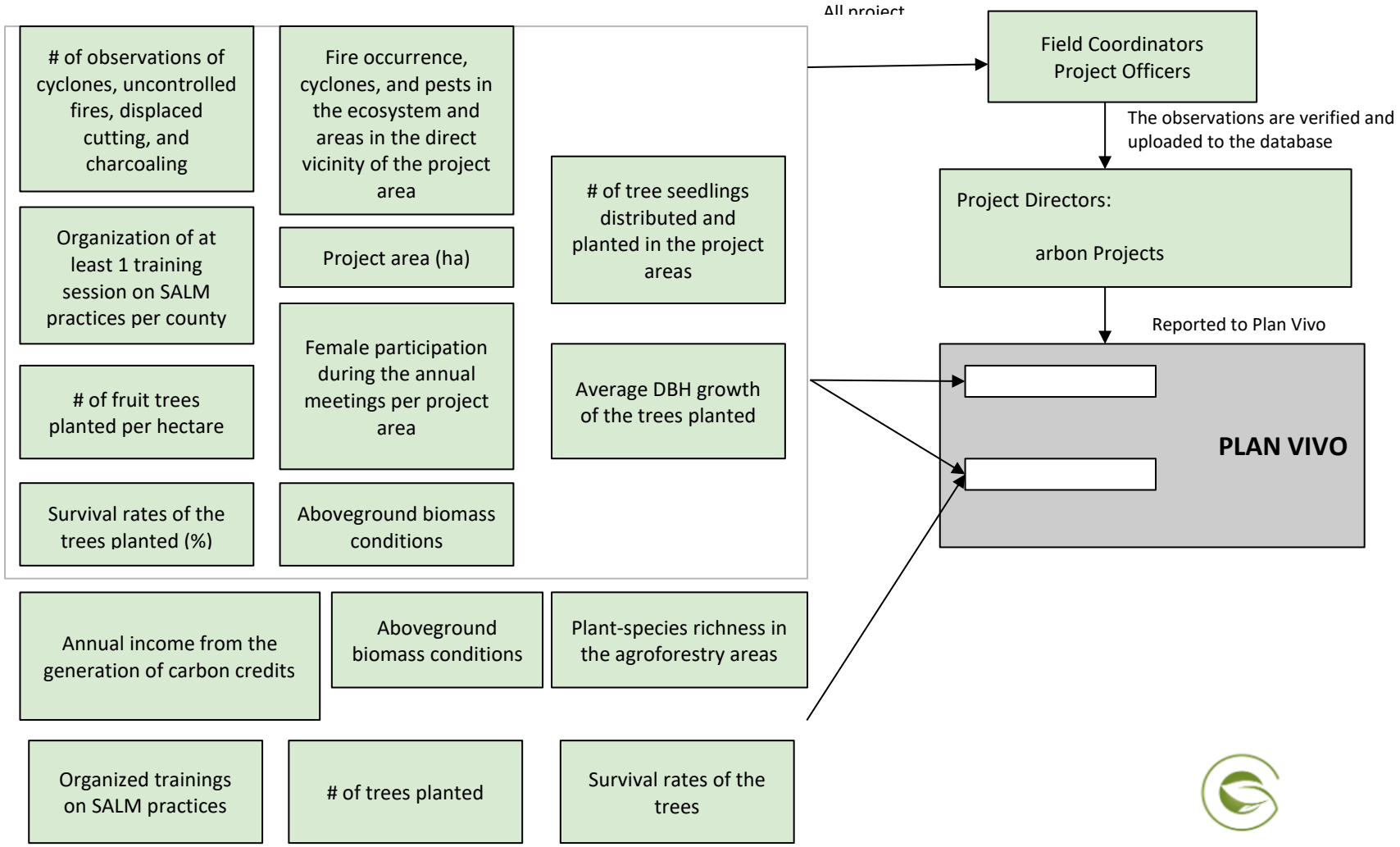
	trainings/meetings			
Trainings on SALM/agroforestry	# of training sessions held	Project records	Annual	Training reports
Household income	Change in farm and non-farm income	Household surveys	Every 2-3 years	Livelihood survey reports
Carbon payments	Total PVC payments disbursed	Project financial records	Annual	Payment logs
Biodiversity indicators.	Species richness, natural regeneration, fauna presence	Field sampling in 7% of plots, bird counts, soil fauna sampling	Year 3 onwards, then annually	Ecological surveys

