

MONITORING REPORT FOR TIST Program in Uganda, VCS-CCB 011



Document prepared by Clean Air Action Corporation

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Project Location	Ugandan Districts: Amuru, Bushenyi, Gulu, Kabale, Kanungu, Kayunga, Kiryandongo, Kyenjojo, Omoro, Rukungiri, and Soroti
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Validation/Verification Body	AENOR INTERNACIONAL S.A.U. Génova 6. 28004 Madrid- Spain. Telephone +34 914326000 jfuentes@aenor.com www.aenor.com
GHG Accounting/ Crediting Period	16 December 2003-16 December 2063, 60 years (same periods for VCS and CCB)

Monitoring Period of this Report	16 December 2003–17 March 2021
History of CCB Status	1 st Verification, concurrent with Validation
Gold Level Criteria	<u>Community</u>: This project has substantial economic and non-economic benefits for poor farmers, including carbon income, improved crop yields, new crops, education, health trainings, and leadership development. <u>Biodiversity</u>: The project will plant thousands of indigenous trees while supporting critical ecosystems. In particular, TIST farmers are planting vulnerable trees, thus creating sites of high biodiversity conservation priority. <u>Climate Adaptation</u>: TIST trains farmers to use climate resilient planting techniques. The program supports farmers in organizing to meet challenges of climate change, and to develop strategies for issues such as high winds, draught, and erosion.

Table of Contents

1	Summary of Project Benefits	4
1.1	Unique Project Benefits	4
1.2	Standardized Benefit Metrics	5
2	General	10
2.1	Project Description	10
2.2	Project Implementation Status	17
2.3	Stakeholder Engagement.....	21
2.4	Management Capacity	30
2.5	Legal Status and Property Rights.....	34
3	Climate	39
3.1	Monitoring GHG Emission Reductions and Removals	39
3.2	Quantification of GHG Emission Reductions and Removals	48
3.3	Optional Criterion: Climate Change Adaptation Benefits	54
4	Community.....	55
4.1	Net Positive Community Impacts	55
4.2	Other Stakeholder Impacts	65
4.3	Community Impact Monitoring	65
4.4	Optional Criterion: Exceptional Community Benefits	68
5	Biodiversity	74
5.1	Net Positive Biodiversity Impacts	74
5.2	Offsite Biodiversity Impacts.....	79
5.3	Biodiversity Impact Monitoring	79
5.4	Optional Criterion: Exceptional Biodiversity Benefits	80
6	Additional Project Implementation Information	81
7	Additonal project Impact Information	81
	Additional Information.....	82

1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) The farmers members are partners in TIST and receive 70% of the profits from the sale of carbon credits increasing their annual income.	8,346 partners	4.3.1	8,346 partners (first verification and no changes to report)
2) Community Organization: TIST farmers organize themselves as neighbors, and at the community, regional, and national levels. This allows them to develop locally appropriate best practices, share support, and provide mutual accountability	126 ¹ Clusters and 1,310 Small Groups of farmers organized	4.3.1	126 Clusters and 1,310 Small Groups of farmers organized (first verification and no changes to report)

¹ Appendix 08 Monitoring Data: PA summary worksheet, unique entries in column G. TIST UG PD-VCS-011i App08 Verif 01 Monitoring Data 230401v4.xlsx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

1.2 Standardized Benefit Metrics

Category	Metric	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	Ex-Post Project Removals are 565,044 t CO ₂ e	3.2.4	Ex-Post Project Removals are 565,044 t CO ₂ e (first verification and no changes to report)
	Net estimated emission reductions in the project area, measured against the without-project scenario	Not applicable		Not applicable
Forest ² cover	For REDD ³ projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	Not applicable		Not applicable
	For ARR ⁴ projects: Number of hectares of forest cover increased in the project area measured against the	2,821 Hectares of forest cover increased (active)	4.3.1	2,821 Hectares of forest cover increased (first verification and no changes to report)

² Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

³ Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

⁴ Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

	without-project scenario			
Improved land management	Number of hectares of existing production forest land in which IFM ⁵ practices have occurred as a result of the project's activities, measured against the without-project scenario	Not applicable		Not applicable
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	2,821 hectares of land (active)	4.3.1	2,821 hectares of land (first verification and no changes to report)
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	8,346 Community Members	4.3.1	8,346 Community Members (first verification and no changes to report)
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of	2,935 Women	4.3.1	2,935 Women (first verification and no changes to report)

⁵ Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (VCS Program Definitions)

	project activities			
Employment	Total number of people employed in of project activities, ⁶ expressed as number of full-time employees ⁷	75 Employees	4.3.1	75 Employees (first verification and no changes to report)
	Number of women employed in project activities, expressed as number of full-time employees	48 Women	4.3.1	48 Women (first verification and no changes to report)
Livelihoods	Total number of people with improved livelihoods ⁸ or income generated as a result of project activities	8,346 Community Members	4.3.1	8,346 Community Members (first verification and no changes to report)
	Number of women with improved livelihoods or income generated as a result of project activities	2,935 Women	4.3.1	2,935 Women (first verification and no changes to report)
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	75 Employees	4.3.1	75 Employees (first verification and no changes to report)
	Number of women for whom health services were improved as a result of project	48 Women	4.3.1	48 Women (first verification and no changes to report)

⁶ Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

⁷ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

⁸ Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

	activities, measured against the without-project scenario			
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	Not applicable		Not applicable
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	Not applicable		Not applicable
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	Not applicable		Not applicable
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	Not applicable		Not applicable

Well-being	Total number of community members whose well-being ⁹ was improved as a result of project activities	8,346 Community Members	4.3.1	8,346 Community Members (first verification and no changes to report)
	Number of women whose well-being was improved as a result of project activities	2,935 Women	4.3.1	2,935 Women (first verification and no changes to report)
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation, ¹⁰ measured against the without-project scenario	Farmers are planting vulnerable species on approximately 4.7 hectares of land, in addition to 23 hectares of riparian woodlots and 1,430 hectares of hillside woodlots.	5.3.1	Farmers are planting vulnerable species on approximately 4.7 hectares of land, in addition to 23 hectares of riparian woodlots and 1,430 hectares of hillside woodlots.
	Number of globally Critically Endangered or Endangered species ¹¹ benefiting from reduced threats as a result of project activities, ¹² measured against the without-project scenario	No critically endangered or endangered species impacts are assessed. The project is improving the population trends of vulnerable species in line with CCB Gold requirements	5.3.1	No critically endangered or endangered species impacts are assessed. The project is improving the population trends of vulnerable species in line with CCB Gold requirements

⁹ Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

¹⁰ Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.

¹¹ Per IUCN's Red List of Threatened Species

¹² In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2 GENERAL

2.1 Project Description

2.1.1 Implementation Description

The International Small Group and Tree Planting Program (TIST) is a combined reforestation and sustainable development project in Uganda, carried out by subsistence farmers. The farmers plant trees on their land and retain ownership of the trees and their products. They receive training from TIST and a share of the carbon profits from CAAC.

TIST empowers Small Groups of 6-to-12 subsistence farmers in India, Kenya, Tanzania and Uganda to combat the devastating effects of deforestation, poverty and drought. Combining sustainable development with carbon sequestration, TIST already supports the reforestation and biodiversity efforts of over 100,000 subsistence farmers. As TIST expands to more groups and more areas, it ensures more trees, more biodiversity, more climate change benefit and more income for more people. The carbon credits create a new 'virtual' cash crop for the participants, who gain all the direct benefits of growing trees and also receive quarterly cash stipends based on the GHG benefits created by their efforts. The maturing trees and Conservation Farming will provide additional sustainable benefits that far exceed the carbon payments. These include improved crop yield, improved environment, and marketable commodities such as fruits, nuts, and honey.

TIST provides an administrative backbone that supplies training in building nurseries, tree planting, Conservation Farming, building fuel-efficient stoves and malaria and HIV/AIDS prevention; this includes newsletters, weekly meetings at the Small Group level, monthly meetings where groups of Small Groups receive training, periodic seminars at the national level and an award-winning monitoring system based on hand-held computers and GPS. TIST is available to everyone and all are considered equal. Farmers in the project seek to maximize environmental and social impact while supporting and improving existing agricultural activities. Planting trees on privately owned farms in conjunction with agricultural activities is minimally disruptive, resulting in virtually no leakage or baseline emissions. The project will continue to monitor the potential for leakage in the regular implementation of baseline surveys which assess the presence of displacement and other activities that could result in leakage. TIST representatives will regularly conduct site visits to farms to monitor farmers' activities. Further discussion of leakage management can be found in section 3.2.2. Similarly, TIST will assess non-permanence factors through regular site visits. By aiming to visit farms once every 18 months the project will collect substantial amounts of data to make assessments of any losses and corresponding risk factors.

This monitoring report is for a subset of the TIST project in Uganda and applies to 1,310 Small Groups, 8,346 Participants, 3,143 active Project Areas, and 2,821 active hectares. The main species planted are pine, eucalyptus, gravellia, and teak. TIST farmers use a mosaic restoration approach, planting on thousands of individual farms spread across the landscape. These individual farms can largely be found in southwest and northern Uganda (See Figure 2.1.5 A). They are found in rural areas of districts including Amuru, Bushenyi, Gulu, Kabale, Kanungu, Kayunga, Kiryandongo, Kyenjojo, Omoro, Rukungiri, and Soroti.

Verification Number	Date	Monitoring Period	Gross Reductions	Buffer	Issuance
Verification 01	Pending	16-Dec-03 to 12-Mar-21	565,044	56,504	508,539

2.1.2 Project Category and Activity Type

This is a grouped AFOLU (ARR) project

2.1.3 Project Proponent(s)

Organization name	Clean Air Action Corporation (CAAC)
Contact person	Charlie Williams
Title	Director
Address	250 Old Harbor Road, Vinalhaven, Maine, USA 04863
Telephone	+1 720-394-2112
Email	CharlieWilliams@CleanAirAction.com

2.1.4 Other Entities Involved in the Project

Organization name	The Institute for Environmental Innovation (I4EI)
Role in the project	Non-profit focused on co-benefit improvement
Contact person	Blair Martin
Title	Executive Director
Address	250 Old Harbor Road, Vinalhaven, Maine, USA 04863
Telephone	+1 202-309-1356
Email	blairhmartin@gmail.com

2.1.5 Project Start Date (G1.9)

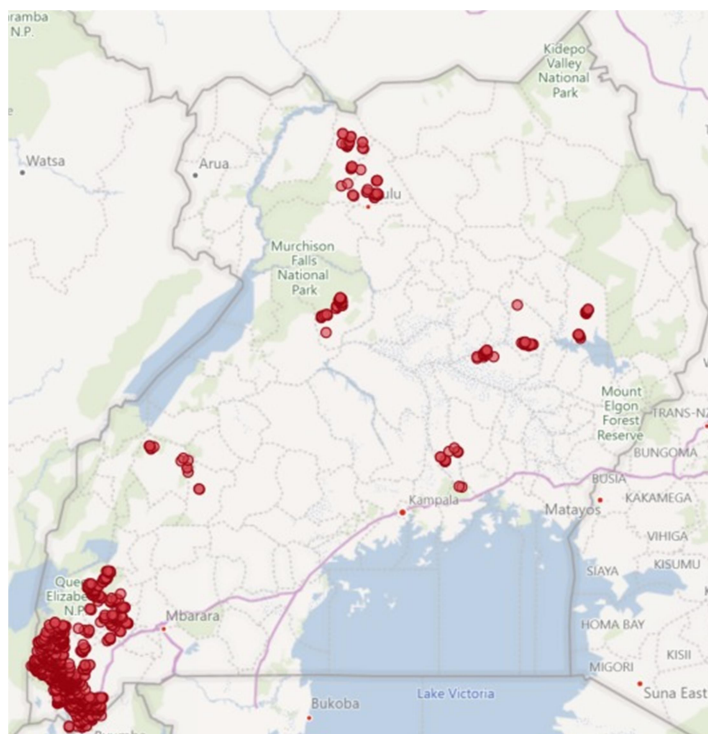
December 16th, 2003

2.1.6 Project Crediting Period (G1.9)

December 16th, 2003 – December 16th, 2063 (60 years).

2.1.7 Project Location

The individual project areas of this project are located in Uganda. Project Areas are distributed throughout the southwest, north, and east. The individual project areas, their location and their boundaries are presented in Appendix 03 as KML files. Appendix 04, the validation data is an Excel spreadsheet of data, which includes a list of each project area.



This photo shows a representative selection of project areas

2.1.8 Title and Reference of Methodology

This project is seeking registration under the Verified Carbon Standard (VCS 4.4) as an Afforestation, Reforestation and Revegetation (ARR) project and has been developed in compliance with the CDM Afforestation/Reforestation (A/R) methodology “A/R Large-scale Consolidated Methodology, Afforestation and reforestation of lands except wetlands” (AR-ACM0003v.2).

The project applies the following CDM tools as applicable:

- “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities” (AR-TOOL 02, v1.0);
- “Estimation of non-CO2 greenhouse gas (GHG) emissions resulting from burning of biomass attributable to an A/R CDM project activity” (AR-TOOL 08, v04.0.0)
- “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” (AR-TOOL 12, v03.1)
- “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” (AR-TOOL 14, v4.2);
- “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity” (AR-TOOL 15, v2.0)
- “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities” (AR-TOOL 16, v1.1)
- “Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities” (AR-TOOL 17, v01.0.0)
- “Demonstration of eligibility of lands for A/R CDM project activities” (AR-TOOL 19, Version 02.0)

2.1.9 Other Programs (G5.9)

- The Project Proponent declares that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program, or to meet binding limits on GHG emissions.
- The Project Proponent declares this project does not create another form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program, or that any such credit has been, or will be, cancelled from the relevant program.
- The Project Proponent declares the project has not been registered, nor is seeking registration under any other GHG programs.

2.1.10 Sustainable Development

Uganda's nationally stated sustainable development priorities are the 17 SDG developed at the UNGA Sustainable Development Summit and the Agenda 2030. The following are some of the sustainable development goals that TIST addresses:



GOAL: There is no poverty – End Poverty in All its Forms – Everywhere

TIST works both directly and indirectly to address the issue of poverty. Farmers receive cash benefits equal to 70% of the profits from carbon sales. They also gain significant financial benefits from their participation in TIST. These benefits include fruit and nut crops, improved crop yields through Conservation Farming, fodder for cattle, wood for craft and fuel, improved land, and training in small business development. Currently farmers receive over \$8 of value per tree planted. Working

with subsistence farmers on degraded land, the TIST program addresses acute instances of poverty; TIST succeeds in creating new revenue streams without interfering with the farmer's primary economic activity.



GOAL: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

TIST addresses the issue of hunger directly. By teaching Conservation Farming, TIST farmers are almost always able to double their crop yields in the first year and can increase yields as much as 400% in subsequent years. TIST farmers also benefit from growing new crops, such as fruits and nuts, that improve their food security. The ancillary benefits of increased fodder and fertile land also improve the

farmers' ability to raise animals. Finally, the planting of trees restores degraded and/or desertified land, improving the long-term agricultural outlook for TIST farmers.



GOAL: Ensure healthy lives and promote well-being for all at all ages

The TIST program addresses many of the health issues facing participants. Training includes a ten-part program on HIV/AIDS education. TIST offers further education on malaria, typhoid, tuberculosis, nutrition, sanitation, clean drinking water, and hygiene topics. This information is distributed at Cluster meetings and through multilingual newsletters.



GOAL: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Education is fundamental to TIST. Through Clusters and newsletters, TIST offers applied and vocational education that is accessible to people regardless of age, gender, or social status. This promotes lifelong learning and democratizes

informational distribution. The revenue from participation in TIST is also reported to often pay for school fees and uniforms.



GOAL: Achieve gender equality and empower all women and girls

Gender equality is a foundational aspect of the TIST program. The practice of rotational leadership supports gender equality by providing everyone a chance to lead.

Training for leadership opportunities is open to both genders, and women are actively encouraged to seek these roles. TIST engages equal numbers of men and women as independent contractors and in leadership positions.

The TIST program's benefits are not determined by land ownership, which is usually patriarchal in the operational countries. Instead, the 'ecosystem service' can be accomplished by women, the contract can be held by women, and it can be transferred through inheritance.



GOAL: Ensure availability and sustainable management of water and sanitation for all

TIST plays a direct role in clean water and sanitation issues, through several activities. Riparian planting works to anchor sediment and improve water quality in the areas where we operate. Through this program, TIST has restored hundreds of hectares of vital riparian land. In areas where TIST participants can be an hour's travel away from the closest water source, the preservation and improvement of existing watersheds is vital. Educational programs about hygiene improve sanitation. TIST also educates farmers on methods for water purification, including through the use of sunlight.



GOAL: Ensure access to affordable, reliable, sustainable and modern energy for all

TIST provides resources and training on the construction of clean burning stoves. These stoves require significantly less wood to produce energy and offer improved ventilation. In some areas, TIST has also provided access to solar power and to manufactured metal stoves. More than 50,000 people have benefited from these technologies through TIST.



GOAL: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

TIST works with people as both employees and independent contractors. Flexible hours allow people to generate a secondary revenue stream from TIST, while also continuing to work on their farm.

Many of the issues addressed by TIST have serious economic implications. HIV/AIDS and land degradation problems have wide reaching economic impacts. By improving health and environmental concerns, TIST significantly improves the economic potential of its participants. Improved soil is a multi-generational and sustainable benefit. More generally, TIST's operations strengthen the environment and societies they operate within, directly and indirectly promoting regional and national economic growth.



GOAL: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

TIST has significant infrastructure and innovation benefits. The Small Groups, clusters, newsletters, and seminars are all designed to facilitate information sharing and innovation. These incubators allow farmers to share improvements and ideas

with one another across geographical, cultural, and social barriers. Information technology and training allow participants to further leverage their intellect and innovation. In addition, the TIST structure is itself an award-winning logistical achievement. Solving the “last mile” problem that many organizations run into in our operational countries constitutes a major innovation.

The creation of a virtual cash crop is a way to eliminate many of the challenges presented by limited traditional infrastructure. The creation and verification of carbon credits requires only limited transportation networks and low-quality internet connections. Using cell phones for training and data collection, and mobile payment platforms, TIST is able to overcome the existing limits of infrastructure.



GOAL: Reduce income inequality within and among countries

The TIST program directly helps reduce inequality. By eliminating barriers to participation, TIST helps to mitigate patriarchy and ageism in the communities we operate. Improving degraded land, increasing crop yields, and providing secondary, or tertiary revenue streams increases the income of some of the world's poorest farmers. Verification reports certify that TIST's operations directly impact more than 50% of the poorest quartile of the communities we operate within. Voluntary carbon

credit sales transfer income from richer countries, where impacts of climate change are costly, and the costs of carbon mitigation are also high, to the TIST farmers, whose costs of mitigation are lower and the benefits higher.



GOAL: Make cities and human settlements inclusive, safe, resilient and sustainable

TIST creates networks across large geographic areas and social barriers. Through leadership identification and training, we work to create more inclusive societies. Our values explicitly encourage inclusion, safety, and sustainability. TIST training and Best Practices are designed to maximize the safety of our participants, employees and contractors. With improved crop harvests and improved nutrition, the TIST areas are more sustainable. They are also more resilient because they are less impacted

by drought and floods. Women, youth, and the disabled are fully included.



GOAL: Ensure sustainable consumption and production patterns

TIST helps to create efficient production patterns by facilitating land fertility improvements such as Conservation Farming, composting practices, and the restoration of degraded land. Avoiding chemical fertilizers and pesticides, while increasing production, makes farms more sustainable.



GOAL: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

TIST works to combat climate change through the sequestering of carbon in a direct, quantifiable way. Sequestration is accomplished through the planting and growing of trees. In addition to sequestering carbon, forests reduce the temperature of the air by evaporating water through their leaves and reduce the soil temperature by

shading the ground.

Increased availability of fuelwood and higher efficiency stoves reduce the consumption of petroleum-based fuels. Using electronic data systems reduces otherwise needed travel. The use of solar power, where applicable, improves lives without the use of kerosene. Creating natural mulch and pest control replaces petroleum derivative fertilizers, chemicals, and the fuel used for transport.

TIST also works with local communities to create adaptation strategies and ways to combat the local ramifications of climate change. Climate change is often considered on the macro level, with little thought to the day-to-day impacts on vulnerable populations. By working directly with communities, listening to their concerns, and helping to develop strategies, TIST's approach is focused on local results. Our work also increases awareness of climate change issues.



biological diversity.