Ecosystem Monitoring

1. ***Natural regeneration.*** *Sapling density and species composition assessed in 7% of the plots, starting in Year 3.*
2. ***Fauna (birds, pollinators, soil microfauna).*** *Point counts and soil sampling in 7% of plots, starting Year 3.*
3. ***Agrochemical reduction.*** *Annual farmer surveys (7% sample).*
4. ***Fire/pests/cyclone events.*** *Community reporting during annual meetings.*

Project Monitoring Flowchart

FLOWCHART FOR PROJECT MONITORING



Annex 14 – Project Database

- A. Admin
- B. Financing
- C. Land title, rights, and agreements
- D. Environmental
- E. Livelihood
- F. Government
- G. Plan Vivo Documents
- H. Spatial Data
- I. Media
- J. Monthly Reports
- K. Logs of Grievances - Feedback/Complaints

Annex 15 – Letter of Approval

EIA250526020

nema
Mazingira Yetu | Uhai Wetu | Wajibu Wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT LICENSE

License No: **NEMA/EIA/PSL/42103**

Application Ref No: **NEMA/EIA/PSR/62964**

This is to certify that the Environmental Impact Assessment Project Report received from **Ardhi Njema Agroforestry CBO.**

of
P.O Box 1664 - 10400, Nanyuki.

submitted to the National Environment Management Authority in accordance with the Environmental Impact Assessment & Audit Regulations, 2003 regarding the:
Proposed Agroforesty Carbon Project.

whose objective is to carry on
Distributing seedlings and providing on-farm training while promoting both economic activities and ecological stability, capacity building through farmer training and community monitoring teams and implement a digital system for tracking carbon growth and verifying impacts, applying restoration interventions through agroforestry for soil restoration and improved land management through sustainable agricultural land management (SALM).

Located at
3No. Counties – Nyeri (within Mathira, Mukurweni, Thaya, Tetu, Kiianaa & Nyeri Town constituencies in 56No. villages), Laikipia (Laikipia East and Laikipia West constituencies in 4No. villages) Kirinyaga (Mwea, Gichugu & Ndia constituencies in 10No. villages).

has been reviewed and a license is hereby issued for the implementation of the project, subject to attached conditions.

Issue Date: **24/09/2025**

Signature

(Seal)

Director-General
The National Environment Management Authority.

P.T.O.

ISO 9001 : 2015 Certified

Annex 16 – Financial Plan

See attached excel sheet.

Annex 17 - Anonymous Complaints Workflow

Annex 17.1: Google Form Structure for QR Code Feedback & Grievance Reporting.

To protect anonymity and trust, we plan to:

- Turn OFF "Collect email addresses"
- Turn OFF "Limit to 1 response"
- Turn OFF "Require sign-in"
- Add language toggle: English / Kiswahili
- Add a case ID through configuration via Google Sheet + script and acknowledge via confirmation message at the end of the form.

ANA Carbon Project – Feedback & Grievance Reporting Form

This form allows project participants and stakeholders to submit feedback or grievances related to the ANA Carbon Project. You may report **anonymously**. Your complaint will be acknowledged and reviewed confidentially.

If you feel unsafe or believe this is an urgent safeguarding issue, please indicate in this form and we will prioritize it.