GOAL: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

TIST's Riparian Program has a direct impact on marine resources. The protection of wetlands and riparian areas is crucial to the overall health of watersheds, rivers, lakes, and eventually, seas. Healthy riparian areas trap sediment, store floodwater and energy, recharge groundwater, and promote



to understand the impacts of tree planting on terrestrial ecosystems, it is best to think of TIST groves not only as discrete instances of biodiversity, but also as anchors that support the revitalization of entire regions.

GOAL: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

The planting of millions of trees increases biodiversity, while also providing the structural conditions for subsequent increases. Tree growth not only restores degraded land but also allows for the return of various forms of life. Practices such as agroforestry, apiculture, and Conservation Farming help these dynamics. In order

TIST's activities directly contribute to sustainably managed forests, both by increasing tree growth and serving as buffers to National Parks, High Conservation Value Areas, and other protected lands. In many cases, TIST groves serve as wildlife corridors between habitats.



and people in power. Having women in leadership roles promotes more inclusive ideas of justice. Entering into understandable and mutually beneficial contracts is often a new experience for TIST participants and increases their comfort in navigating a sometimes-daunting part of civil society. TIST's Verified results prove the institutions that make up TIST are effective, accountable and inclusive.

GOAL: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

TIST works in various ways to strengthen the communities and institutions we work with. Small Groups, Cluster meetings, and TIST values promote cohesion. Partnering with civil society organizations strengthens them through shared success; TIST provides forums for direct interactions between subsistence farmers



(including USAID), and with individuals who want to help make the world sustainable. We share our information and successful implementation technologies with all organizations with similar goals and aspirations.

GOAL: Strengthen the means of implementation and revitalize the global partnership for sustainable development

TIST has had a variety of partners in our sustainable development work. These include local governments, civil society organizations, community forest associations, CBO's, NGO's, churches, temples, and other religious organizations. We also work with international conservation, development and health NGOs, international finance and development bi-lateral and multi-lateral organizations

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G1.9)

The starting date of the proposed A/R activity and the crediting period began 16th December 2003. The project is scheduled to last 60 years but may be extended if the carbon market is vibrant enough to support it.

Key dates

Introductory meetings: 21 July to 01 August 2003 in Morogoro Tanzania,¹³ 06 October to 15 October 2005 in Busheyini,¹⁴ Uganda, 12 February 2009 in Bushenyi, Uganda. 16 February 2009 Kabale, Uganda.¹⁵

Start and end dates for each project activity: The start year of each project activity is in Grove Summary of Appendix 04. The end date is December 16th, 2063. TIST maintains a database record of each project area showing when it was first quantified by a TIST staff member and how old the trees were. These records appear at www.tist.org under "Project Areas" and under each region, group center, and Small Group where audits have taken place. The data collected by TIST indicates that the first Small Group was registered into the program on December 16th, 2003 (2003UG15).

Start and end dates for the GHG accounting period: December 16th, 2003-December 16th, 2063,

Monitoring schedule: Monitoring is daily and on-going.

Verification schedule: Verification 01 is contemporaneous with validation. Subsequent verification will be every 2 to 5 years.

Meeting with national authority: 01 March 2005 via email with Godfrey Semakula . 15 May 2005 with Bwango Apuuli.

Legal Agreements: Signing the GHG contract is an ongoing effort. When a Small Group asks to join and completes the application process they may sign the contract.

Justification: TIST maintains a database record of each project area showing when it was first quantified by a TIST staff member and how old the trees were. These records appear at www.tist.org under "Project Areas" and under each region, group center, and Small Group where audits have taken place. The data collected by TIST indicates that the first Small Group was registered into the program on December 16th, 2003 (2003UG15).

Gantt Charts: The following Gantt charts show the timing of annual events for the project. The numbers along the top of each chart are years. Where "project" is indicated in the title, it is for the 60-year project life. Where "project area" is indicated, it is for events that might take place within a project area and the year one may be an event rather than the beginning project date. With all the different project areas, species, farmers and planting schedules, these charts are very general and subject to change.

Main planting schedule (project). Main planting has taken place, but additional planting may take place in individual project areas, over the next few years, where the original planting density is low.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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¹³ Tanzania newsletter, August 2003 at <http://www.tist.org/i2/moreinfo.php>

¹⁴ TIST UG011 Bwango email 051024.pdf. References Bushenyi Seminar. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

¹⁵ TIST UG011 Ara email 090228.pdf. References Kabale and Bushenyi public meetings. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

Deadwood harvest (project areas). Farmers may harvest deadwood any time it exists. For those that lose trees in the first year, it will come in year one. However, it is expected that most deadwood harvest will take place in later years as larger trees are lost, or branches die.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

2.2.2 Methodology Deviations

The project and project monitoring plan meet all of the requirements of the methodology and does not deviate from the baseline scenario, additionality determination or inclusion of project GHG sources, sinks and reservoirs.

As noted in the Project Design Document, TIST has many project areas that do not meet the host country definition of a forest. However, since VCS allows for afforestation, reforestation and revegetation, this is not an issue for this project. Therefore, there are no applicable deviations to the methodology.

2.2.3 Minor Changes to Project Description (Rules 3.5.6)

Not Applicable

2.2.4 Project Description Deviations (Rules 3.5.7 – 3.5.10)

Not Applicable

2.2.5 Grouped Projects

- 1) New Project Areas and Communities (G1.13).** This is the first verification and thus there are no new Project Areas and Communities.
- 2) Removed Project Areas and Communities (G1.13).** This is the first verification and thus there are no removed Project Areas and Communities.
- 3) Eligibility Criteria for Grouped Projects (G1.14).** Each new instance shall meet the appropriate CDM or VCS requirement. This includes eligibility, applicability, additionality, baseline scenario and determination, project boundary identification and monitoring, all as described in the PD documents. Since this is the first verification, there are no new project.
- 4) Scalability Limits for the Grouped Projects (G1.15).** The TIST program in Uganda has grown to 19,433 active farmers and over 4,433 Small Groups. The strong in-country leadership of Uganda and proven ability to manage growth demonstrate that there are no managerial limits to growth. As the program grows, new people are trained to administer to expansion areas. Subsistence farmers planting trees on privately owned land is a broadly applicable approach over different geographies and cultures. This project does not set any scalability limits.
- 5) Risk Mitigation Approach for Grouped Projects (G1.15).** Not Applicable.
- 6) Project Zone Map (G1.13).** No changes have been made, not applicable.
- 7) Changes to Management (G4.1).** Not Applicable.

2.2.6 Risks to the Project (G1.10)

Major project risks are mitigated by project design, as discussed in the PD and repeated below. The long-term sustainability of TIST is dependent upon a carbon market for afforestation/reforestation credits. The market for VCS credits exists but, by definition, is dependent upon the entities buying credits to voluntarily offset their carbon emissions. An expected US market may or may not materialize and, if it does, may or may not allow AR credits. As of the date of this project, the carbon markets appear to be experiencing a modest rebound.

TIST is different than most AR projects, in that it was created for small-scale subsistence farmers. Because of the rules of CDM, many of the farmers in this project have project areas too small to meet the Host Country definition of a forest. Should VCS, or a possible US program, put the same limitation on size, many of the farmers in TIST will no longer be eligible to participate in the carbon market and will lose the financial incentive to participate in the program. TIST has mitigated this risk by achieving what it has at the lowest costs possible. Rather than using expensive Western experts, it has deployed a sophisticated, yet easy to use, monitoring system and relies on capacity building with the Small Group members and their desire to improve their lives.

Another risk is that farmers will drop out of the program. This is mitigated by the fact that there are thousands of individuals involved already and TIST continues to grow. Having a few farmers quit will not have a significant effect on the project.

Natural risks include drought, pestilence and fire. These, however, are mitigated by the fact there are thousands of individual project areas spread over thousands of square kilometers. We provide training on minimizing risks from fires, in newsletters and in training broadcasts, on area radio programming.

2.2.7 Benefit Permanence (G1.11)

Validation and Verification are happening simultaneously. Benefit Permanence described in the Project Description documents (repeated below) applies.

TIST is a comprehensive program that includes training in climate change and biodiversity. The following describes some of the training and their benefits that are in effect and will be maintained during the duration of the program.

- Training in the benefits of specific tree species will result in more trees selected that have a value other than as harvested wood or for carbon revenue. Examples include macadamia trees for their nuts, citrus trees for their fruits and Croton megalocarpus as a source for biofuels.
- Training in the maintenance of a sustainable woodlot. Wood and charcoal are some of the greatest expenses for subsistence farmers. Learning the value and convenience of a sustainable woodlot will ensure that it is maintained beyond the life of the project.
- Training in the benefits of biodiversity will help the farmers make the choice to keep trees, rather than cut them down. The benefits include more productive soil, return of edible indigenous plants, enhanced area ecotourism, and return of native wildlife that is useful to them personally (e.g. bees).

Tree planting and education activities will create benefits beyond the duration of the project. Even in the absence of a carbon market, trees provide through fruits, nuts, medicine, timber, etc. Trainings on sustainable development issues, leadership development, and community organization will improve the lives of farmers even in the absence of TIST. We believe the above is sufficient to create a sustainable program to maintain and enhance the CCB benefits beyond the project lifetime.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

TIST operates as transparently as possible. Stakeholders are given access to the full project documentation in several ways:

- The project documents will be posted with VERRA as part of the 30-day comment period.
- TIST holds monthly public meetings open to all community members. These meetings happen locally, in individual communities. Participants are encouraged to invite other interested stakeholders. TIST representatives share project information and receive feedback. Individual Clusters will be notified at their monthly Cluster meetings and through dissemination of The Tree newsletter. The TIST program is represented by trained Cluster Servants at these meetings, who will be equipped to answer questions.
- If we have an email address for a stakeholder submitting comments, they will be sent an email with a link to the project web page and notice of the public meeting. Links to the project web page are included, as well as links to all of CCB and VCS documentation.
- The email notices contain a summary of the project.

All of the documentation that TIST generates to support validation and verification is publicly available online. TIST further allows for public access to its proprietary database, including data on progress updated in real time. TIST provides newsletters (The Tree) through the Cluster structure. These newsletters include the TIST URL, as well as updates and information about the program. These newsletters are distributed monthly in the local languages of participants. They further include contact information for those with questions.

2.3.2 Dissemination of Summary Project Documents (G3.1)

Measures taken in Section 2.3.1 include access to summary project documentation. Information is collected and made publicly available on the TIST website. Directions to this website are included on newsletters distributed at Cluster meetings. Prior to validation and verification, TIST announced a summary of results of the monitoring plan in a monthly newsletter. This summary was disseminated in 6 languages: English, Runyankore, Ateso, Luganda, Luo, and Kiswahili.¹⁶

2.3.3 Informational Meetings with Stakeholders (G3.1)

TIST holds regular and ongoing informational meetings with project participants. Dozens of these meetings happen in Uganda each month, resulting in thousands of points of contact between project participants and project representatives. These meetings serve as a forum for both educating participants and learning from them. Project participants are given the opportunity communicate directly with in-country and US-based management.

Since the project start date, more than 867 of these meetings have occurred.¹⁷ This project incorporates 124 Clusters, most of which are meeting monthly. Thousands of individual farm visits by Quantifiers also serve as opportunities to communicate regarding TIST.

These Cluster meetings are publicized to participants upon entry to the program. Each Small Group agrees to send a pair of representatives to each monthly Cluster meeting, ensuring a constant line of communication between the program and the group. These meetings are held at central locations in

¹⁶ The Tree, Uganda newsletter, November 2020.

<http://www.tist.org/i2/docs/NL/2019.11.November.UG%20Newsletter.pdf>

¹⁷ Exhibit 46, Cluster Meetings Report, "PD Total UG011" worksheet, cell J28

communities that are intended to be within walking distance of TIST participants. The locality of the meetings encourages awareness from the broader community, who is welcome to attend. Meetings are regularly discussed in TIST newsletters, and by TIST workers in the communities.

2.3.4 Community Costs, Risks, and Benefits (G3.2)

Relevant and adequate information about potential costs, risks and benefits to communities is provided in introductory meetings, training meetings and Cluster meetings. These are open meetings where all can participate and ask questions. Cluster meeting are monthly and the meetings are within walking distance so information is provided. New members are given the TIST application information.¹⁸ They are shown how to access the TIST website with their mobile phones where more information is available. Additionally, quantifiers, also termed Cluster Servants due to their expanded role, visit the project areas regularly and attend the Cluster meetings where further questions can be asked and clarifications made. See Exhibit 54 evidencing that the typical Cluster meeting includes “answering questions”.¹⁹ See Exhibit 46 for a list of the Cluster meetings and the training topics²⁰. During this monitoring period there were 2,389 person-sessions on TIST. The prospective members are walked through the GHG contract at the meeting and then take it back to the Small Group. At the Small Group, they and continue to discuss it and ask more questions at the next Cluster meeting or ask the Cluster Servant. The Tree newsletter carries articles that cover a wide range of TIST benefits.

Part of the application process covers costs. TIST was designed for zero cost of entry but with the expectation that the farmers will put in the work to grow the trees. TIST provides training to raise seedlings from seeds using seedbeds. The effort to plant the trees their labor. Members receive training for free.

The risks are discussed during the application process. One is that there is more risk in the first few years when seedlings are young. During that time the risks are not much different that growing crop. Since this is what the farmers are experienced with, they are aware of the risks.

The benefits are discussed throughout the application process. They include all the training tabulated in Exhibit 46. In addition, as documented in the GHG contract and the application packet, they are provided information about the tree payments and the 70% profit share. This latter payment has been the focus of many Cluster meetings and newsletter articles. It is reinforced by the actual payments. As noted in Section 4.3.1 TIST has paid farmers US\$3,951,237.²¹

The above demonstrates how relevant and adequate information about potential costs, risks and benefits to communities has been provided to communities in an understandable form and in a timely manner prior to any decision they may have been asked to make with respect to participation in the project

2.3.5 Information to Stakeholder on Verification Process (G3.3)

TIST used Clusters, Small Group structures, and newsletters to distribute information about the VCS/CCB validation and verification process, explaining that we are attempting to achieve dual certification. Cluster

¹⁸ Exhibits 36, 37, 38, 39 and 04 TIST Information: TIST Intro FAQ, TIST SG Eligibility Requirements, TIST SG Membership Application, TIST Values, and the GHG Contract, all at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

¹⁹ Exhibit 54, Cluster Meeting Checklist: TIST UG PD-VCS-Ex 54 Cluster Meetings Checklist.docx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>.

²⁰ Exhibit 46, Cluster Meetings: TIST UG PD-VCS-Ex 46 Cluster Meetings 210609.xlsx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>.

²¹ Based on administrative records on the TIST database, extracted using a custom query. Tables 2019group_profit_share, 2020group_profit_share, 2021group_profit_share, payment_group_voucher. The TIST database is password limited.

Servants informed TIST farmers of verifier visits at Cluster meetings. The intent to validate and verify this project and the date of audits was in The Tree.

TIST's operational structure facilitates direct and independent communication between stakeholders and the representatives of the validation and verification bodies.

2.3.6 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

The intent to validate and verify this project and the date of field visits was announced in The Tree newsletter. TIST's operational structure facilitates direct and independent communication between stakeholders and the representatives of the validation and verification bodies. Once site visit locations are determined by the VVB, farmers will be given appropriate notice and the opportunity to speak directly with the VVB without supervision from TIST workers.

2.3.7 Stakeholder Consultation (G3.4)

The original TIST program was started in Tanzania, in late 1999, to meet local needs in a sustainable way, while at the same time addressing climate change. Uganda sent their first stakeholders to a TIST seminar in Tanzania in July 2003.²² These farmers went back to Uganda and introduced TIST by word of mouth and Small Group meetings. Interested individuals formed Small Groups and began planting trees.

Following the 2003 stakeholder meeting, the program held a series of stakeholder consultations starting in 2005. The first occurred in May of 2005 with the National Focal Point for the UNFCCC.²³ Subsequently, the program held a weeklong seminar with Ugandan farmers from October 6-October 15th, 2005 in Bushenyi, Uganda.²⁴

In 2006 as part of an Environmental Impact Screening, auditors interview various stakeholders on behalf of TIST including local government and forest officers.²⁵ Beginning in 2007, the program began to implement regional "node" meetings, the precursor to today's Clusters.

Two formal public meetings were held, one at the Katungu Mothers Union in Bushenyi on 12 February 2009²⁶ and one at the Kirigime Guest House in Kabale on 16 February 2009.²⁷ Notice was given in two Uganda newspapers, the New Vision and Orumuri. Announcements were made on the radio in Bushenyi on 2, 3 and 6 February 2009. Announcements were made on the radio in Kabale on 3, 4 and 5 February 2009. Letters of invitation were also sent to selected stakeholders and interested parties.

²² Tanzania newsletter, August 2003, page 1. <http://www.tist.org/i2/moreinfo.php>

²³ TIST UG011 Bwango email 050523.pdf. Discuss contacts with National Focal Point for UNFCCC. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

²⁴ TIST UG011 Bwango email 051024.pdf. References Bushenyi Seminar. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

²⁵ Exhibit 01 Environmental Screening: TIST UG PD-VCS-Ex 01 Environmental Screening 060803.pdf at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

²⁶ 2009.02.February.TIST UG Newsletter.pdf: Page 2, picture of Andrew Dinsmore at Katungu Mothers Union, Bushenyi. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

²⁷ TIST UG011 Ara email 090228.pdf. References Kabale and Bushenyi public meetings. TIST UG PD-VCS-Ex 57 UG Stakeholder Notice.zip at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

A public stakeholders meeting was held 07 January 2013 at the TIST Office located at Katungu in Bushenyi, Uganda where comments were taken.²⁸

Another public meeting was held on 04 November 2014 at the Holy Cross Guest House in Kanungu, Uganda.²⁹

The program began to implement the Cluster system in Uganda with funding secured in 2015. This system took several years to develop, with initial meeting records from 2016. From 2016-Present (except for during COVID-related lockdowns) the program has been running and recording Cluster meetings across each region of TIST Uganda.

Since TIST was ultimately designed by the participants and the participants are from the community, it can be stated that:

- Community Groups and Other Stakeholders have influenced project design and implementation
- The CCB Gold section demonstrates that TIST has been optimized to benefit the community
- TIST respects the local customs, values and institutions
- Consultation with stakeholders such as district foresters have addressed maintaining high conservation values
- TIST has a constant consultation process in effect

The TIST program was designed by and for stakeholders through visioning exercises and thousands of subsequent meetings. The program's intention and design are to provide benefits specifically for poor, marginalized, and vulnerable peoples. Because of the unique nature of the TIST program, virtually all consultation being implemented constitutes "continued consultation and adaptive management".

2.3.8 Continued Consultation and Adaptive Management (G3.4)

TIST has a collection of written stakeholder comments. Stakeholder feedback is constantly being incorporated into the program. However, TIST's approach is not simply to solicit feedback and then adjudicate what suggestions are meritorious. Farmers are able to provide suggestions and advice from their own life directly to members of their Small Groups and their Clusters. Ideas that work for a Small Group or Cluster are then shared via TIST Quantifiers and through the newsletter- this "networking effect" is one of the main benefits associated with the TIST program. For instance, one community began to use the structure and byproducts of participation in TIST to begin making soap. Their success was then recorded and shared through the newsletter. Similarly, successes with apiculture and agroforestry practices have been disseminated across the program area. In this way TIST employs a "bottom up" approach.

TIST is a community-based project, which means that the thousands of farmer-members represent a cross-section of population. TIST membership is further comprised of government officials, church leaders, and members of other NGO's who are able to contribute input from diverse sources representing local leaders and cultures.

The network of TIST Quantifiers and representatives, combined with the thousands of Cluster meetings occurring annually, provide numerous contact points for local, national, and international organizations to

²⁸ Exhibit 14b Public Comments CCB-002: TIST UG PD-VCS-Ex 14b Public Comments CCB-002.doc, Page 4, contains newspaper notice for 7 Jan 2013 public meeting. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

²⁹ Exhibit 14c Public Comments CCB-001 V02: TIST UG PD-VCS-Ex 14c Public Comments CCB-001 V02.doc, pages 5 and 6, contains newspaper notices of 4 Nov 2014 public meeting. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

make contact and provide input. Thus, TIST is able to leverage its networks into a structure providing continuous feedback and consultation.