Section 1: Consent & Privacy

Q1. Do you consent to ANA collecting and processing this information for grievance resolution purposes? (Required)

Yes
No (If No → form ends)

Q2. Would you like to remain anonymous? (Required)

- Yes, I want to remain anonymous
- No, I am comfortable sharing my contact details

Section 1.1: Contact Details (Only if not anonymous)

Q3. Full Name (Short answer — Required)

Q4. Phone Number (E.164 format preferred e.g. +2547...) (Short answer — Required)

Q5. Email address (optional) (Short answer — Optional)

Q6. County (Dropdown — Required)

Nyeri
Kirinyaga
Laikipia
Other (specify)

Q7. Are you a project participant? (Required)

Yes
No

Not sure

Section 2: Issue Type & Urgency

Q8. What are you submitting? (Multiple choice — Required)

Feedback / suggestion
Complaint / grievance
Question / clarification
Report of misconduct

Q9. Category of issue (Dropdown — Required)

Benefit sharing / payments
Seedlings / inputs
Monitoring visits / field officer conduct
Staff behaviour / disrespect / corruption
Community conflict / dispute
Data privacy / consent
Safeguarding concern (harm, exploitation, harassment)
Other (specify)

Q10. Urgency level (Multiple choice — Required)

High urgency – immediate attention required
Medium urgency
Low urgency

Section 3: Incident / Grievance Details

Q11. Where did the issue occur? (Required)

County (dropdown)
Sub-county / Ward / Village (short answer)

Q12. Date of incident or when the issue started (Date — Optional)

Q13. Please describe your issue in detail (Paragraph — Required)

(Include: what happened, who was involved, what support you need.)

Q14. Does your complaint involve any ANA staff member or partner staff? (Required)

Yes
No
Not sure

If Yes:

Q15. Name/Role of the person (if known) (Short answer — Optional)

Section 4: Evidence (Optional)

Q16. Upload evidence (optional) (File upload)

- Photos
- Screenshots

- Voice note
- Any documents

(Allow file uploads, limit to 10MB.)

Section 5: Preferred Outcome & Follow-Up

Q17. What outcome would you prefer? (Checkboxes — Optional)

Explanation / clarification
Apology
Corrective action at project level
Replacement of seedlings/inputs
Payment resolution
Staff disciplinary action
Other (specify)

Q18. Would you like updates on your case? (Required)

Yes
No

If Yes:

Q19. Preferred contact method (Multiple choice)

Phone call
SMS
WhatsApp
Email (if provided)

Thank you. We acknowledge receiving your complaint/feedback, and will look into the matter within 30 working days, unless an alternative timeline is agreed.

Annex 17.2: USSD Prompt Workflow for Complaint & Grievance Reporting

To make it verifier-friendly, this workflow will:

- Generate unique reference numbers
- Categorize Safeguarding as priority
- Allow anonymity but still permit updates
- Back-end produces a grievance log export for Annual Reporting

USSD Menu Flow

Screen 1: Welcome

Welcome to ANA Carbon Project Feedback & Grievance System

1. English
2. Kiswahili

Screen 2: Purpose

What would you like to submit?

Select option:

1. Submit feedback/grievance
2. Check case status
3. Exit

If Check case status:

Enter Reference ID

System responds:

Received / Under review / Action ongoing / Resolved / Escalated to GECA

Screen 3: Category

Select category:

1. Payments / Benefit sharing
2. Inputs / Seedlings
3. Monitoring / Field visit issue
4. Staff conduct
5. Safeguarding concern
6. Data / privacy concern
7. Other

If Safeguarding concern → flag it as priority.

Screen 4: Anonymity

Do you want to report anonymously?

1. Yes (Anonymous)
2. No

If 1 (Anonymous): proceed to Screen 5

If 2: collect name/phone (or confirm phone is okay)

Screen 5: Location

Select your county:

1. Nyeri
2. Kirinyaga
3. Laikipia
4. Other

Screen 6: Village / Area

Enter your village/area name:

(Free text entry)

Screen 7: Description

Briefly describe the issue (max 140 characters):

(Free text entry)

Screen 8: Updates preference

Would you like updates on this case?

1. Yes
2. No

If Yes: the system should store phone number for update messages

If No: store as anonymous-only with no callback

Screen 9: Confirmation

Confirm submission

Submit

Cancel

Screen 10: Case Reference

Thank you. Your case has been submitted.

Reference ID: ANA-####

We will acknowledge within 3–5 working days.

1. Exit