At the Small Group level, member farmers meet with TIST representatives regularly, where they have an opportunity to ask more questions and make more comments. Since one of TIST's main focuses is adopting best practices, these are forums to review what is working about the program and how it can be improved, facilitating adaptive management. TIST's operational structure ensures that marginalized groups, in particular women and youth, are attending meetings and contributing to the dialogue. In this way, the program is able to proactively address the needs of marginalized groups.

Changes to the program are announced in the newsletter. The result of this stakeholder process has led to numerous invitations for TIST to come to new villages and numerous positive comments about TIST, as well as numerous improvements to the program. This structure has resulted in an adaptive and dynamic program, with constant changes occurring as feedback is solicited.

2.3.9 Stakeholder Consultation Channels (G3.5)

All consultations and participatory processes have been undertaken directly with communities and other stakeholders. This is ongoing and demonstrated through the structure of the program.

Cluster meeting are held about once per month at each cluster where Small Group representatives (TIST Members) attend with Cluster leaders and Cluster Servants for training, to receive payment and to discuss any issue brought up by the members. Exhibit 46 (Cluster meetings), documents 867 meetings in Uganda from up to 7 June 2021 which include 2,389 person-sessions on What is TIST, TIST Eligibility, TIST Values, Developing Best Practices and GHG Contracts.³⁰ Dates and locations are provided. The meetings have been held at 62 clusters. The Cluster Meeting Checklist gives an idea of the contents of a typical meeting.³¹

Seminars are held periodically where representatives from multiple clusters are invited. The Seminars include reports from the areas, program updates, reaction to events, program issue, training and more.³²

TIST Uganda has published 131 issues of "The Tree" newsletter through 2021 containing 604 articles.³³ We print about 1,500 issues per month and distribute them at Cluster meeting. The Small Group representative takes them back to their group to share. Exhibit 53 is an index listing all articles.³⁴

TIST has held 5 public meetings announced in newspapers, open to the public and where comments were taken.³⁵

The cluster meetings are undertaken directly with communities and stakeholders and led by the Ugandan staff. The seminars are undertaken directly with the communities. The Newsletter are given for free to the members at Cluster meetings. The justification that adequate levels of information sharing has occurred is based on the number of meeting, number of attendees, the wide range of subjects, the fact they are open meetings (held outside in common areas) and the number of newsletter provided.

³⁰ Exhibit 46 Cluster Meetings: TIST UG PD-VCS-Ex 46 Cluster Meetings 210609.xlsx

³¹ Exhibit 54 Cluster Meetings Checklist: TIST UG PD-VCS-Ex 54 Cluster Meetings Checklist.docx

³² Exhibit 55 UG Seminar Notes: TIST UG PD-VCS-Ex 55 UG Seminar Notes.zip

³³ TIST UG011 Project web page: <http://www.tist.org/i2/moreinfo.php>

³⁴ Exhibit 53: UG Newsletter Index TIST UG PD-VCS-Ex 53 UG Newsletter Index.xlsx

³⁵ Exhibits 14 Public Comments: TIST UG PD-VCS-Ex 14e Public Comments CCB-001 V03.doc

TIST UG PD-VCS-Ex 14d Public Comments CCB-002 V02.doc

TIST UG PD-VCS-Ex 14c Public Comments CCB-001 V02.doc

TIST UG PD-VCS-Ex 14b Public Comments CCB-002.doc

TIST UG PD-VCS-Ex 14a Public Comments CCB-001.doc

The number of Cluster, seminars, newsletter and public meetings are justification that adequate levels of information sharing have occurred.

2.3.10 Stakeholder Participation in Decision-Making and Implementation (G3.6)

First is should be noted that TIST was designed so that subsistence farmers, especially women, would be eligible for revenues from the sale for GHG credits. The program design, by necessity required conformance with CDM and later VCS/Verra (VCS and Verra did not exist in 2003). So the general design of the program needed to adhere to the then GHG standards. As noted in Section 2.3.7, we began our consultation with farmers in Tanzania to determine how to develop the program on the ground that worked for and benefitted the farmers. Ugandans were invited to participate. We had the benefit of Ara Bannyanga, a Ugandan elder, to help guide the development of TIST Uganda to make sure we conformed with Uganda norms. Ugandans have been involved and led since the beginning.

CAAC has no ex-pat managers in Uganda. All of the host country leaders are Ugandans from the project areas. As such, they are in-grained in the culture and operate TIST in regard to cultural sensitivity. They lead the seminars. The Cluster leaders are from the Cluster and lead the meetings and handle the administrative function of the Cluster. Ugandans from the program write the newsletter and have members write short articles. The Cluster Servants/Quantifiers and Auditors are Ugandans, often from one of the local Clusters.

Gender sensitivity is built into the program. It was designed for gender equality from the beginning. Against culture norms for male leadership and domination, we required “one man and one woman” to attend seminar and be Small Group representatives at Cluster Meeting. We try to maintain 50% women on the Leadership Council and are currently at 40%. Cluster Leaders are about 50% women and women are 66% of the Cluster Servant. A women is in charge of the expansion and a women is in charge of the accounting. CAAC employees are 75% women. The I4EI executive director and a major CAAC stockholder is a women. Their participation in TIST has meant that gender sensitivity is front and center with everything we do. Women make up over 35% of the members in a culture where typically men are head of the household.³⁶ 38% of the signatories of the GHG contracts are women and 40% of the prepayments and profit share go to the women.

TIST has a sexual harassment policy that states among other things:³⁷

- “Sexual harassment is defined as any unwelcome or unwanted sexual advance, request for sexual favors, or other verbal or physical conduct of a sexual nature from someone in TIST that creates discomfort and/or interferes with the job.”
- Harassment due to race, religion, sex, sexual harassment, national origin, disability or age status will not be tolerated in TIST. Such conduct is subject to discipline, up to and including termination.
- Any worker whom believes he or she is a victim of sexual harassment must immediately report any incident to the Leadership Council.
- TIST will not tolerate retaliation against any worker who complains of sexual harassment or provides information in connection with any such complaint.

The measures needed and taken for effective participations are:

- Involve the communities in the design stage of the project; before it is implemented. TIST Uganda determined the needs of the farmers through Small Group visioning exercises, to learn their needs and desires. As the program is implemented, Small Groups and Clusters provide avenues

³⁶ Section 4.1.1

³⁷ Exhibit 34, Sexual Harassment Policy: TIST UG PD-VCS-Ex 34 Sexual Harassment 170120.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

for continued dialogue as discussed in Section 2.3.8. When TIST came to Uganda, they brought in the community members as partners and leaders to determine cultural appropriate methods for expansion. This process led to the development of several currently integral components of TIST program. The TIST Values of honesty, accuracy, transparency, mutual accountability, service to one another, and small budget/big results were formally articulated. These values were vetted by other countries' participants and came to undergird the entire program in all countries.

- Cluster organization borrowed previous TIST practices, including rotating leadership and the policy of "one man, one woman". This operational unit has become one of TIST's defining features, and a huge part of the program's success.
- Hold regular seminars to keep the community members informed and to see what is working and what is not. When there are suggestions or changes that are locally appropriate, Small Groups and Clusters are able to serve as incubators for these changes or improvements. When information needs to be passed to management for operational suggestions, it is communicated through the Cluster leader and Cluster Servants to the "Group of Cluster" meetings and to the Leadership Council. These administrative structures use the same communication channels to solicit clarifications and provide transparent feedback. Both middle and senior level management in Uganda is well appraised to receive input from farmers because they themselves are drawn from the network of TIST participants. They are peers.
- Use a structure such as the Small Groups, Clusters and newsletters for training, to disseminate information and to develop other program elements.
- Encourage rotating leadership at all levels. This rotational leadership alternates by gender, ensuring equal access to leadership positions and decision making. Gender parity is maintained in the national Leadership Councils.
- Use a Leadership Council made up TIST farmers that have excelled in leadership to operate the program.
- Train and use TIST farmers to do the monitoring and keep them trained through seminars and internal audits. See Section 2.3.14 and Section 2.4.1 for further details

2.3.11 Anti-Discrimination Assurance (G3.7)

The measures taken are to inform the participants and workers of TIST policies, to inform them that they should contact the Leadership Council if they have been a victim of sexual harassment, or discrimination, and to inform them that there is a grievance process that they can follow

The sexual harassment policy³⁸ and non-discrimination³⁹ policy are posted on the TIST Mobile website where it is accessible by members with a mobile phone. A member that has been found to discriminate or sexually harass can be removed from TIST. A TIST worker that discriminates or sexually harasses can be dismissed. From project start to present, TIST Uganda has had no such complaints.

2.3.12 Grievances (G3.8)

Feedback and grievance redress procedures are publicly accessible on the website. New TIST workers are oriented on these policies. Links to these policies are published in the monthly newsletter. To date we have not had a formal grievance. If there is one, it will be published in The Tree and presented to the Clusters.

³⁸ Exhibit 34 Sexual Harassment: TIST UG PD-VCS-Ex 34 Sexual Harassment 170120.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

³⁹ Exhibit 35 Non-Discrimination: TIST UG PD-VCS-Ex 35 Non-Discrimination 170120.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

2.3.13 Worker Training (G3.9)

Local capacity is not lost through staff turnover. First, we have many people on staff in Uganda that do common jobs. For example there are 70 Cluster Servant including some more senior quantifiers that know how to quantify, train and help at Cluster meetings. They provide institutional knowledge and help train new quantifiers. Some of the leadership positions are rotating. For example, Cluster Leaders come from the cluster. The Leader serves 6 months, rotates off and is replaced by the co-leader. The Cluster coordinator becomes co-leader and a new member is brought on as coordinator. We also have the TIST data system. The smartphones have an easy to use user interface that walks the user through the steps for quantification, expenses and other data components. We have written manuals available on the website. And we have capacity in Kenya that can provide extra support should it be needed.

TIST begins in an area with a series of orientation seminars. TIST members are introduced to the program and participate in the customization of the program to the locale. Virtually all the local staff is hired from the TIST membership. Nearly all Quantifiers and trainers are from the local membership. Staff and Quantifiers are hired based on ability, not gender, tribe, cultural background, or level of education. However, all effort is made to ensure a balance in gender and tribal affiliation. Training is passed on to new workers through the seminars and working with an experienced TIST member. As needed, the US team has held seminars to provide new information. Cluster Servants/Quantifiers receive ongoing training as needed and attend a training seminar at least once per year. They are given access to the Quantifier Manual. During the seminars, they are trained on the TIST monitoring plan, which includes use of the smartphones and GPS, use of the custom data collection software, how to maintain their data, synchronizing their data with the TIST server, the importance of good data, taking tracks of the Project Area perimeters, taking secondary tracks of the Project Area perimeters, counting trees, the importance of proper tree counts, identifying tree species and tree ages, taking proper circumference measurements, keeping accurate expenses, GHG contracts and any new program initiated.

Small Groups training is ongoing. The Small Groups are all assigned to "Clusters," an administrative unit within walking distance of a central point. The Cluster meetings are supposed to be held monthly and will take place at least once per year at each Cluster. While attendance is voluntary, Small Groups are encouraged to send representatives to every meeting. Training includes Conservation Farming, biodiversity, cook stoves, the GHG contract, climate change, selecting tree species, the benefits of different species, preparing nurseries, tree management, HIV/AIDS, malaria and other subjects of interest to the members. The three Cluster Leaders are rotated every six months. The Cluster Servants train them and guide them. Over the last year, TIST has implemented policies to record and monitor Cluster Leadership to ensure proper gender balance is kept.

2.3.14 Community Employment Opportunities (G3.10)

Local capacity is not lost through staff turnover. First, we have many people on staff in Uganda that do common jobs. For example there are 70 Cluster Servant including some more senior quantifiers that know how to quantify, train and help at Cluster meetings. They provide institutional knowledge and help train new quantifiers. Some of the leadership positions are rotating. For example, Cluster Leaders come from the cluster. The Leader serves 6 months, rotates off and is replaced by the co-leader. The Cluster coordinator becomes co-leader and a new member is brought on as coordinator. We also have the TIST data system. The smartphones have an easy to use user interface that walks the user through the steps for quantification, expenses and other data components. We have written manuals available on the website. And we have capacity in Kenya that can provide extra support should it be needed.

TIST does not have an expatriate staff. Although the main management staff and computer development are in the US, the Uganda program is run by Ugandans from the Rukungiri, Kabale, and Kanungu areas. The Cluster Servant/Quantifiers are largely TIST farmers trained to use the monitoring system. The land and trees planted belong to the TIST farmers. The TIST farmers work together to establish the best practices for their area (whereas the Kenyan and Indian farmers establish their own best practices more suitable to their areas). The local managers are the Leadership Council, which is made up of Ugandans. Cluster meetings and Small Group meetings are run by Ugandans. All TIST members have an

opportunity to be group leaders, regardless of education or gender. TIST members are utilized as volunteers, independent contractors and employees based on achievement, not gender, education or social status. TIST holds regular training seminars for Quantifiers and conducts regular audits to make sure their skills are honed.

We strive for gender equality. About half of our Cluster Servants/Quantifiers, Auditors, Cluster Leaders and Leadership Council are female. Females hold positions of responsibility like voucher payments and expansion. When Seminars are held, Clusters must send at least one man and one woman. When a Cluster shows up with all males, they are sent home with instructions to send a woman.

Opportunities are open to all, especially marginalized people. We do not have a formal education requirement for any position. Those that have proven they can do the job are the ones doing the job.

2.3.15 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

Most of the Ugandans working for TIST knew their rights before starting employment. Even so, CAAC uses an employment contract that was vetted by local counsel that reiterates the more important parts of the relevant employment law such as salary, types of leave, rest days and termination. Their contract has been reviewed by local counsel. Workers are given the contract to read well in advance of signing and given the opportunity to ask any questions about the terms.

The employment laws are listed below. CAAC is not in violation of these laws.

- The Employment Act, 2006
- National Social Security Fund Act, Cap 222

All employees are given an overview of their rights when hired or at training meetings. The contents of "TIST Uganda: Employee Rights"⁴⁰ are provided to them either verbally or in writing.

2.3.16 Occupational Safety Assessment (G3.12)

TIST members are conducting activities that they normally do, i.e. farming using manual labor. TIST workers such as Cluster Servants walk or use public transportation. Their job does not require them to engage in activities that are inherently unsafe. The risks facing TIST workers are minimal and no different than those affecting anyone living in the area. Such risks and mitigation factors are:

- Matatus and Boda-bodas. Do not take rides if the driver appears to be intoxicated or drives in a reckless manner. If the driver is driving too fast or unsafe tell the driver to drive slower and safer. If it persists, ask to be let out or off the vehicle. In case of a robbery, do not resist and surrender the TIST equipment if it is demanded. Report the incident to the UG Team within 24 hours.
- Snakes. Be aware when moving through areas where you cannot see where you are placing your foot. If unsure, use a long stick to prod the bushes or grass to identify the presences of snakes. If a poisonous snake is seen, leave the area and notify the farmer. There are NO first aid treatments for poisonous snake bites. If you are bitten by a poisonous snake you must go to the nearest hospital for anti-venom. The bite may be fatal if not treated. You could lose a limb or suffer permanent injury if bitten. You, your partner or the farmer should try to identify the type of snake so that the correct anti-venom can be selected. Even if the snake is killed it can still bite!
- Elephants. Elephants are extremely dangerous. The best way to avoid an elephant attack is to not get in that situation. If an elephant is present in a project area, back away trying not to disturb it. If it attacked, your choices are: i) stand your ground, it may be a bluff charge. ii) if you are close

⁴⁰ Exhibit 16 TIST UG Employee Rights: TIST UG PD-VCS-Ex 16 Employee Rights.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

enough to shelter (house, vehicle, fence, large tree), try to back away slowly (keep facing the elephant) and move to the shelter. Elephants run much faster than humans so if you cannot reach shelter, running may just trigger an aggressive response.

- Encountering dangerous people. Should you encounter hostile or dangerous TIST or community members, leave the area and try to get to a place where there are other people present. Do not engage in arguments or physical confrontation. If you are with a partner, stay together and support each other. In case of a robbery, do not resist and surrender the TIST equipment if it is demanded.
- Sexual Assaults. Females should work with a partner in new areas to avoid sexual assaults. If you end up in a situation where you fear an assault, leave the area and try to get to a place where there are other people present. If attacked, yell for help. Report any assault to the police and to the UG Team.
- Dogs. If a hostile dog is present or you are concerned about a dog that is present, ask the farmer to secure it until you finish quantifying. If the farmer refuses, leave the area and notify the TIST Team. If bitten by a dog, go to the doctor. Since dogs can carry rabies, try to determine who owns the dog for in case it needs to be tested. Rabies are fatal without treatment and treatment is necessary within days.
- Bees. The effects of bee stings can range from annoying and painful to fatal, depending on whether you are allergic to the venom. Avoid being stung by avoiding swarming bees and try to remain calm if they are present. Do not agitate the bees. Avoid wearing perfume or scents. If stung, remove the stinger as soon as possible because the longer it stays in the body, the more severe the reaction. If you know you are allergic to bee stings; get stung in the mouth, nose or throat; have shortness of breath; or have severe swelling or swelling away from the site of the sting; get medical help immediately. If you know you have severe allergic actions to bee stings, you should carry an epi-pen (ask a doctor about this).
- Crossing rivers. Do not attempt to cross rivers with high, fast flowing water. You could drown.
- Working on Steep Slopes. Take extra care when working on steep slope. Do not put yourself in a situation where a fall could hurt or kill you.

TIST has a Standard Operating Procedure to address safety. To ensure that safety policy and safety issues are understood, each Quantifier are briefed on the safety policy periodically.⁴¹

2.4 Management Capacity

2.4.1 Required Technical Skills (G4.2)

The following positions and structures are comprised of staff and workers who have the necessary technical skills to implement the program. This is demonstrated by numerous successful validations and verifications, as well as program growth:

- Clean Air Action Corporation (CAAC) is a for profit US corporation that manages the GHG component of TIST. CAAC is TIST's largest contributor, provides technical assistance and uses its host country subsidiaries to manage operations.
- Institute for Environmental Innovation (I4EI), a US based non-profit organization, manages the TIST sustainable development program components. I4EI provides funding from government agencies, foundations, and private donors.

⁴¹Quantifiers' Safety Issues." *TIST MOBILE*, TIST, 2016, www.tist.org/mobile/training/display.php?type=guides&contentid=365&ses=9kb3dvaq3lco0p11fmfdmv106, accessed February 10, 2020

- Thousands of TIST Farmers make up the Small Groups, plant the trees on their lands, manage their own trees and make up the core of TIST.

Operating within the TIST Structure are:

- Leadership Council. It is made up of six to twelve TIST farmers and two full time managers (Ugandan). They supervise the TIST Staff.
- TIST Staff. These are members whom oversee expansion, technical support, accounting, and day to day operations
- Tech Support and QAQC. This is held by a TIST member that rose through the program based on his abilities. He is in charge of daily desk reviews and keeping the field monitoring system operational.
- Voucher Payments. This is handled by a team of TIST farmers that have proven their ability to oversee voucher payments.
- Cluster Leaders. There are three Cluster leader positions per Cluster: Cluster Leaders, Co-leaders, and Accountability people. They serve for a period of four months. After four months of service, the Cluster leader rotates out, the Co-leader becomes the Leader, the Accountability person becomes the Co-leader and the Accountability person is filled by Small Group members from the Cluster.
- Expansion Team. This team is responsible for expanding TIST to new areas.
- Cluster Servant. They serve as Quantifier, trainer and liaison for one or more Clusters.

The required technical skills are community engagement, biodiversity assessment and carbon measurement and monitoring skills. These were brought to TIST Uganda under the leadership of the two founders of CAAC. Together they have over 90 years combined experience in energy, natural resources, monitoring, quality control, transportation, biofuels, pollution control technologies, emission trading, trading program development, third party due diligence, computer technology and management. There is an international staff that supports the program including operating and maintaining the TIST Data System. All personnel and systems have been operational during the monitoring period.

TIST has been operating successfully for over 20 years and has expanded to four countries, 100,000 farmers and planted over 20 million documented trees. The monitoring system they developed won a Computerworld Honors Laureate in 2007. TIST has 14 VCS PDs, all of which have gone through three verifications. TIST has validated and verified seven CCB PDs under the 2nd edition, two under the third edition, all have attained CCB triple gold. TIST was the first project to be verified under CCB. Its successes with CCB demonstrate it has the skills required to implement the project successfully, including community engagement, biodiversity assessment and carbon measurement and monitoring skills.

The management team has chosen to train local TIST members and build local capacity rather than use expat specialist. TIST management has a Leadership Council comprised of trained TIST farmers that handle the day to day in-country management. There is a staff of Quantifiers that do the monitoring, auditors that review the work of the quantifiers, trainers and desk auditors that do preliminary quality control. All have been active during the monitoring period.

2.4.2 Management Team Experience (G4.2)

The two founders of CAAC have almost 90 years combined experience in energy, natural resources, monitoring, quality control, transportation, biofuels, pollution control technologies, emission trading, trading program development, third party due diligence, computer technology and management. They began CAAC in 1993 and helped develop emission trading programs in the US and Canada and were responsible for many firsts in innovative emission control (See CAAC website).

TIST was established in direct response to the needs developed and expressed by Small Groups of Tanzanian subsistence farmers in 1999 and 2000. Attending a Small Group training seminar organized by

the Anglican Diocese of Mpwapwa in July 1999, one of CAAC's founders participated in a visioning exercise with local subsistence farmers. They expressed deep concern about recurrent famine, poor crops, lack of shade and firewood, declining rainfall, declining soil fertility, poor access to water for personal and agricultural use, poor diet, regular health problems including TB and Malaria, lack of economic opportunity, poor cattle forage on eroded lands, and the decline of wildlife due to over hunting and lack of forests. The Small Group seminar, however, did not stop with identifying the local problems; participants established the goals of starting hundreds of Small Groups to plant trees, reduce poverty, improve health, and prevent famine. They decided the groups should work together with each other, and with resources in the US and the UK, to share “njia bora” (best practices) and to start achieving the goals.

With CAAC's involvement with nascent GHG trading in Canada, there was an obvious way to bring these improvements to the farmers, using carbon credits as a financial tool.

The following summarizes CAAC carbon project development experience:

- TIST Program, Tanzania, a small-hold farmer A/R project. It began in 1999, with the first tree planting in 2000. The project is centered around Mpwapwa and Morogoro and includes over 2,000 farmers.
- TIST Program, India, a small-hold farmer A/R project. It began in 2002, in the rural area outside of Chennai, Tamil Nadu. There are about 6,800 farmers and 1.8 million trees. A subset of the Project Areas was been validated and registered as a CDM project (subsequently withdrawn due to a lack of markets for tCERs). There is one validated and verified VCS project, which has been validated and verified under CCB.
- TIST Program, Uganda, a small-hold farmer A/R project. It began in 2003 and is centered around three towns in southwest Uganda (Bushenyi, Kabale and Kanungu). There are about 19,000 farmers and about 7.3 million trees. The DNA approved the project contingent on submitting a PD based on an approved methodology. They also approved the EIA. There are seven validated and verified VCS projects, all of which have been validated and verified under CCB (6 Gold for exceptional community benefits and one triple gold).
- TIST Program, Kenya, a series of small-hold farmer A/R projects. The project started in 2004 and is centered around Mt Kenya. There are about 75,000 farmers and 10 million trees. The project has been accepted by the forest department and DNA for CDM. An EIA was accepted by the National Environmental Management Authority (NEMA). TIST Kenya has seven validated and verified VCS projects, all of which were also validated and verified under CCB (all have attained triple gold for exceptional community benefits, climate and biodiversity).
- Sulfur Hexafluoride emission reductions from electric power equipment in substations of Duquesne Light Company. Reductions were made at numerous locations in Pennsylvania from 1996 through 1999. The reductions were approved as credits under the Pilot Emissions Reduction Trading Program (PERT) in Ontario Canada. CAAC managed the project.
- Methane emission reductions through the recovery of landfill gas from the Lancaster Landfill in Lancaster, New York. Reductions were made 1995 through 1998. The reductions were approved as credits under the Pilot Emissions Reduction Trading Program (PERT) in Ontario Canada. CAAC managed the project.
- TIST has also been a pioneer in the development of measuring sustainable development impacts. The program's farmer-facing structure and focus has allowed farmers to generate diverse benefits that have been recorded in independently administered surveys and TIST's award winning data system. The resulting trove of information allowed TIST to serve as an SD Vista pilot project.

2.4.3 Project Management Partnerships/Team Development (G4.2)

As listed in Section 2.1.4 the PP has partnered with The Institute for Environmental Innovation (I4EI). I4EI is a US non-profit focused on co-benefit improvement. They have worked with the following to improve TIST:

- DLA Piper (an international law firm), they helped the PP improve the GHG contract with the Small Groups.⁴²
- Digital Education Futures Initiative has deployed a mobile phone based education platform centered around TIST farmers.⁴³
- Antares Research is working to improve the assessment of program's impact on UN SDG goals (in development).

All three entities have provided valuable additions to TIST. However, they are considered beneficial additions and were not needed to fill any "gaps" in the project. As noted in 2.4.1 and 2.4.2, the PP and TIST have all the relevant experience is need and is operating 14 other successful TIST projects.

2.4.4 Financial Health of Implementing Organization(s) (G4.3)

CAAC has been in business since 1993 and has operated TIST for over 20 years. CAAC is profitable after all TIST expenses. CAAC has no debt.

Financial statements and a financial plan (both confidential) have been made available to the Validator.⁴⁴ The financial statements show 1) project is entirely self-funding through carbon revenues, 2) CAAC and the TIST project are and have been profitable and 3) the profit has allowed payments of about \$3.9 million in profit share to the Small Groups. The financial statements document the ability of the PP to provide adequate financial support to new project areas included in the project at this verification event.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (G4.3)

The Project Proponent, or any of the other entities involved in project design and implementation, are not involved in, or are not complicit in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, or collusion. CAAC is a small company. It's CEO and Vice President are active in the day to day operation and are very familiar with the financial aspects of CAAC and TIST and are aware of no instances of the aforementioned types of corruption within either organization. The USAID grants also contained prohibitions of these types of corruption.

"TIST Values" are the guiding principles of the program.⁴⁵ They state: 1) We are honest; 2) We are accurate; 3) We are transparent; 4) We are servants to each other; and 5) We are mutually accountable to each other. These values are discussed in Seminars⁴⁶ and are regularly in the newsletter.⁴⁷ They are a training topic at the Cluster meetings.⁴⁸ They are introduced to new members during the application process.⁴⁹ They are a component of the Grievance Policy.⁵⁰ They are incorporated in the GHG contracts. TIST has fostered a culture of honesty, accuracy and transparency, that provides the assurance necessary for this section.

⁴² Exhibit 04 GhG Contract UG 080319: TIST UG PD-VCS-Ex 04 GhG Contract UG 080319.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁴³ <https://learn.tist.org/>

⁴⁴ Both sets of documents are confidential.

⁴⁵ Exhibit 39 TIST Values

⁴⁶ Seminar Notes

⁴⁷ The Tree: January 2018, April 2018, March 2017, May 2017, March 2015, etc.

⁴⁸ Exhibit 46 Cluster Meetings

⁴⁹ Exhibit 36 TIST Intro FAQ, Exhibit 161001.docx, Exhibit 37 TIST SG Eligibility Requirements, Exhibit 38 TIST SG Membership Application.

⁵⁰ Exhibit 33 Grievance Policy

2.4.6 Commercially Sensitive Information (Rules 3.5.13 – 3.5.14)

Commercially sensitive information that has been made available to the Validator but is being excluded from the public is:

- CAAC's proprietary financial model, Exhibit 09.
- CAAC Financial Statement, Audited by a Certified Public Accountant (2022's are Preliminary).
- Individual Carbon Credit Sale Agreements with Small Groups. However, the templates are available.⁵¹

No information related to the determination of the baseline scenario, demonstration of additionality, and estimation and monitoring of GHG emission reductions and removals have been marked to be commercially sensitive or confidential and withheld and in the public versions of the project documents.

2.5 Legal Status and Property Rights

2.5.1 Recognition of Property Rights (G5.1)

All property rights are recognized, respected, and supported. This is demonstrated by the GHG contract with the Small Groups. It states "The Small Group shall own the trees and the fruits, nuts, medicines and all other products from the trees; the stoves; and the crops from the sustainable agriculture." As for ownership of the land, the contract discusses how the members must demonstrate that they own or be entitled to use the land but imparts no rights of ownership or transference to CAAC or TIST. The purpose of the contract is for the members to plant trees on their land and only transfer the rights to the carbon. The project will not encroach uninvited on private property, community property, or Government property. The lands are controlled by the farmers.

2.5.2 Free, Prior and Informed Consent (G5.2)

The project will not encroach uninvited on private property, community property, or government property. This is documented by the GHG agreement among CAAC and the Small Groups.⁵² Consultations regarding the GHG agreement is conducted through training prior to the signing of the contract by each Small Groups. The trainings are described in below in this section. Per the GHG agreement, TIST does not own or control any property nor does the agreement contemplate any acquisition of land from the farmers. It only contracts for the rights to the carbon that is removed by the trees planted by the members. The members demonstrate they have the rights to the land where they plant and attest to the same in the contract. See Section 2.5.1. By signing the GHG contract the members represent that they have the legal right to the land that will become a project area. Nothing in the contract gives CAAC or TIST the right to that land. It also states affirmatively that the Small Groups maintain the rights to the trees, tree products, crop and stoves. The contract only transfers the right to the carbon to CAAC. However, the contract does "allow auditors and quantifiers access to locations of the Small Group activities, including where TIST trees are planted and, when asked, assist them in locating the trees, farms, or other project locations." Therefore, by contract, TIST does not encroach uninvited on private property, community property, or government property.

The process by which free, prior, and informed consent will be or has been obtained of those whose property rights will be or are affected by the project is described as follows.

First, as noted above and in Section 2.5.1, the only property rights that are affected are the rights to the carbon removals resulting in participation in TIST.

⁵¹ Exhibits 03 and 04: GHG Contracts

⁵² Exhibit 04

Second, joining TIST is voluntary. In existing areas, farmers learn about TIST from friends and neighbors and if they are interested are told to attend a Cluster meeting here they are given the application packet.⁵³ In new areas, TIST representatives travel to these areas and make contact with farmers.⁵⁴ The farmers are told about TIST and if they are interested, asked to invite other farmer to a meeting where they are informed about TIST and given an application packet.

Consultation takes place over several months. Prospective members are given an application packet and many opportunities to discuss what it means to join TIST and what the GHG agreement does and doesn't do. The opportunities to learn about TIST include attending Cluster meetings, discussing the applications packet with their Small Groups and consultation with TIST representatives such as Cluster Servants and Cluster Leaders. As noted in Exhibit 46, there have been 2,389 person session of training on TIST since 2018.⁵⁵ As noted in Exhibit 54,⁵⁶ the ideal Cluster meeting includes 2 training sessions, a discussion on who to see regarding application for membership and time for answering questions/ hearing suggestions & concern.

The application packet includes a TIST Info FAQ, eligibility requirements, group application, TIST Values and a GHG contract.

The group application states: "We have an application process made up of several steps to ensure that you have the information you need to decide if you want to volunteer to join, and to create strong group that can work well together to plant trees to fight climate change and improve our communities. The process involves getting information from the TIST websites, developing Small Groups and Cluster meetings and talking with a designated TIST member. After you have taken actions to develop areas where you plan to plant trees a Quantifier will visit your farm to see what you have accomplished. In the process, you will be meeting weekly with neighbors with whom you would like to form a TIST Small Group, and keeping a record of these meetings." They are informed about the website (accessible by mobile phone) and how the TIST members will guide them through the application process and about the trainings required for registration. The application discusses the interview process including attending training meetings, asking questions to learn about the farmer and how group members know each other; asking why the member wants to join TIST and verifying that they understand the terms of the GhG contract that was given in the application packet.

The eligibility requirement list 14 criteria that will govern membership, including signing a GHG contract, planting trees, meeting the requirement of the GHG governing bodies (e.g. Verra), joining or forming a Cluster and Small Group and following the program values (TIST Values). It also gives a description of the payment structure. At this point the farmer has not joined TIST or made any commitments to plant trees.

The FAQ is a four page document that further describes TIST. It begins with the TIST Values of honesty, accuracy and transparency and discusses the culture of TIST. Some key points are;

- Who is TIST? We are! It describes the member community and how we take actions to improve the environment and address climate change.
- How Does TIST work? It discusses Small Groups, making GHG credits, how we grow leaders with rotating leadership and share best practices.

⁵³ Exhibits 04, 36-39 at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁵⁴ The Tree, January 2018, page 4.

⁵⁵ TIST UG PD-VCS-Ex 46 Cluster Meetings 210609.xlsx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>. See the cluster_meeting worksheet for the dates and location of the meetings. See cluster_meeting2topic for training topics. See PD Total UG011 for summary.

⁵⁶ Exhibit 54 Cluster Meetings Checklist: TIST UG PD-VCS-Ex 54 Cluster Meetings Checklist.docx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>.

- What exactly are 'greenhouse gas credits'? This provides more detail about what is entailed in making credits.
- What is the Greenhouse Gas Contract? "Small Groups enter into a contract with CAAC and promise to plant a minimum of 5,000 trees over five years." In return, they receive an annual incentive payment to maintain and replant trees. The payment is based on the number of live trees in the ground. When the TIST Program is able to cover its costs from the sales of carbon credits, the Small Groups will receive a 70% share of the net profits.
- What are the benefits of being in TIST? These include improved crop yield from Conservation Farming; fruits, nuts, firewood, honey, medicine and other tree products; building local capacity in technology use, training and agroforestry knowledge; new friends; leadership and management skills; opportunities for service to others; stipend payment for live trees and profit sharing.
- How much does TIST pay Small Groups? The payment is 0.02USD per live tree per year. While this seems small at first it is much more than the value of sequestered carbon in the early years of a project area. Ultimately, however, they receive 70% of the profits from carbon sales.
- Where does the money for the tree-planting incentives come from? The initial investment comes from CAAC.
- Does TIST provide material handouts to the groups? "TIST does not provide any materials such as planting pots, tools, seeds or seedlings. Instead, we provide information and training so that all of us can perform the activities ourselves."
- Can anyone join TIST? "TIST is expanding rapidly. Because we do the work ourselves and we keep our budget low, our results are high and we accomplish a lot. If people in an area are willing to live by the TIST Values, work hard and help each other, we invite them to apply to be a TIST Small Group." "Before being registered in TIST, the farmers will need to go through an application and training process to make sure that they are serious and qualified. After Registration, they become part of the TIST Program and can start helping each other improve their environment, their farming, and their lives. Then when people ask "Who is TIST?" they can say "WE ARE!"

TIST Values elaborated on the key points of Who Are We?

- We are honest.
- We are accurate.
- We are transparent.
- We are servants to each other.
- We are mutually accountable to each other.

GHG Contract. This is provided with the above material and is part of the training. It is only after the farmer is given the application packet and the training that a farmer is permitted to sign the contract.

This process ensures free, prior, and informed consent has been obtained of those whose property rights are affected by the project. It is a long consultation and, because we have new farmers joining all the time, it is ongoing. Some members in the PD joined in over 15 years ago, and some have joined in the last few years. The documents and training presented above demonstrate we provide the training and information necessary to make an informed decision. The GHG contract is the agreement, only signed after a farmer has made the voluntary choice to join.

Appropriate restitution or compensation is allocated to any parties whose lands have been or will be affected by the project. As noted, no lands will be affected by the project. The TIST contract requires a Small Group to plant trees on their land to sequester carbon. The project makes no claim on the land. The trees, their products and the environmental benefits are kept by the farmer.

The consultation takes place as part of the training described in this section. The compensation is disclosed before the signing of the contract. The GHG contract is the binding agreement.

The project provides compensation for the trees and the carbon. Initially the farmers are paid \$0.02 per tree per year per live tree. When this was established it exceeded the value of carbon in international carbon market that a tree would sequester over a multi-year period. Once the project became profitable from the sale of carbon credits, the members began to receive 70% of the "Project Net Revenue." (The Project Net Revenue is defined as the cumulative revenues from the sale of Carbon Credits from TIST Uganda less the cumulative costs of TIST Uganda, including the pro-rata international development costs and tree payments to the Small Groups). As noted in the first verification report (contemporaneous with this PD), Ugandans have received over \$3.9 million.

In addition, the structure of TIST provides free training in sustainable development ideas and activities that have a multiplying benefit to the farmers.

TIST has allocated appropriate compensation to the parties whose lands have been or will be affected by the project.

2.5.3 Property Right Protection (G5.3)

The project activities do not lead to involuntary removal or relocation of property rights holders from their lands or territories, and does not force rights holders to relocate activities important to their culture or livelihood. TIST is voluntary and does not take any lands or encroach on any lands. TIST does not ask that a farmer displace themselves, family or home or force them to relocate activities important to their culture or livelihood. By the GHG contract, the members maintain ownership of the land and trees. TIST was designed to benefit the farmers and to leave it up to them to decide whether to participate and if they do, where to plant their trees. Any displacement they choose to do of their pre-TIST activities is done with free, prior, and informed consent, as noted in Section 2.5.2.

As noted in Exhibit 40, the farmers are asked a series of questions regarding displacement as part of the baseline survey.⁵⁷ The section begins as follows:

The following questions are to determine if a farmer had to displace any regular activities as a result of planting TIST tree groves. Sometimes, when activities are displaced, this causes the farmer to clear trees on their own or other people's land. Since cutting down trees causes deforestation, TIST does not want members to cut trees in one place so they can plant them in another. This takes away the positive environmental effects of tree planting, and can even have negative effects when older, larger trees are cut down unnecessarily.

NOTE: If while interviewing a farmer about displacement you find that they have been cutting trees as a result of displacement of activities from TIST tree groves, educate them on the dangers and ask them to stop.

The questions include whether there has been displacement of a household, existing forest, cultivation or grazing. The responses are captured on the smartphone database and synchronized with the TIST Server. As part of the process for determining eligibility for the PD, the answers are analyzed and summarized in column AG, Grove Summary, Appendix 04. If there is an "N" in the column, the answers have indicated no displacement and the project area is eligible for the PD. If the answer is blank, the baseline is incomplete and although the project area is in the PD, it will not be included in the monitoring report until it is completed and no ineligible displacements are indicated. If the answer is "Y" the project areas will not be included in the monitoring report until it can be demonstrated that an error was made during the questioning or input. Only the project areas that are designated with an "N" in column AG are active in the PD.

⁵⁷ TIST UG PD-VCS-Ex 40 Quantifier Manual 190613.docx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>. See page 14, Displacement.

While displacement can include farmland under Verra rules, it is a decision made by the farmers and they are compensated with the payments required in the GHG contract.

2.5.4 Identification of Illegal Activity (G5.4)

The Project Zone is the land owned or controlled by the farmers and no illegal activity (e.g. illegal logging) has been identified. The farmers own the trees and can choose to cut them down. However, if the trees are TIST trees, they will be in violation of the GHG contract wherein they have promised to maintain them. If a farmer decides to void the contract and fell their trees, they will be exited from the program and their trees deducted from the Small Group's total. Similarly, if a Small Group decides to cease maintaining their trees they will be removed from the database. Because the TIST program is dedicated to helping farmers, TIST is uninterested in litigating breaches of contract; however, there is a strong social barrier to breaching this contract. TIST farmers understand that by cutting down their trees, they will harm both their Small Group and their community. This is a powerful social force, particularly in strongly communitarian societies. Over TIST's 20-year history, the program has experienced a *de minimus* number of contract issues. The program is further insulated from this dynamic by constant programmatic growth. With a constantly expanding number of farmers and trees, an individual grove or Small Group's removal will never offset net increases.

Since this is the source of TIST's GHG revenues and the removal has to be offset by other trees, TIST continues to train the members in the GHG contract and the benefits of keeping the trees.

2.5.5 Ongoing Disputes (G5.5)

No ongoing or unresolved conflicts or disputes over rights to lands, territories and resources have been identified. No disputes that were resolved during the last twenty years where such records exist, or at least during the last ten years have been identified. There are cases where a member has died and there arises a family dispute over the land. If the member's family cannot resolve the dispute or if the successors do not want to be in TIST, they are released from the contract.

But for the aforementioned family disputes, no other conflicts or disputes have been identified, and a demonstration that no activity is undertaken by the project that could prejudice the outcome of an unresolved dispute relevant to the project cannot be made and is not applicable. In the cases of family disputes, TIST does not take a position with the members or their successors. TIST will re-sign the contract if that is the desire or they will release the members for the contact, therefore not prejudicing the issue.

2.5.6 National and Local Laws (G5.6)

As a tree-planting program that takes place voluntarily on existing farmland, there are few laws that are relevant to TIST. They are, however: A review of the potentially applicable laws and regulations was made by CAAC's US staff, the Uganda staff, and local Ugandan counsel. They include:

- The Constitution of the Republic of Uganda of 1995. It empowers Parliament to enact laws to protect, preserve and manage the environment. It does not contain any language that would have a specific impact on the project.
- The National Environmental Act of 1996. It establishes the National Environment Management Authority (NEMA). In accordance with the Act, TIST submitted an Environmental Screening to NEMA.⁵⁸ Because of the multiple benefits of the project for forests and people, NEMA waived the

⁵⁸ Exhibit 01: TIST UG Environmental Screening

requirement for an environmental impact assessment for the TIST tree planting activities in Uganda.⁵⁹

- The National Forestry and Tree Planting Act, 8/2003. The Act provides for the conservation, sustainable management and development of forests for the benefit of the people of Uganda. While it promotes tree planting, it specifically states that the national and/or local government have "no ownership over trees or forest produce situated on private land."
- The employment laws are listed below. CAAC uses Uganda counsel to advise on issues relating to employment. CAAC is not in violation of these laws.
 - The Employment Act, 2006
 - National Social Security Fund Act, Cap 222
 - Companies Act, Cap. 110). CAAC is registered as a branch and is in good standing to operate in Uganda.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Data / Parameter	Location of project area
Data unit	Latitude and longitude
Description	Single point location of a discrete project area.
Source of data	GPS
Value applied	See "Grove Summary" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	Direct measurement of latitude and longitude of a point within a project area using a GPS. Used to provide a simple location of a discrete project area.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Boundary of project area
Data unit	Latitude and longitude
Description	Multiple points of latitude and longitude that describe the boundary of a discrete project area.
Source of data	GPS
Value applied	See KML file, Appendix 03, for all results.

⁵⁹ Exhibit 02: TIST UG NEMA EA Approval

Justification of choice of data or description of measurement methods and procedures applied	Direct measurement of latitude and longitude of a point within a project area using a GPS. Used to provide a simple location of a discrete project area.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Area of project area
Data unit	Hectares
Description	Size of the area where the project activity has been implemented
Source of data	GPS
Value applied	See "Grove Summary" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	A calculated quantity based on the latitude and longitude values collected with the GPS to determine each project area boundary.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Ownership of project area
Data unit	Name
Description	Ownership of land of project area
Source of data	Exhibits 03 and 04, GHG Contracts
Value applied	Not applicable
Justification of choice of data or description of measurement methods and procedures applied	Each Small Group member is a signatory to a GHG Contracts.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Baseline trees
Data unit	Count of baseline trees
Description	The number of trees existing in a project area, before the planting of project trees, is counted.
Source of data	Trees are physically counted in the field.
Value applied	See "Baseline Trees" worksheet, Appendix 04, for each result.

Justification of choice of data or description of measurement methods and procedures applied	Baseline trees are inventoried and monitored at project start.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Baseline tree circumference
Data unit	Centimeters
Description	The circumference of trees existing in a project area, before the planting of project trees, is counted.
Source of data	Trees are physically measured in the field.
Value applied	See "Baseline Strata" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	The circumference of each tree in each strata are measured and used to determine baseline sequestration. See Section 3.4.
Purpose of the data	<i>Determination of Baseline Scenario</i>
Comments	<i>None</i>

Data / Parameter	Baseline strata
Data unit	Hectares
Description	The area of cropland or grassland at baseline.
Source of data	Estimate based on visual field observations.
Value applied	See "Baseline Strata" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	The percent of cropland and grassland are estimated for each individual project area. The percent is multiplied by the area of the project area. The product is used as part of the procedure to determine the change in baseline carbon stocks. See Section 3.2
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Project trees
Data unit	Count of tree
Description	The number of trees per age and species strata in each project area.
Source of data	Trees are physically counted in the field.

Value applied	See "Grove Summary" and "Strata" worksheets, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	The tree count by strata is used to extrapolate the ex-ante GHG removals. See Section 3.2.
Purpose of the data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Root to Shoot Ratio
Data unit	Fraction, Decimal
Description	Above Ground Carbon to Below Ground Carbon
Source of data	UNEP Good Practice Guidance for Land Use, Land Use Change and Forestry
Value applied	.27
Justification of choice of data or description of measurement methods and procedures applied	Data is specific to tropical forests and is used in ex-ante and ex-post calculations of sequestration
Purpose of data	Determination of Ex Post Calculations
Comments	None

Data / Parameter	Carbon Fraction
Data unit	Fraction, Decimal
Description	Relation of biomass to CO ₂
Source of data	AR-ACM0003v.2 Default value
Value applied	.47
Justification of choice of data or description of measurement methods and procedures applied	Default value of methodology
Purpose of data	Determination of Baseline Scenario and Ex Post Calculations
Comments	None

Data / Parameter	TIST Small Group Number
Data unit	Concatenation (ex. "2004UG413")
Description	This is a value comprised of the year a Small Group entered TIST, the country of the Small Group, and the sequential number in which they joined in a given year
Source of data	TIST Database

Value applied	See "Grove Summary" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	This is a commonly understood identifier used within the database and by field workers to identify groups.
Purpose of data	Determination of Baseline Scenario
Comments	None

Data / Parameter	TIST Grove Name
Data unit	Name
Description	This is a name selected by the Small Group to identify groves within that Small Group
Source of data	TIST Participants
Value applied	See "Grove Summary" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	Farmers choose names that are meaningful to them. These names are recorded and used in our database to identify groves.
Purpose of data	Determination of Baseline Scenario
Comments	None

Data / Parameter	Cluster
Data unit	Cluster Name
Description	Clusters are used within TIST to identify subsections of the larger TIST program.
Source of data	TIST Participants
Value applied	See "Grove Summary" worksheet, Appendix 04, for each result.
Justification of choice of data or description of measurement methods and procedures applied	Clusters are useful for grouping project areas together. This is of value both to monitor community trainings and the track potential project areas for inclusion.
Purpose of data	Determination of Baseline Scenario
Comments	None

3.1.2 Data and Parameters Monitored

Data / Parameter	Number of trees
Data unit	Trees
Description	Number of trees in a project area by strata

Source of data	Physical counts
Description of measurement methods and procedures to be applied	Physical count of the trees in each stratum by Quantifiers with each visit
Frequency of monitoring/recording	Ongoing measurement taken by Quantifiers as they visit project areas. Each project area could be visited as much as once per year.
Value monitored	Tree count by strata
Monitoring equipment	Android phone with proprietary monitoring application
QA/QC procedures to be applied	Part of overall QA/QC procedures discussed in Section 3.1.3.
Purpose of the data	Calculation of Project Emissions
Calculation method	Not applicable
Comments	None

Data / Parameter	DBH
Data unit	Centimeters
Description	Diameter of tree at breast height (1.30 m)
Source of data	Physical measurements
Description of measurement methods and procedures to be applied	TIST measures DBH of up to 20 representative trees of each age/species stratum in different project area.
Frequency of monitoring/recording	Ongoing measurement taken by Quantifiers as they visit project areas.
Value monitored	Representative circumference of trees in a stratum.
Monitoring equipment	Measuring tape and smartphone.
QA/QC procedures to be applied	Part of overall QA/QC procedures discussed in Section 3.1.3.
Purpose of the data	Calculation of Project Emissions
Calculation method	Not Applicable
Comments	None

Data / Parameter	Total CO ₂
Data unit	Metric Tonnes
Description	Total CO ₂ e sequestered by the trees
Source of data	Calculation
Description of measurement methods and procedures to be applied	Allometric equations are assigned to each stratum. DBH values are applied to the allometric. Average biomass of

applied	a tree in each stratum is calculated and multiplied by number of trees in each stratum. Biomass is converted to CO ₂ e and the CO ₂ e of the stratum are totaled.
Frequency of monitoring/recording	Calculation takes place with each monitoring report
Value monitored	Above and below ground biomass
Monitoring equipment	Computer, Android phone, and database
QA/QC procedures to be applied	Part of overall QA/QC procedures discussed in Section 3.1.3.
Purpose of the data	Calculation of Project Emissions
Calculation method	Not Applicable
Comments	None

3.1.3 Monitoring Plan

The Small Groups manage themselves based on a covenant among the members of each Small Group. They manage and oversee their own trees. They contract with Clean Air Action Corporation (CAAC) to sell their carbon, receive payments, and receive training. The GHG component of TIST is managed by CAAC, who developed the database, web site and procedures for monitoring the GHG. CAAC is responsible for this project description and for selling any GHGs that become available.

The operational processes for monitoring the actual GHG removal by the sinks are for TIST Quantifiers to visit each grove, at minimum once every five years, to count trees and collect circumference, GPS and other data. Quantifiers transmit the monitoring data via the Internet to the TIST website, where it is managed by CAAC. CAAC oversees the data and conducts QA/QC reviews. Feedback is provided to the TIST Quantifiers and office staff. CAAC is responsible for tabulating carbon stocks.

The Uganda Staff has oversight of the Quantifiers. They also conduct internal audits of Quantifier performance.

The TIST Data System stores all of the current and archived data. CAAC managers use customized reports to analyze the data and look for trends, missing data or obvious errors. TIST managers visit selected project areas and observe quantifications and audits.

Allometric equations will come from literature research. Leakage monitoring will come from surveys of the TIST members in charge of an individual project area.

TIST Data System

Each project area is owned and managed by a different group of people that TIST calls a Small Group. The areas are discrete parcels of land spread out over many districts and villages. The Small Groups select the species of trees, the number of trees to plant and the planting schedule. They also maintain the trees. While TIST works with the groups to develop best practices that can be shared and adopted by everyone in the organization, the fact remains that each project area is different. The difference is such that the monitoring system required is different than typical forest monitoring protocols.

TIST has met the challenge of obtaining accurate information from a multitude of small discrete project areas in remote areas where roads are poor and infrastructure is minimal, by combining high-tech equipment and low-tech transportation within its administrative structure. The TIST Data System is an

integrated monitoring and evaluation system currently deployed in Uganda and three other countries. On the front end, is a smartphone-based platform supported by GPS technology that is utilized by field personnel (Quantifiers, auditors, trainers and host country staff) to collect most project information. This includes data relating to registration, accounting, tree planting, baseline data, Conservation Farming, stoves, GPS plots and photographs. The data is transferred to TIST's main database server via the Internet and a synchronization process where it is incorporated with historical project data. The server provides information about each tree grove on a publicly available website, www.tist.org. In addition, the other data is available to TIST staff through a password-protected portal.

The smartphones have been programmed with a series of custom databases that can temporarily store GPS data, photographs, and project data. The interface is designed to be a simple to use, checklist format, that ensures collection of all of the necessary data. It is simple enough for those unskilled in computers and high-tech equipment to be able to operate after a short period of training. The interface can also be programmed for data collection not specific to the project. The smartphones are "off the shelf," keeping their costs relatively low.

The synchronization process takes place using an Internet connection. Since the smartphones access the Internet using the local cellular network, data can be synchronized from remote project areas and provide near real-time data to the TIST database and web page.

The TIST Data Server consists of a public side, accessible by anyone over the Internet and a private side only accessible through a password-protected portal. On the public side, a dynamic database is used to constantly update the displayed data. Changes can be seen daily as new synchronizations come in. By mapping the project data with photos and GPS data, the results of each Small Group can be seen on a single page. The GPS data has been programmed with Google Maps to locate project activities anywhere in the world on satellite imagery.

On the private side, confidential accounting data, archive data and data not currently displayed is available. This is the source data for the custom reports and tables necessary for project managers.

The TIST database is off-site and has an off-site backup. The information collected and used for this monitoring program will be archived for at least two years following the last crediting period.

Data to be monitored.

The data to be monitored for monitoring actual net GHG removals by sinks are the number of trees in each project area and representative circumference. Because of the potential difference among project areas, the tree count of each project area is monitored. TIST has a staff of trained Quantifiers that visit each and every project area periodically. When quantifying a project area, they:

- Identify or confirm identification of the project area by its unique name combination of Small Group name and grove name (grove is the vernacular used by the project for a project area).
- Determine the latitude and longitude of the approximate center point of the project area with a GPS. It is automatically logged into the smartphone database for temporary storage.
- Map the boundaries of the project area by walking the perimeter using a GPS. The data is stored in the smartphone database for temporary storage.
- Count each tree in the project area by age and species strata. This data is entered by the operator directly into the handheld computer database for temporary storage.
- Measure the circumference of up to 20 trees in the age and species strata of a project area. Data will not be collected at all locations. It is entered by the operator into the handheld computer database for temporary storage.

- The data on the smartphone database is uploaded to the TIST server through the Internet for additional processing and permanent storage.

Managing data quality.

TIST will use the following QA/QC procedures:

- **Quantifier Training:** Quantifiers receive explicit training in regard to TIST's Standard Operating Procedures, so that quantifications are performed in a standard and regular fashion. The Quantifier field manual/handbook is available online at www.tist.org under "Documents to Download" and is updated to reflect changes in internal procedures.
- Quantifiers meet periodically to discuss questions or problems that they may have and receive training and software updates when necessary. Quantifiers are not dedicated to a grove for the life of that grove and may be rotated to other groves.
- **Staff Audits:** TIST staff members are trained to quantify groves and have smartphones that are programmed to conduct audits. A requirement of their job is to periodically audit Quantifiers, including an independent sampling of tree counts and circumference measurement.
- **Multiple Quantifications:** TIST's internal goal is to quantify each project area multiple times. Inaccurate data and errors are self-correcting with the subsequent visits. If trees have died or have been removed, a new count will reflect the current population. The growth of the trees, as indicated by increased DBH, is monitored with these subsequent visits. If a species is mislabeled, it will arise as a conflict when different Quantifiers attempt to perform tree counts for that grove that do not match the previous one. Comparisons are made over time, to determine whether a particular quantification or tree count appears unrealistic.
- **Multiple Tracks:** In order to ensure that the location and perimeter of each discrete project area is accurate, each GPS track of the parcel is measured at least twice, or until two tracks that reliably define the project area are obtained. Quantifiers will be required to re-trace the tract with each quantification, to verify that they are at the correct project area and that they are counting the correct trees.
- **Double Counting:** To ensure that the same project area is not counted more than once, an overlap script is used that compares the outline of all project areas. If an overlap is detected, the project areas are visually compared. If an overlap is determined, the overlapping project area is removed from the project.
- **Data Quality:** TIST Quantifiers count every tree in each discrete project area. Counting each tree is 100% sampling and provides greater than 1% precision, at the 95% confidence level. Up to 20 circumference readings for each stratum in a project area will be taken and archived to develop a localized database of growth data by strata. This data will provide the circumference data for each stratum. This sampling will exceed the 10% precision at the 95% confidence level required by the methodology. The confidence and precision levels will be assessed in future monitoring.
- **TIST Data System:** The data system is an integral part of TIST's quality assurance and quality control plan. The smartphones are programmed in a manner that requires the data to be collected in a step-by-step manner, increasing the likelihood that all the data will be collected. Data field characteristics are defined to force the use of numbers, text or special formats. Drop down menus are used to restrict answers to certain subsets (e.g. a TIST Small Group name comes from a drop-down menu). Some data fields are restricted to a range of data (e.g. negative numbers are not allowed). The data is uploaded within a few days to the main database, providing timely reporting and secure storage of the data.
- **Desk Audit:** TIST has developed analytical tools for reviewing data as it comes in from the field to look at track data, tree counts, and completeness of data.

- **Transparency:** By providing the quantification data online and available to anyone with an Internet connection, TIST is open to audit by anyone at any time. By providing the location, boundaries, tree count by species and circumference, any interested party can field check TIST data. This transparency and the actual visits that have already taken place provide a further motive to make sure the field data is correct.
- **Data Storage:** The data is stored in an electronic format on the TIST server. Currently, the server hardware is operated by Amazon Web Services, a company that specializes in web and data hosting. However, CAAC could, in the future, change hosts or choose to host the server at its offices.

3.1.4 Dissemination of Monitoring Plan and Results (CL4.2)

This information is included in the process described in Section 3.1.3.

The data monitoring process is communicated to farmer prior to the entry into the program. As part of this entry, the agree to allow TIST representatives to come and collect data on their farm. This information is collected and made publicly available on the TIST website. Directions to this website are included on newsletters distributed at Cluster meetings. Prior to validation and verification, TIST announced a summary of results of the monitoring plan in a monthly newsletter. This summary was disseminated in 6 languages: English, Runyankore, Ateso, Luganda, Luo, and Kiswahili.⁶⁰

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

The project area baseline carbon pools are above and below ground biomass. Dead wood, litter and soil organic carbon are considered optional by the methodology and are not used in the PD.

The baseline emission are estimated using the following tools:

- “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” (AR-TOOL 12, v03.1)
- “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” (AR-TOOL 14, v4.2);
- “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities” (AR-TOOL 16, v1.1)

AR- TOOL 12: The methodology allows dead wood and litter to be optional pools. The project has opted not to select these pools for accounting of carbon stock changes.

AR- TOOL 14: The baseline carbon stock in trees can be accounted as zero if all of the following conditions are met:

- The pre-project trees are neither harvested, nor cleared, nor removed throughout the crediting period of the project activity.* The project considers these baseline trees and does not harvest, clear, or remove them.
- The pre-project trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the project activity, at any time during the crediting period of the project activity.* This statement is true for the baseline trees. Project planting takes place away from baseline trees.

⁶⁰ The Tree, Uganda newsletter, November 2020

- (c) *The pre-project trees are not inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the project activity.* TIST only counts and measures project trees. Baseline trees are not included in ex-post carbon calculations. An inventory of pre project trees is collected during the baseline visit and their continued existence can be confirmed over the life of the project.

AR-TOOL 16: The methodology allows soil organic carbon to be an optional pool. The project has opted not to select this pools for accounting of carbon stock changes.

TIST samples 100% of baseline trees. These trees are measured, and those measurements are used to project the growth of this carbon stock. Quantifiers regularly visit TIST farms to monitor potential tree-felling. Because project trees are stratified separately and sampled at 100%, baseline tree growth does not impact project sequestration. There are 28,362 baseline trees.

The equation for measuring baseline net GHG removals by Sink (AR-ACM0003 Section 5.4) is:

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t} + \Delta C_{SHRUB_BSL,t} + \Delta C_{DW_BSL,t} + \Delta C_{LI_BSL,t}$$

$\Delta C_{BSL,t}$ = Baseline net GHG removals by sinks in year t; t CO₂-e

$\Delta C_{TREE_BSL,t}$ = Change in carbon stock in baseline tree biomass within the project boundary in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$\Delta C_{SHRUB_BSL,t}$ = Change in carbon stock in baseline shrub biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities"; t CO₂-e

$\Delta C_{DW_BSL,t}$ = Change in carbon stock in baseline dead-wood biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO₂-e

$\Delta C_{LI_BSL,t}$ = Change in carbon stock in baseline litter biomass within the project boundary, in year t, as estimated in the tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities"; t CO₂-e

As the program is solely focused on the growth and monitoring of trees, TIST chooses to account for aboveground and belowground biomass, but chooses not to account for the potential increased sequestration of dead wood, litter, or soil organic carbon. Thus, the baseline for these values shall be assumed to be zero, and the baseline calculation shall be:

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t} + 0 + 0 + 0$$

$$\Delta C_{BSL,t} = \Delta C_{TREE_BSL,t}$$

To calculate the $\Delta C_{TREE_BSL,t}$, the project applied the "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" tool (AR-TOOL 14).

Baseline trees are stratified separately in Appendix 04, worksheet "Baseline Trees." Baseline trees were measured once at the time of baseline. The average DBH was determined (cell I3471) and the average stem density was determined (cell D3472). The DBH and stem density was used in worksheet "3.1 Baseline Trees" and annual projections were made to grow the trees over the project lifetime. The projected DBH values (column B) were used in an allometric equation ($Y = \exp\{-1.996 + 2.32 \cdot \ln(D)\}$) to obtain annual aboveground and belowground biomass (column D).⁶¹

⁶¹ Exhibit 41 Brown Allometric: TIST UG PD-VCS-Ex 41 Brown Allometric.pdf. Brown, S. 1997. "Estimating biomass and biomass change of tropical forests: a primer." FAO Forestry Paper 134, Rome, Italy. Section 3,

The average stem density (column C) was applied to the biomass (column D) and the tonnes of CO₂ per hectare were determined (column E). The baseline trees are projected to sequester 45 tonnes per hectare at the end of the 60 year project life.

3.2.2 Project Emissions

Project emissions are considered zero. As addressed in the PD, this is due to the manner in which the Project is operated, such as: no vehicles, manual labor conducted by the small-hold farmers on their own land, restrictions on chemical fertilizers, no clearing of baseline trees and minimal disturbance of the ground for planting.

Project removals are calculated using the process described in the PD and repeated below. This work can be found in Appendix 08, in the Ex-Post Strata sheet.

Step 1. Because of the difference in species and age of the trees and location, ownership and management of the project areas, each project area shall be monitored. They are documented in "Grove Summary" and "Strata" worksheets, Appendix 08. The boundary of the project area has been obtained with a GPS (Appendix 03), the area calculated and displayed in the "Grove Summary" worksheet.

Step 2. The strata for the ex-post estimation of the actual net greenhouse gas removals will be by species and year similar to the ex-ante estimate as described in in PD Section 3.2.2. Stratification is done within each individual project areas. The area of a stratum in a project area ("area of a stratum (ha)") is determined by multiplying the area of project area (see Step 1) by the percentage of trees of that stratum in the respective project area.

Step 3. Where a tree species exceeds 10% of the total tree inventory, it will be assigned to a Major Strata. All other tree species will be assigned to an "Other" strata.

Step 4. Allometric equations will be used to convert DBH values to biomass. An allometric equation for each Major Strata will be identified. If a species-specific equation for a Major Strata is unavailable, it will use the "Other" equation as a default. Based on research conducted for four previous TIST VCS projects in Uganda, the following are examples of the Major Strata and the allometric equations that may be used. The list will be updated as new, or more appropriate ones, become available.

Pinus⁶²: $Y = 0.887 + [(10486 \times (DBH)^{2.84}) / ((DBH)^{2.84} + 376,907)]$
 Eucalyptus⁶³: $\log Y = -2.43 + 2.58 \log C$
 Grevillea: no species specific equations, will use "Other" equation
 Cupressus: no species specific equations, will use "Other" equation
 Other (default)⁶⁴: $Y = (0.2035 \times DBH^{2.3196}) \times 1.2$

"Methods for Estimating Biomass Density from Existing Data." Eq 3.2.1. at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁶² IPCC 2006 AFOLU, Annex 4A.2, Table 4.A.1. Temperate/Tropical Pines. Note: While the most current version of the IPCC Good Practice Guidance for LULUCF is "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories", the preface states: "The 2019 Refinement does not revise the 2006 IPCC Guidelines, but update, supplement and/or elaborate the 2006 IPCC Guidelines where gaps or out-of-date science have been identified. It will not replace the 2006 IPCC Guidelines. It should be used in conjunction with the 2006 IPCC Guidelines." Annex A.2 Table 4.A.1 from IPCC 2006 is used because it contains allometric equations that have not been updated.

⁶³ DH Ashton, "The Development of Even-aged Stands in Eucalyptus regnans F. Muell. in Central Victoria," Australian Journal of Botany, 24 (1976): 397-414, cited by Tim Pearson, Sandra Brown and David Shoch, in "Assessment of Methods and Background for Carbon Sequestration in the TIST Project in Tanzania," Report to Clean Air Action Corporation, (December 2004).

Where:

Y = aboveground dry matter, kg (tree)⁻¹
DBH = diameter at breast height, cm
C = circumference at breast height, cm
ln = natural logarithm
exp = e raised to the power of
1.2 = expansion factor to go from bole biomass to tree biomass

Step 5. The DBH of up to 20 trees per stratum, per project area, will be measured. Height will not be measured or used in the allometric equations. Each DBH value for each tree measured will be applied to the appropriate allometric equation and the biomass of each per tree in the stratum will be obtained and averaged to determine the "average above ground biomass per tree (kg)" of a stratum.

Step 6. For each stratum in each project area, the average above ground biomass per tree will be multiplied times the number of trees to yield the "above ground biomass in stratum (kg)." The results will be divided by 1,000 to obtain "above ground biomass in stratum (t)."

Step 7. The methodology requires the use of tons of biomass per hectare in a subsequent step. It is determined by dividing the "above ground biomass in stratum (t)" from Step 6 by the "area of the stratum" from Step 2.

$$\text{above ground biomass (t/ha)} = \frac{\text{above ground biomass in stratum (t)}}{\text{area of the stratum (ha)}}$$

Step 8. The above ground biomass of each stratum will be multiplied by 0.47 to convert biomass to carbon. The result is "above ground carbon" (t/ha).

Step 9. The carbon stocks of the below ground biomass of each stratum (t/ha) are calculated by multiplying the above ground biomass of each stratum (t/ha) by the appropriate roots to shoot ratio and by 0.47, the carbon fraction of the biomass. A root to shoot factor of 0.27 will be used.⁶⁵ The result is "below ground carbon" (t/ha).

Step 10. The total carbon stocks (CO₂e) are determined by adding the above and below ground carbon (C) of each stratum in each project areas, multiplying each sum by the respective area of that stratum, converting the result to CO₂e and summing the products. The following are the general equations from the AR-TOOL 14:

$$\Delta C_{\text{TREE}} = (44/12) \times CF_{\text{TREE}} \times \Delta B_{\text{TREE}} \quad \text{Equation (3)}$$

$$\Delta B_{\text{TREE}} = A \times \Delta b_{\text{TREE}} \quad \text{Equation (4)}$$

$$\Delta b_{\text{TREE}} = \sum_{i=1}^M W_i \times \Delta b_{\text{TREE},i} \quad \text{Equation (5)}$$

Where:

ΔC_{TREE} = Change in carbon stock in trees between two successive measurements; t CO₂e

⁶⁴ Tim Pearson, Sandra Brown and David Shoch, in "Assessment of Methods and Background for Carbon Sequestration in the TIST Project in Tanzania," Report to Clean Air Action Corporation, (December 2004).

⁶⁵ GPG-LULUCF, Table 3.A.1.8

CF_{TREE} =	Carbon fraction of tree biomass; t C (t d.m.) ⁻¹ . A default value of 0.47 is used unless transparent and verifiable information can be provided to justify a different value.
ΔB_{TREE} =	Change in tree biomass within the biomass estimation strata; t d.m.
A=	Sum of areas of the biomass estimation strata; ha
Δb_{TREE} =	Mean change in tree biomass per hectare within the biomass estimation strata; t d.m. ha ⁻¹
W_i =	Ratio of the area of stratum i to the sum of areas of biomass estimation strata (i.e./); dimensionless
$\Delta b_{TREE,i}$ =	Mean change in carbon stock per hectare in tree biomass in stratum i; t d.m. ha ⁻¹

This process is demonstrated in the Ex-Post Strata and Statistics sheets in Appendix 08. A summary of biomass estimation strata and corresponding biomass (with supporting evidence) is found in the Statistics worksheet. This information is used in the Ex-Post Strata sheet to determine the biomass of each strata. TIST then applied a root-to-shoot ratio of .27 and a carbon fraction of .47 to solve for the CO₂ in each Strata. Complete work is found in columns AC-AL of the Ex-Post Strata worksheet.

The methodology allows for an uncertainty discount of 0%, if the uncertainty is less than 10%. TIST Quantifiers count every tree in each discrete project area. Counting each tree is 100% sampling and provides greater than 1% precision, at the 95% confidence level. Up to 20 circumference readings for each stratum in a project area will be taken and archived to develop a localized database of growth data by strata. This data will provide the circumference data for each stratum. This sampling will exceed the 10% precision at the 90% confidence level required by the methodology.

3.2.3 Leakage

Leakage is considered to be zero. As addressed in the PD, this is due to the manner in which the Project is operated. 100% of farmers confirmed that no deforestation occurred due to project activities. Where agricultural activities were moved from one location to another, there is no evidence that this would increase emissions. Farmers generally practice agroforestry, planting trees amongst existing crops.

Fossil fuel emission: TIST owns no fossil fuel vehicles or equipment. Quantifiers and staff use public transport, walking and bicycles to go to various project areas. Use of palm computers and the Internet allows Quantifiers to upload their data at local Internet cafés or by using mobile phone technology, reducing travel and use of public transportation back to TIST offices.

Displacement of people: TIST member's plant trees, on their own lands. The Greenhouse Gas Agreement among the Small Group members and the Project Participant does not give the Project Participant any right to the Small Group's land or require that they leave. TIST does not displace any people.

Displacement of farming activities: TIST small hold farmers only plant trees to the extent that they can afford to, given their reliance on the remainder of their land for subsistence agriculture. The value of their crops far exceeds the GhG revenues that are available. In addition, where Small Groups have adopted conservation farming, the applicable crops have yielded over twice that of traditional farming.

Displacement of primary fuel supply: TIST tree growing activities do not cause leakage in the form of harvesting wood outside the project area. First, a large number of the residents in the subject districts already use wood as their primary source of fuel, an activity that has resulted in regional deforestation. Second, TIST best practices call for the planting and management of sustainable woodlots that allows for the continuing growth of carbon stocks and the use of deadfall, or tree wood, available through managed thinning. TIST will not cause leakage from this activity; it helps mitigate it.

3.2.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO ₂ e)	Gross Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2003	0	1,320	0	1,320
2004	0	32,748	0	32,748
2005	0	32,748	0	32,748
2006	0	32,748	0	32,748
2007	0	32,748	0	32,748
2008	0	32,748	0	32,748
2009	0	32,748	0	32,748
2010	0	32,748	0	32,748
2011	0	32,748	0	32,748
2012	0	32,748	0	32,748
2013	0	32,748	0	32,748
2014	0	32,748	0	32,748
2015	0	32,748	0	32,748
2016	0	32,748	0	32,748
2017	0	32,748	0	32,748
2018	0	32,748	0	32,748
2019	0	32,748	0	32,748
2020	0	32,748	0	32,748
2021	0	7,004	0	7,004
Total	0	565,044	0	565,044

AFOLU non-permanence risk report rating is 1.25. The AFOLU Non-Permanence Risk Tool requires a minimum risk rating of 10, so the risk buffer for this project is 10%. The calculation of total VCUs is therefore:

Net Reductions x (100%-10%) = VCUs or:

Net	Buffer	Remaining
565,044	56,504	508,539

Comparison of Ex Ante and Ex Post Removals

<u>Period</u>	<u>Ex-ante emissions reductions /removals</u>	<u>Achieved emissions reductions /removals</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
First verification Period: 16 Dec 2003 – 17 Mar 2021	578,488 App 04, Table 3.2.2.b (2004-2022)	565,044 App 08, PA Summary	98%	The ex ante and ex post calculations are different and use different factors. The ex ante calculations use annual increment factors as shown in Section 3.2.2, Ex-Ante Estimation of the PD and was chosen because they provide annual increments factors to project the removals for 60 years. The Ex post estimations utilize allometric equations as shown in Section 3.2.2, Ex-Post Calculation of the PD and was chosen because they use project specific data for each monitoring period.

3.3 Optional Criterion: Climate Change Adaptation Benefits

3.3.1 Activities and/or processes implemented for Adaptation (GL1.3)

Over the course of the project, several activities have been implemented to assist farmers in adapting to climate change. These include:

Drawdown of CO₂: Ultimately, climate change must be addressed through the removal of CO₂ from the atmosphere. Thus far, TIST farmers in Uganda, Kenya and India have removed more than 7M tonnes of CO₂, including 565,044 tonnes from this project. 5,139,342 tonnes of CO₂ are anticipated to be removed by the project.

Conservation Farming: TIST trains farmers on climate resilient agricultural techniques. Education of FAO Conservation Farming techniques allows farmers to gather minimal rainfall in specially dug and spaced holes. Even in times of drought or limited rainfall, this technique allows crops to grow. 5,370⁶⁶ (2,534 women) in person training sessions on CF and other improved agricultural practices occurred during the monitoring period, and numerous articles were published in The Tree (approx. monthly distribution of 1,000).⁶⁷

Trees: Trees retain moisture and create microclimates on TIST participants farms. Trees provide shade to cool farms and introduce new organic matter to restore soil health. This makes farms more productive in adverse conditions. Trees prevent erosion and can serve as windbreaks when planted near structures. TIST farmers planted 1,672,088 trees in this project.

Community Organization: TIST farmers organize themselves in local and regional groups that share knowledge in monthly meetings. These meetings provide an opportunity for farmers to share experiences

⁶⁶ Exhibit 46 Cluster Meetings: "PD Total UG011" worksheet, cell J8.

⁶⁷ Examples: April 2020, May 2020, October 2020

and find locally appropriate solutions to local issues. This organization makes TIST farmers better able to navigate the challenges posed by climate change. TIST farmers organized into 124 Clusters and 1,310 Small Groups.

- Number of indigenous trees: 25,451⁶⁸
- Hectares of indigenous trees: 98⁶⁹
- Number of live trees planted by TIST Small Groups: 1,672,088⁷⁰
- Hectares of riparian tree planting: 23⁷¹
- Hectares of trees planted on steep hillsides: 1,430⁷²

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CM2.1)

Community Group	TIST participants
Impact(s)	Farmers participating in the project
Type of Benefit/Cost/Risk	Direct benefit
Change in Well-being	Farmers will gain access to trainings and resources to develop locally appropriate best practices. This is based on the ongoing Cluster meetings and training session demonstrated in Exhibit 46 where 27,094 person-training session ⁷³ have been documented. Training includes climate change, health/ HIV/AIDS, biodiversity, adopting natural resource management practices and TIST (membership application, values, etc). The impact is they will be given additional tools that can be beneficial to their livelihood, such as Conservation farming and improved food security by planting fruit, nut, fodder and other beneficial trees. They participate in the evaluation of the impacts: 1) they are the ones that decide what to plant and 2) they are the recipients of the improved food security and the revenues should they sell the tree products. The rationale for looking at the number of members is important because it allows the positive benefit of TIST to spread further and provide more benefits to more people and increases the area and number of trees providing positive benefits to the environment and climate. The rationale for looking at the number of Small Groups is important because they provide mutual support and accountability at a local level and receive payments together.

⁶⁸ Appendix 08, Ex-post Strata

⁶⁹ Appendix 08, Ex-post Strata

⁷⁰ Appendix 08, Ex-Post Strata

⁷¹ Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Flood Plain, River Bank and River Bottom.

⁷² Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Gentle Hill Side and Steep Hill Side.

⁷³ Exhibit 46 Cluster Meetings: TIST UG PD-VCS-Ex 46 Cluster Meetings 210609.xlsx, "PD Total UG011" worksheet, cell J27. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

	As of the date of the PD (end of the first monitoring period), there were 8,346 members (2,935 women) and 1,310 Small Groups in the PD. There were 19,433 members (12,174 women) and 4,433 Small Groups in TIST Uganda. (Based on a computer report of the administrative record that tabulates the members in the Small Groups that have project areas in the PD. All project areas, regardless of status are included). ⁷⁴
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Community Group	TIST participants
Impact(s)	Economic Benefits for Members
Type of Benefit/Cost/Risk	Direct benefit
Change in Well-being	Joining TIST leads to economic benefits for the members and their Small Groups. First there are the actions they take based on the training they receive. The benefits are from saleable tree products such as fruits and nut, reduced fuel costs from their own sustainable wood supply and higher yields for conservation farming. The second there are direct cash payments made to the farmers based on the number of trees they plant and a 70% profit share of the carbon revenues. The rationale for listing these impacts is that these provide an incentive for joining TIST and take actions for themselves, the environment and the climate. The benefits from the training were determined through surveys of the farmers.⁷⁵ The surveys were compiled, extrapolated to 2020 and determined to be a cumulative of \$5,352 per farmer.⁷⁶ The cash payments are based on the result of signing the GHG contract with CAAC. After a several month long application process where members are indoctrinated in TIST and the culture of TIST, and where they have the opportunity to learn about the GHG contract and ask questions, they can voluntarily sign the GHG contract. The impact is they will commit to plant trees to sequester carbon and will be paid based on the number of trees they plant and receive a 70% profit share. The contract states the farmers keep all the tree products and does not infringe on their property rights of property ownership. It only transfers the carbon rights to CAAC. Members participated in the evaluation of impacts by choosing how many trees they plant; reviewing and agreeing to the monitoring results and agreeing to the amounts they are being paid. The metrics shown are for TIST Uganda. This is because Small

⁷⁴ Appendix 08 Monitoring Data, "PA Summary" worksheet, "Status V1" column at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁷⁵ Exhibit 21 GL2 Community Survey Template: TIST UG PD-VCS-Ex 21 GL2 Community Survey Template.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁷⁶ Exhibit 22 GL2 Community Survey Result: "Cum Benefits" worksheet, Cell k14, TIST UG PD-VCS-Ex 22 GL2 Community Survey Result 161130.xlsx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

	Groups and members can be in multiple PDs (there are 8 PDs in Uganda including this one) and there is an overlap of benefits. As of the date of the PD (end of the monitoring period), 10,780 members (4,049 women) have signed the GHG contract. The farmers have received \$1,159,724 in tree payments ⁷⁷ and \$2,791,513 in profit share. ⁷⁸
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Community Group	TIST and Stakeholder Community
Impact(s)	Number of live trees planted by TIST Small Groups
Type of Benefit/Cost/Risk	Direct benefit
Change in Well-being	Trees provide a suite of economic and social benefits to farmers. They provide shade, on-farm firewood, stepping stones for wildlife and a basis for carbon credits and carbon revenues. Some of the trees, such as fruit and nut trees, provide improved food security and possibly a cash crop. Many of these benefit the other stakeholders. The environmental improvements extend beyond the project area boundaries. Trees planted on hillside and riparian areas serve to improve water quality. Trees providing areas of cover serve as stepping stones for transient wildlife moving across the project zone. Improved food security increase the community food supply. Carbon removal benefits the global community. The rationale for including this metric is that this is a tree planting project and it is important the benefits be recognized both by the members and the stakeholders. The members participate by deciding how many and what kind of trees to plant and provide an example for how a TIST-type program can be beneficial to their lives. The stakeholders can participate by planting their own trees or joining TIST. The global stakeholders can participate by buying TIST credits and reward the farmers for their efforts. As of the date of the PD (end of the monitoring period), the number of live trees planted by Small Groups in the project are 1,672,088 trees in active Project areas⁷⁹ and there were 77,554 fruit and nut trees.⁸⁰

Community Group	TIST Workers
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⁷⁷ Based on administrative records on the TIST database, extracted using a custom query. Table payment_group_voucher. The TIST database is password limited.

⁷⁸ Based on administrative records on the TIST database, extracted using a custom query. Tables 2019group_profit_share, 2020group_profit_share, 2021group_profit_share. The TIST database is password limited.

⁷⁹ Appendix 08 Monitoring Data: TIST UG PD-VCS-011i App08 Verif 01 Monitoring Data 230401v4.xlsx, "PA Summary" worksheet, cell AB4499. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁸⁰ Appendix 08 Monitoring Data: TIST UG PD-VCS-011i App08 Verif 01 Monitoring Data 23401v4.xlsx, "Ex-post Strata" worksheet, cell AQ11729. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

Impact(s)	Number of people employed by TIST or under contract to deliver services
Type of Benefit/Cost/Risk	Direct benefit
Change in Well-being	TIST employs workers as Cluster Servants/Quantifiers and to provide management services such as serving on the Leadership Council, bookkeeping and expansion. These jobs provide TIST farmers employment and a chance to advance. All of the workers receive salary, healthcare and ICT training. They receive ICT training and practice on smartphones and can use the TIST on-line database through the website portal. Many have pads or computers. Some have access to TIST accounting and access to the TIST server. The rationale for this metric is because there is little opportunity, beyond subsistence farming, for employment in the area, and it is important to recognize TIST's contribution beyond the programmatic benefits. The employee's participation is to provide good work and show they apply the TIST values. Excellent workers can advance to Leadership. In fact, that is where the Leadership council came from. As of the date of the PD (end of the monitoring period), TIST employed 75 people (48 women). 70 are Cluster Servants/Quantifiers (46 women) and 5 are leadership Council managers (2 women). All receive healthcare and ITC training.⁸¹

Community Group	TIST participants
Impact(s)	Farmers participating in the project
Type of Benefit/Cost/Risk	Predicted direct benefit
Change in Well-being	Farmers will gain access to trainings and resources to develop locally appropriate best practices. This is based on the ongoing Cluster meetings and training session demonstrated in Exhibit 46 where 27,094 person-training session⁸² have been documented. Training includes climate change, health/ HIV/AIDS, biodiversity, adopting natural resource management practices and TIST (membership application, values, etc). The impact is they will be given additional tools that can be beneficial to their livelihood, such as Conservation farming and improved food security by planting fruit, nut, fodder and other beneficial trees. They participate in the evaluation of the impacts: 1) they are the ones that decide what to plant and 2) they are the recipients of the improved food security and the revenues should they sell the tree products. The rationale for looking at the number of members is important because it allows the positive benefit of TIST to spread further and provide more benefits to more people and increases the area and number of

⁸¹ Based on administrative records.

⁸² Exhibit 46 Cluster Meetings: TIST UG PD-VCS-Ex 46 Cluster Meetings 210609.xlsx, "PD Total UG011" worksheet, cell J27. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

	trees providing positive benefits to the environment and climate. The rationale for looking at the number of Small Groups is important because they provide mutual support and accountability at a local level and receive payments together. As of the date of the PD (end of the first monitoring period), there were 8,346 members (2,935 women) and 1,310 Small Groups in the PD. There were 19,433 members (12,174 women) and 4,433 Small Groups in TIST Uganda. As this is the first verification, there are no changes to report. (Based on a computer report of the administrative record that tabulates the members in the Small Groups that have project areas in the PD. All project areas, regardless of status are included).⁸³
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Community Group	TIST participants
Impact(s)	Economic Benefits for Members
Type of Benefit/Cost/Risk	Predicted direct benefit
Change in Well-being	Joining TIST leads to economic benefits for the members and their Small Groups. First there are the actions they take based on the training they receive. The benefits are from saleable tree products such as fruits and nut, reduced fuel costs from their own sustainable wood supply and higher yields for conservation farming, The second there are direct cash payments made to the farmers based on the number of trees they plant and a 70% profit share of the carbon revenues. The rationale for listing these impacts is that these provide an incentive for joining TIST and take actions for themselves, the environment and the climate. The benefits from the training were determined through surveys of the farmers.⁸⁴ The surveys were compiled, extrapolated through 2020 and determined to be a cumulative of \$5,352 per farmer.⁸⁵ The cash payments are based on the result of signing the GHG contract with CAAC. After a several month long application process where members are indoctrinated in TIST and the culture of TIST, and where they have the opportunity to learn about the GHG contract and ask questions, they can voluntarily sign the GHG contract. The impact is they will commit to plant trees to sequester carbon and will be paid based on the number

⁸³ Appendix 08 Monitoring Data, "PA Summary" worksheet, "Status V1" column at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁸⁴ Exhibit 21 GL2 Community Survey Template: TIST UG PD-VCS-Ex 21 GL2 Community Survey Template.doc at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁸⁵ Exhibit 22 GL2 Community Survey Result: "Cum Benefits" worksheet, Cell k14, TIST UG PD-VCS-Ex 22 GL2 Community Survey Result 161130.xlsx at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

	of trees they plant and receive a 70% profit share. The contract states the farmers keep all the tree products and does not infringe on their property rights of property ownership. It only transfers the carbon rights to CAAC. Members participated in the evaluation of impacts by choosing how many trees they plant; reviewing and agreeing to the monitoring results and agreeing to the amounts they are being paid. The metrics shown are for TIST Uganda. This is because Small Groups and members can be in multiple PDs (there are 8 PDs in Uganda including this one) and there is an overlap of benefits. As of the date of the PD (end of the monitoring period), 10,780 members (4,049 women) have signed the GHG contract. The farmers have received \$1,159,724 in tree payments⁸⁶ and \$2,791,513 in profit share.⁸⁷ As this is the first verification, there are no changes to report.
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Community Group	TIST and Stakeholder Community
Impact(s)	Number of live trees planted by TIST Small Groups
Type of Benefit/Cost/Risk	Predicted direct benefit
Change in Well-being	Trees provide a suite of economic and social benefits to farmers. They provide shade, on-farm firewood, stepping stones for wildlife and a basis for carbon credits and carbon revenues. Some of the trees, such as fruit and nut trees, provide improved food security and possibly a cash crop. Many of these benefit the other stakeholders. The environmental improvements extend beyond the project area boundaries. Trees planted on hillside and riparian areas serve to improve water quality. Trees providing areas of cover serve as stepping stones for transient wildlife moving across the project zone. Improved food security increase the community food supply. Carbon removal benefits the global community. The rationale for including this metric is that this is a tree planting project and it is important the benefits be recognized both by the members and the stakeholders. The members participate by deciding how many and what kind of trees to plant and provide an example for how a TIST-type program can be beneficial to their lives. The stakeholders can participate by planting their own trees or joining TIST. The global stakeholders can participate by buying TIST credits and reward the farmers for their efforts. As of the date of the PD (end of the monitoring period), the

⁸⁶ Based on administrative records on the TIST database, extracted using a custom query. Table payment_group_voucher. The TIST database is password limited.

⁸⁷ Based on administrative records on the TIST database, extracted using a custom query. Tables 2019group_profit_share, 2020group_profit_share, 2021group_profit_share. The TIST database is password limited.

	number of live trees planted by Small Groups in the project are 1,672,088 trees in active Project areas ⁸⁸ and there were 77,554 fruit and nut trees. ⁸⁹ As this is the first verification, there are no changes to report.
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Community Group	TIST Workers
Impact(s)	Number of people employed by TIST or under contract to deliver services
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Change in Well-being	TIST employs workers as Cluster Servants/Quantifiers and to provide management services such as serving on the Leadership Council, bookkeeping and expansion. These jobs provide TIST farmers employment and a chance to advance. All of the workers receive salary, healthcare and ICT training. They receive ICT training and practice on smartphones and can use the TIST on-line database through the website portal. Many have pads or computers. Some have access to TIST accounting and access to the TIST server. The rationale for this metric is because there is little opportunity, beyond subsistence farming, for employment in the area, and it is important to recognize TIST's contribution beyond the programmatic benefits. The employee's participation is to provide good work and show they apply the TIST values. Excellent workers can advance to Leadership. In fact, that is where the Leadership council came from. As of the date of the PD (end of the monitoring period), TIST employed 75 people (48 women). 70 are Cluster Servants/Quantifiers (46 women) and 5 are leadership Council managers (2 women). All receive healthcare and ITC training.⁹⁰ As this is the first verification, there are no changes to report.

4.1.2 Negative Community Impact Mitigation (CM2.2)

There are minimal threats to stakeholders presented by the project, largely due to its voluntary nature on private lands. This is demonstrated by the continued program uptake and lack of negative comments received. In the causal chains, two major threats to stakeholders were identified.

One threat is that women or men experience harassment or discrimination. The program requires equality of access and opportunity regardless of age and gender, oftentimes in contradiction to cultural norms. As such, TIST identifies the potential threat of discrimination or harassment in response to this program attribute. In order to mitigate this threat, TIST conducts regular seminars where they review sexual

⁸⁸ Appendix 08 Monitoring Data: TIST UG PD-VCS-011i App08 Verif 01 Monitoring Data 230401v4.xlsx, "PA Summary" worksheet, cell AB4499. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁸⁹ Appendix 08 Monitoring Data: TIST UG PD-VCS-011i App08 Verif 01 Monitoring Data 230401v4.xlsx, "Ex-post Strata" worksheet, cell AQ11729. At <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

⁹⁰ Based on administrative records.

harassment and discrimination. The program further has defined sexual harassment and discrimination policies which are publicly available and reviewed at meetings. Members who are found to have violated these policies are removed from TIST as either participants or employees. To date, this combination of policy and education has been very effective, and no official complaints have been filed.

Another way TIST has addressed the threat of harassment and discrimination is to mandate gender-equal placement in leadership positions. By ensuring women are leaders in TIST, the program has sought to create a culture of mutual respect and acceptance. At the Cluster and national level, leadership is 64% women.

TIST also identifies a threat to the safety of TIST employees. Quantifiers are often tasked with visiting remote areas and navigating difficult terrain in order to locate and quantify tree growth. This presents a threat that would not exist in the absence of the program. In order to mitigate this threat, the program outlines a list of precautions and requirements for Quantifiers in the Quantifiers' Safety Requirements. This document is publicly accessible and reviewed annually by each Quantifier.

HCV Impact. As discussed in PD section 4.2.4, the planting of trees has a direct benefit on the health of HCVs, which will in turn provide environmental services to community members. The planting and monitoring of riparian and hillside areas in the project nearby to HCVs has a particular impact on the health of HCVs whose hillsides abut project areas or whose waterways traverse project areas. The reduction of pressure for forest products further improves the HCV's viability.

4.1.3 Net Positive Community Well-Being (CM2.3, GL1.4)

Impacts on community. The project will create a positive socio-economic impact. Some of the benefits that will be realized by the Small Group members and their families:

- **New job opportunities:** TIST requires a Host Country staff to operate. There are currently five staff employees and 70 Quantifiers. TIST personnel travel by public transportation and buy food and supplies from local merchants, bolstering the local economy. TIST uses Host Country professionals such as accountants and lawyers. TIST staff is trained to use the handheld computers and GPS and how to collect data. They synchronize their devices in cyber cafés, requiring the use of personal computers.
- **Direct Effects to Small Groups:** TIST benefits thousands of Small Group members by providing a new source of income. Small Group members are paid for each tree they plant and maintain. They receive 70% of the profits from carbon revenues.
- **Small Group Structure:** Empowerment of Small Groups and creation of "best practices" improves farm production, health, and farmer life. Small Groups use "rotating leadership" which supports gender equality and develops the capacities of each member. The visible success of the TIST groups and the availability of wood, shade, lumber, fruit, and improved crop yields provides the entire community with positive examples.
- **Fruits and nuts from tree plantings:** The members select the trees to plant on their land and retain ownership of the trees and their products. To the extent that they plant fruit or nut trees, they will gain the food security and economic benefits the trees provide.
- **Wood products and limited timber from trees:** Besides owning the trees, the farmers have the rights to all dead wood. They may prune branches and collect fallen branches. The growth models used for extrapolating biomass includes up to 70% mortality over the first 30-years. The farmers can use this biomass for their own consumption without affecting the estimated carbon stocks. In addition, the farmers may thin their trees as part of the ongoing management of the project area and sell the harvested stems as timber.
- **Natural medicines, insecticides and other benefits from trees:** Some of the trees, such as the neem and moringa, provide other non-wood related benefits.

- **Capacity building on agricultural improvements, business skills, nursery development, and reforestation:** TIST has a well-developed capacity building program that promotes rotating leadership within the Small Groups, that focuses on gender equality and is made available to all members, regardless of education or social standing. TIST provides training in subjects such as Conservation Farming, nursery development reforestation, climate change, biodiversity, building and using more fuel-efficient stoves and runs the program like a business.
- **Small Groups organize to deal with other social and economic problems such as famine and AIDS:** TIST also supplies training in these subjects. Famine is also addressed with the FAO Conservation Farming program, which can lead to over a doubling of crop yield for practitioners, and through proper tree selection (fruits and nut)
- **Improved beauty of the landscape:** This is a welcome attribute in an overused and degraded landscape.
- **Windbreaks:** Trees provide windbreaks for buildings

Climate change adaptation benefits. Some of these benefits specifically help farmers adapt to the probable and current impacts of climate change. These include:

- **Conservation Farming:** TIST trains farmers on climate resilient agricultural techniques. Education of FAO Conservation Farming techniques allows farmers to gather minimal rainfall in specially dug and spaced holes. Even in times of drought or limited rainfall, this technique allows crops to grow.
- **Trees:** Trees retain moisture and create microclimates on TIST participants farms. Trees provide shade to cool farms and introduce new organic matter to restore soil health. This makes farms more productive in adverse conditions. Trees prevent erosion and can serve as windbreaks when planted near structures. Trees further help to prevent against catastrophic landslides and flooding. As flooding, extreme wind, and landslides become more common, trees help to mitigate their impacts for TIST farmers.
- **Community Organization:** TIST farmers organize themselves in local and regional groups that share knowledge in monthly meetings. These meetings provide an opportunity for farmers to share experiences and find locally appropriate solutions to local issues. This organization makes TIST farmers better able to navigate the challenges posed by climate change.

TIST's goal is to surpass "sustainability," so that people meet their needs today in ways that improve the next generation's ability to meet its needs in the future

4.1.4 Protection of High Conservation Values (CM2.4)

There are two major HCVs in the vicinity of the Project Zone; Queen Elizabeth National Park (QENP) and Bwindi Impenetrable Forest National Park (Bwindi). Excerpted from the PD, the following tables describe the HCV of the parks:

Queen Elizabeth National Park

High Conservation Value	Critical ecosystem services: sustaining biodiversity
Qualifying Attribute	Queen Elizabeth National Park has over 95 mammal species and over 600 bird species including the northern Queen Elizabeth lions at high risk of extinction.
Focal Area	TIST activities will continue to support this area through planting trees that help reduce the pressure to harvest fuel wood in the and around the park, and thereby reducing pressure on the biodiversity.

High Conservation Value	Fundamental for the livelihoods
Qualifying Attribute	QENP is one of the most important parks in Uganda attracting many tourists which supplies jobs to the community and revenues for the government.
Focal Area	TIST activities will continue to support this area through the formation of buffer zones and biodiversity corridors which mitigate the need to remove forest products from this protected area.

High Conservation Value	Traditional cultural identity
Qualifying Attribute	Music, dance and arts are integral components of Ugandan culture. QENP has many forums where traditional Ugandan music and art can be seen such as the Kikorongo Women Community.
Focal Area	TIST activities will continue to support this area by reducing pressure on the park allowing the cultural opportunities to continue to flourish.

Bwindi Impenetrable National Park

High Conservation Value	Critical ecosystem services: water
Qualifying Attribute	Bwindi is an important water catchment and is the headwaters for the Ivi, Munyaga, Ihihizo, Ishasha, Ntengyere rivers. It supplies water for local agricultural areas and enhances local precipitation.
Focal Area	TIST activities will continue to support this area through planting trees that help maintain the water quality through reduced erosion and improved soil water retention.

High Conservation Value	Fundamental for the livelihoods
Qualifying Attribute	Due to the rich biodiversity Bwindi attracts many tourists which supplies jobs to the community.
Focal Area	TIST activities will continue to support this area through the formation of buffer zones and biodiversity corridors which mitigate the need to remove forest products from this protected area.

High Conservation Value	Traditional cultural identity
Qualifying Attribute	The Bwindi is the home of the Batwa pygmies, known as the "Keepers of the Forest", a hunter-gatherer tribe that has lived in the park for thousands of years.
Focal Area	TIST activities will continue to support this area through the formation of buffer zones and biodiversity corridors which will improve the park for the Batwa people

The project takes place on private lands that have been under human habitation and agriculture for generations. The planting of trees for the program will not cause displacement or move activities to the HCV areas. On the contrary, the two greatest threats to the HCV areas are deforestation and loss of biodiversity. The planting of new trees and availability of some of the biomass for use by the participants reduces deforestation pressure. The planting of woodlots on farms, especially where indigenous trees are planted, improves biodiversity and helps connect dispersed HCV areas with canopy.

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

The potential negative effects on the few food and fuel vendors are minimal and are actually positive for all the Other Stakeholders. We do not believe there is any mitigation necessary.

4.2.2 Net Impacts on Other Stakeholders (CM3.3)

Because the project takes place on private lands and the tree planting is by the landowners, and because the planting of trees is akin to the farming that has taken place on the lands for generations, there are few negative potential impacts to offsite stakeholders.

The positive effects on the well-being of the Other Stakeholders are:

- Improved food security. As TIST farmers grow more food through Conservation Farming and from fruit and nut trees, there will be more local food.
- As TIST members undergo training, there will be spill over to friends and neighbours outside the TIST community. This includes Conservation Farming, successful tree planting, construction tree nurseries, building and using more fuel-efficient stoves, indoor cooking pollution, use of trees for stabilizing soil and water courses, using mosquito nets, ways to mitigate climate change and all the other training themes.
- More locally sourced fuelwood. As the TIST trees grow, some of the farmers will have sustainable woodlots. Others will have more fuel wood from pruning, thinning and natural mortality. Some will have an excess that they can sell. The overall reduction in demand by TIST farmers will mean more supply for the Other Stakeholders.

The negative effects on the well-being of the Other Stakeholders are

- If TIST training and program adoption is extremely successful, it could lower food cost, which would have a negative effect on food vendors. However, since this would benefit to the rest of the other stakeholders, no mitigation is needed.
- If TIST farmers are extremely successful, it could lower fuelwood cost, which would have a negative effect on fuelwood vendors. However, since this would benefit to the rest of the other stakeholders, no mitigation is needed.

After comparing the positive and negative effects listed, it seems reasonable to conclude that the demonstration has been made.

4.3 Community Impact Monitoring

4.3.1 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

The following are the results of the Community Impact Monitoring. Program-wide data was extracted from the TIST database as of 17 March, 2021.

Membership

1. Number of Small Group members in PD (female and male): 8,346 members (2,935 women, 5,678 men, remainder undifferentiated).⁹¹
2. Number of Small Groups in PD: 1,310⁹²
3. Number of active community members in TIST Uganda (female and male): 19,433 members (6,924 women, 12,174 men, remainder undifferentiated).⁹³
4. Number of Small Groups in TIST Uganda: 4,433⁹⁴
5. Number of community members in TIST Uganda (includes new members not yet active): 29,454 members.⁹⁵

GHG Payment Program

6. Number of community members with greenhouse gas agreements in TIST Uganda (female and male): 10,780 member (4,049 women, 6,731 men).⁹⁶
7. Number of Small Groups receiving Payments: 1,292⁹⁷
8. Number of members receiving payments (female and male): 8,718 member (3,451 women, 5,267 men).⁹⁸
9. Total payments to community in TIST Uganda: USD 3,951,237 lifetime total and for monitoring period. \$1,159,724 in pre-payments and \$2,791,513 in profits share.⁹⁹

Cluster-Based Training

10. Number of person-training sessions on climate change in TIST Uganda: 1,241 person-sessions (523 women, 718 men).¹⁰⁰
11. Number of person-training sessions on HIV/AIDS in TIST Uganda: 95 person-sessions (35 women, 60 men).¹⁰¹
12. Number of person-training sessions on tree planting and biodiversity in TIST Uganda: 6,657 person-sessions (2,974 women, 3,683 men).¹⁰²

⁹¹ Custom query of the TIST database. Based on the number of Small Groups associated with each project areas and the number of members in the Small Groups. Number exceeds the number of project areas.

⁹² Appendix 08 Monitoring Data: "PA Summary" worksheet, unique entries in column D

⁹³ Website Query, tist.org, March 17, 2021. All of TIST Uganda in other PDs and not in PDs. Active members have planted trees, raised seedlings or engaged in Conservation Farming.

⁹⁴ Website Query, tist.org, March 17, 2021. All of TIST Uganda in other PDs and not in PDs.

⁹⁵ Website Query, tist.org, March 17, 2021. All of TIST Uganda in other PDs and not in PDs. Includes new members not yet active.

⁹⁶ Custom query of the TIST database. Not all TIST members are signatories of the GHG Contract, For example, a husband and wife may chose not to both sign.

⁹⁷ Custom query of the TIST database.

⁹⁸ Custom query of the TIST database. Not all members receive payments. For example, a husband and wife would usually only receive one payment.

⁹⁹ Custom query of the TIST database. Tables 2019group_profit_share, 2020group_profit_share, 2021group_profit_share. Access to the TIST database is password limited.

¹⁰⁰ Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J20.

¹⁰¹ Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J21.

¹⁰² Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J22.

13. Number of person-training sessions on natural resource management (NMR) in TIST Uganda: 7,250 person-sessions (3,309 women, 3,941 men).¹⁰³
14. Number of person-training sessions on TIST in TIST Uganda: 2,389 person-sessions (1,006 women, 1,383 men).¹⁰⁴
15. Number of vocational person-training sessions in TIST Uganda: 27,094 person training sessions.¹⁰⁵

Personnel¹⁰⁶

16. Number of people employed by TIST or under contract to deliver services: 75 workers (48 woman, 27 men). Percentage of women workers: 64%. There are 5 workers on the Leadership Council and 70 Cluster Servant.
17. Percentage of women in leadership positions: 40%
18. Number of people receiving ICT Training: 75
19. Number of people receiving healthcare: 75

Tree Planting and NMR

20. Number of live trees planted by TIST Small Groups in active project areas: 1,672,088 trees.¹⁰⁷
21. Number of active hectares: 2,821 hectares.¹⁰⁸
22. Number of active project areas: 3,143 PAs.¹⁰⁹
23. Number of fruit or nut trees in project: 77,554 trees.¹¹⁰
24. Number of eucalyptus trees in project: 125,378 trees.¹¹¹
25. Hectares of riparian tree planting: 23 hectares.¹¹²
26. Hectares of trees planted on steep hillsides: 1,430 hectares.¹¹³

Gold Level Community Benefits:

27. Monetized benefits to average members. Lifetime: \$5,352. Period: \$5,352.¹¹⁴
28. Monetized benefits to vulnerable members. Lifetime: \$3,653. Period: \$3,653.¹¹⁵
29. Monetized benefits to female members. Lifetime: \$4,387. Period: \$4,387.¹¹⁶

¹⁰³ Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J23.

¹⁰⁴ Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J24.

¹⁰⁵ Exhibit 46 Cluster Meetings Report: "PD Total UG011" worksheet, cell J27.

¹⁰⁶ Administrative records

¹⁰⁷ Appendix 08, "PA Summary" worksheet, cell AB4499.

¹⁰⁸ Appendix 08, "PA Summary" worksheet, cell AG4499.

¹⁰⁹ Appendix 08, "PA Summary" worksheet, count of Loc ID where column AR is filtered by "Active".

¹¹⁰ Appendix 08, "Ex-post Strata" worksheet, cell AQ11729.

¹¹¹ Appendix 08, "Ex-post Strata" worksheet, cell AJ11735.

¹¹² Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Flood Plain, River Bank and River Bottom.

¹¹³ Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Gentle Hill Side and Steep Hill Side.

¹¹⁴ Exhibit 22 Community Survey Results. "Cum Benefits" worksheet, cell K14.

¹¹⁵ Exhibit 22 Community Survey Results. "Cum Benefits" worksheet, cell K28

30. Negative impacts identified by members. No negative impacts have been reported by the members.

In addition, many more program components, such as GPS tracts of all the project areas, were obtained in the climate change monitoring plan.

Community monitoring is ongoing as part of the overall monitoring of TIST. Data is collected by TIST Quantifiers as they visit each Small Group to count trees by species, count and measure Conservation Farming plots and count fuel efficient stoves. Trainers collect training information at meetings, which includes the subjects covered and the numbers of people attending. The metric for training is person-sessions meaning the numbers reported may exceed the number of members. Contracts are collected and recorded by the administrative staff. The number of people employed or under contract with TIST and the amount of GHG payments to Small Groups is obtained from administrative records.

Field data is recorded on custom programmed smartphones and uploaded to the TIST database. Data will be kept at least three years from the end of the reporting period.

4.3.2 Monitoring Plan Dissemination (CM4.3)

This information is included in the process described in Section 3.1.3.

The data monitoring process is communicated to farmer prior to the entry into the program. As part of this entry, the agree to allow TIST representatives to come and collect data on their farm. This information is collected and made publicly available on the TIST website. Directions to this website are included on newsletters distributed at Cluster meetings. Prior to validation and verification, TIST announced a summary of results of the monitoring plan in a monthly newsletter. This summary was disseminated in 6 languages: English, Runyankore, Ateso, Luganda, Luo, and Kiswahili.

4.4 Optional Criterion: Exceptional Community Benefits

4.4.1 Short-term and Long-term Community Benefits (GL2.2)

For the purpose of demonstrating Gold Level for exceptional community benefits, TIST members were surveyed to identifying some of the positive and negative impacts they experienced from participating in TIST. The survey has been conducted twice in Uganda. The first was of 46 random TIST members between June and August 2011. The second was of 120 random TIST members conducted in August and September 2016. The instructions for the survey are available.¹¹⁷ The four main topic areas of the survey were:

1. demographic/basic information (including literacy, income);
2. TIST membership and participation information (including barriers to participation);
3. benefits from TIST activities (economic, environmental, and social, quantitative and perceptual) and negative impacts; and
4. Conservation Farming and food security.

The indicators were measured in order to differentiate between poorer and more vulnerable households using the Sustainable Livelihoods Approach and to identify and assess whether positive and negative impacts of the program are affecting households equally.

¹¹⁶ Exhibit 22 Community Survey Results. "Cum Benefits" worksheet, cell K21

¹¹⁷ TIST UG PD-VCS-Ex 21 GL2 Community Survey Template.doc

Project Explicitly Pro-Poor. The original survey indicates that 39% of the respondents make less than 130,000 UGS (US\$36) per month and a cumulative total of 59% make less than 220,000 UGS (US\$62) per month. In the second survey 55% of the respondents reported making less than 130,000 UGS (US\$36) per month and a cumulative total of 87% make less than 220,000 UGS (US\$62) per month. Since income level for abject poverty varies between US\$1.00 per day and US\$2.00 per day, it is clear that most of the members of TIST are poor.

Table 4.4.1a: Self-reported Monthly Income Among Respondents

Monthly Income (UGS)	Respondents (#, %) n=46	Respondents (#, %) n=120
<65,000 UGS	6 (13%)	16 (13%)
65,000-130,000	12 (26%)	50 (42%)
130,001-220,000	9 (20%)	38 (32%)
220,001-440,000	8 (17%)	8 (07%)
440,001-880,000	5 (11%)	8 (07%)
880,001-1,100,000	2 (4%)	0
more than 1,100,000	4 (9%)	0

Benefits to the Poor. The surveys included questions to determine the benefits that the program provided to the members. In addition to the many trainings provided, there are many cash and in-kind benefits. Since most of the members are poor, these indicators demonstrate how TIST benefits the poor.

Table 4.4.1b: Value of TIST Participation (UGS)

	First Survey (n=46)	Avg Value per TIST member Cum 2003-2011	Second Survey (n=120)	Avg Value per TIST member 2016 only
Carbon stipend	35	799,715	35	146,583
Incentive for work	4	5,478	3	333
Harvest fruit	18	800,209	15	6,046
Harvest nuts	3	5,446	0	0
Harvest fodder	6	195,837	0	0
Harvest poles	2	22,717	3	na
Harvest firewood	12	131,935	8	1,234
Keep more animals	17	1,521,413	7	120,317
Produce seedlings	28	2,271,511	8	363,667
Produce compost manure	36	969,391	13	3,483
Use less firewood	23	140,833	16	683
CF--improved yields	31	1,118,720	48	123,958
Total value		7,983,205		765,621

In addition, TIST provides beneficial sustainable development training. The metric in the following table is the average training sessions per person.¹¹⁸

Negative Impacts. Because TIST is voluntary, few negative impacts were identified. Table 4.3.2c presents the perceived negative impacts.

Table 4.4.1c: Perceived Negative Impacts

	First Survey (n=46)	Second Survey (n=120)
Payment Delayed	6	5

¹¹⁸ Exhibit 46 Cluster Meetings: "PD Total UG011" worksheet.

Want more Incentive	5	0
Want increased trainer incentive	1	0
Reduced garden yield	0	1

The greatest complaint has been the lack of timely payments by 7% of the members. The second is that 3% would like a larger incentive. A single individual wanted an increase of the trainer incentive and a single individual identified a reduced yield from their garden.

Positive Net Benefit of TIST. For the most part the negative benefits are more complaints about the project rather than negative impacts. The project is aware that the payments are less than perfect. With the large number of Small Groups and project areas, it is often challenging to reach everyone on a timely basis. Regarding those that want a larger incentive, the profit share distributions are much larger. However, because profits are dependent on the market price for voluntary VCS credit, until 2019 the market had been thin and the price low. We acknowledge that one individual would like to see the incentives for trainers to increase.

During this monitoring period (project life), the members received a cumulative estimate of UGS 14,873,794 (\$4,352).¹¹⁹

The biggest negative impact identified is the reduced garden yield. The project tries to emphasize the need to balance food security with the planning of new trees and we do not tell the farmers where to plant their trees. Since this issue has only been identified once it does not appear to be programmatic.

When the financial benefits and the training is compared to the sole negative impact, it is demonstrated that TIST has a net positive impact. Since most of the members are poor, it can be further concluded that TIST has a net positive impact on poor subsistence farmers.

Impacts on Marginalized and/or Vulnerable People The first survey identified 7 members that qualified as vulnerable. In the second survey, we identified the 16 members that had monthly income of less than 65,000 UGS as being vulnerable. Table 4.4.1d shows the financial benefits to the vulnerable members.

Table 4.4.1d: Value to Vulnerable Members (UGS)

	First Survey Vulnerable (n=7)	Avg Value to Vulnerable Mbr Cum 2003-2011	Second Survey Vulnerable (n=16)	Avg Value to Vulnerable Mbr 2016 only
Carbon stipend	5	611,571	3	141,875
Incentive for work	1	7,143	0	0
Harvest fruit	4	1,590,000	1	600
Harvest nuts	1	28,571	0	0
Harvest fodder	2	1,214	0	0
Harvest poles	1	6,429	0	0
Harvest firewood	1	0	1	5,688
Keep more animals	4	1,518,571	1	125,000
Produce seedlings	5	922,929	0	0
Produce compost manure	4	518,143	0	0
Use less firewood	4	120,738	1	875
CF--improved yields	6	1,599,714	7	43,750
Total		6,925,023		317,788

¹¹⁹ Exhibit 22 Community Survey Results: "Cum Benefits" worksheet, cells K12 and K14.

Comparing the benefits reported by the vulnerable members with the average received by all the members, it is shown that in the first survey the vulnerable members received 87% of the benefits of the average member. The second survey shows the vulnerable members received 42% of the benefits of the average member. These results demonstrate that positive benefits are available to the vulnerable members.

One member in the second survey identified a negative impact from TIST. This person was not part of the vulnerable population. Therefore it has been demonstrated that TIST provides a net positive impact on the vulnerable members.

During this monitoring period (project lifetime), the vulnerable members received a cumulative estimate of UGS 9,785,116 (\$3,653).¹²⁰

The project has generated both short-term and long-term community benefits. Community benefits are generated before members formally join TIST. During the registration and application stage, farmers are invited to attend Cluster meetings where they can receive training and education on issues that are important to them.

Thus far, 1,672,088 living trees have been quantified. Once farmers have quantified trees, they are eligible to receive a carbon pre-payment starting at six months. 100% of the farmers in this project have signed a GHG contract to make them eligible. Thus far, USD\$1.1 million has been paid in cash prepayments. These prepayments served as a bridge until the project became profitable and the farmers were able to share in 70% of the program's profits. The verification of this PD will unlock further capital to be shared with farmers.

Tree planting has short and long-term economic and environmental benefits. The planting of trees can create fruit, nut, and medicinal harvests for farmers. Trees can further provide deadfall, fuelwood, windbreaks, and improved soil quality. These long-term benefits are already being realized in this project; to date this project includes 77,554 high-value fruit and nut trees on 350 hectares.¹²¹ High Value trees are trees that either produce fruits, nuts, or are indigenous trees to Uganda. An index of tree species can be found in Appendix 08, with associated characteristics.

4.4.2 Marginalized and/or Vulnerable Community Groups (GL2.4)

Community Group	Women
Net positive impacts	The benefits to women are described in Section 4.4.3. TIST assess direct and indirect economic benefits to women, including access to education and leadership opportunities. The program does not assess any negative impacts on women and thus the net impact is positive.
Benefit access	Benefit access to women is facilitated by project design, and the language of the GHG contract (see Exhibits 03 and 04). This ties remuneration to the action of planting trees, rather than land ownership. Project design helps to incorporate women; when Small Group representatives are sent to Cluster meetings, they are required to send a man and a woman. Women and men share equally in leadership positions. 2,935

¹²⁰ Exhibit 22 Community Survey Results: "Cum Benefits" worksheet, cells K26 and K28.

¹²¹ Appendix 08, Ex-Post Strata, cells AQ11731 and AR11731

	women are participating in this project.
Negative impacts	No negative impacts to women were assessed in this project

Community Group 2	Poor Farmers
Net positive impacts	Poor farmers increase access to food, create direct and indirect economic benefits, access leadership positions, and receive education on a range of issues.
Benefit access	As described above, and the GHG contracts, participation and payments are tied to action, rather than land ownership. This facilitates access for the poor. The TIST Program was designed to improve the lives of poor farmers. This is reflected in program design. Farmers walk to centralized locations (no vehicle use), are trained to collect and cultivate seedlings (no input purchases) and learn to create organic compost fertilizers/Conservation Farming plots (no fertilizer purchases, improved crop yields).
Negative impacts	No negative impacts for poor farmers were assessed in this project.

4.4.3 Net Impacts on Women (GL2.5)

In order to facilitate participation by women, the program has adopted a Payment for Environmental Services model that does not tie payments to land ownership. 100% of farmers have signed a contract which articulates this model.

At the Cluster, regional, and national level, the program implements Rotational Leadership. This ensures that 50% of all managerial roles are filled by women. TIST monitors Cluster elections to ensure this practice is implemented. Approximately 64% of TIST workers are women.¹²²

In the first survey the gender balance in the survey was 30% female (n=14) and 70% male. When the economic benefits were analyzed on a gender basis it showed that, at 8,982,004 UGS, women had a higher cumulative average benefit.

In the second survey, 21% (n=25) of the interviewees were female. When the economic benefits were analyzed on a gender basis it showed that women had an average financial benefit of 271,948 UGS.

During this monitoring period, which is also the project lifetime, the women members received an estimated UGS11,439,536 (\$4,337).¹²³

The program does not assess any negative impacts on women, and thus the net impact on women is positive.

4.4.4 Benefit Sharing Mechanisms (GL2.6)

¹²² Section 4.3.1 , Result 16.

¹²³ Exhibit 22 Benefits Survey: "Cum Benefits" worksheet, cells K19 and K21.

TIST shares 70% of the program's benefits with farmers, as described in the GHG contract. At each Cluster meeting, Small Group representatives are given a voucher with the number of trees they have planted (according to the database) and the corresponding payment amount. They must return to their Small Group and procure signatures from each member of the group. Upon receipt of the signed voucher, payment will be made generally through a mobile money service. Once farmers have verified carbon, they receive a second type of voucher that explains the amount of carbon they have verified, and the corresponding profit share. At local seminars, TIST representatives have explained the programs costs, revenues, and pricing per tonnes to Cluster Servants and farmer representatives.

In addition to direct payments, TIST farmers receive 100% of the non-carbon benefits they create from tree planting. In similar projects in TIST Uganda, these benefits have been verified to average approximately \$5,352 per farmer.¹²⁴ These include fruits, nuts, medicine, deadfall, improved agricultural yields, and honey. Many benefits are harder to quantify, such as vocational and technology education, leadership training, health education, and community organization.

This project includes 126 Clusters, and 1,310 Small Groups have received voucher payments to date.

4.4.5 Governance and Implementation Structures (GL2.8)

The project proponent is Clean Air Action Corporation (CAAC). The role of CAAC and other parties involved with TIST are summarized:

- Clean Air Action Corporation (CAAC) is a for profit US corporation that manages the GHG component of TIST. CAAC is TIST's largest contributor, provides technical assistance and uses its host country subsidiaries to manage operations.
- Institute for Environmental Innovation (I4EI), a US based non-profit organization, manages the TIST sustainable development program components. I4EI provides funding from government agencies, foundations, and private donors.
- Thousands of TIST Farmers make up the Small Groups, plant the trees on their lands, manage their own trees and make up the core of TIST.
- Management and governance structures of TIST Uganda are described in Section 2.4.1

TIST participants organize themselves into local and community groups where leadership is identified and cultivated to meet the positions listed above:

Small Groups: A Small Group is a group of 6-12 people who want to improve their lives and environment by planting trees and adopting sustainable agriculture best practices. The formation of Small Groups helps TIST to service the needs of participants while allowing information sharing at the local level. Farmers must join TIST as a Small Group.

Small Groups are particularly powerful because they maximize accountability on a local, daily level. By organizing in Small Groups, each person is responsible to their neighbors. This is a more real and meaningful responsibility.

The nature of Small Groups also facilitates innovation. Small Groups allow for the success of a single "early adopter" to be seen by other group members. This experience of action and direct outcome is a powerful force that cannot be reproduced with publications or Seminars. Similarly, farmers can experiment with a new practice using shared resources or labor, thus sharing the costs of failure.

¹²⁴ Exhibit 22 Benefits Survey: "Cum Benefits" worksheet, cell K14.

Certain best practices allow Small Groups to be successful. These include rotating leadership, practicing Kujengana, weekly meetings, preventing one person from dominating discussion, accepting viewpoints without criticism, and identifying Best Practices specific to the environment of the Small Group. Using these best practices, Small Groups are able to plant trees, support one another, quantify their progress, refine their practices, and share their success with one another.

This project includes 1,310 Small Groups.

Clusters: Clusters are units of Small Groups that are within walking distance of a central meeting point. Clusters are designed to provide services such as training, administration, payment, and newsletter distribution to Small Groups, easing some of the logistical challenges of a being spread out. Organizing in Clusters also helps keep costs low and helps create organizational partnerships. Each Cluster has about 20-70 Small Groups, and thus consists of several hundred farmers. When a Cluster grows too large, it splits in two. Each Cluster aims to plant specific quantities of trees planted and hectares.

Clusters are meant to meet every month for training, sharing of best practices, distribution of newsletters, and any other matters they have. Activity at Cluster meetings is recorded and submitted, along with Cluster accounting forms. A good Cluster is constantly working to improve the quality of the data it provides and the data it receives from its Small Groups. Cluster Best Practices also include making on-time payments, recruiting new members, and embodying TIST values. Every four months, Clusters will hold an election to choose new leadership.

A Cluster is led by a Cluster Leader, a Cluster Co-Leader, and an Accountability Person. A Cluster Leader should be a servant to the whole Cluster and exemplify TIST Values, while promoting a strong, unified Cluster. They are responsible for leading Cluster activities such as meetings and quantification trips, recruitment, and payment. The Co-Leader takes over when the Leader cannot attend, keeps minutes of meetings, and helps to train the Accountability person. The Accountability Person helps with budgeting, payments, and record keeping. Clusters rely on rotation, alternating genders, and democratic elections to determine leadership.

This project includes 124 Clusters.

4.4.6 Smallholders/Community Members Capacity Development (GL2.9)

As discussed, TIST leadership is comprised of participants and smallholders themselves. The roles that are described in Section 4.4.5 are held by community members. These members have day-to-day control of program activities. The project provides training for new members, nation-wide seminars for Cluster Servants, Cluster leaders, and others, as well as support for in country leadership. Capacity development is demonstrated by the project's ability to self-manage at a community, regional, and national level.

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B2.1)

Change in Biodiversity	Number of indigenous trees
Monitored Change	In this project, TIST has quantified 25,451 indigenous trees (see Table 5.1.1 A)
Justification of Change	Tree planting and monitoring are described in Section 3.1.3
Change in Biodiversity	Hectares of indigenous trees

Monitored Change	In this project, TIST has quantified 98 hectares of indigenous trees (see Table 5.1.1 A)
Justification of Change	Tree planting and monitoring are described in Section 3.1.3

Change in Biodiversity	Number of trees planted
Monitored Change	In this project, TIST has quantified 1,672,088 trees (see Appendix 08, Strata sheet)
Justification of Change	Tree planting and monitoring are described in Section 3.1.3

Change in Biodiversity	Endangered/Vulnerable/Threatened Species planted
Monitored Change	In this project, TIST has quantified three species of Endangered/Vulnerable /Threatened trees (see Table 5.1.1 B)
Justification of Change	Tree planting and monitoring are described in Section 3.1.3

Change in Biodiversity	HCV's impacted
Monitored Change	TIST farmers planting trees around two HCVs
Justification of Change	TIST farmers reforesting land around protected areas creates buffer zones and wildlife corridors.

Change in Biodiversity	Riparian Planting
Monitored Change	Increase in riparian tree planting by 23 hectares
Justification of Change	Farmers choose to plant their trees in riparian areas. Oftentimes this is to reduce the possibility for erosion and protect waterways, which has both community and biodiversity benefits. TIST will monitor the location and topography of tree planting during baseline surveys

Change in Biodiversity	Hillside planting
Monitored Change	Farmers planted 1,430 hectares of hillside woodlots
Justification of Change	Farmers choose to plant their trees on steep hillsides. Oftentimes this is to reduce the possibility for erosion, which has both community and biodiversity benefits. TIST will monitor the location and topography of tree planting during baseline surveys

Indigenous Trees (Table 5.1.1 A)

Scientific Name	Indigenous Trees	Hectares
Acacia spp.	1,850	6.22
Annona spp.	93	0.24
Cordia Africana	186	0.92
Cordia monoica	561	2.19
Cordia sinensis	6	0.03

Dalbergia melanoxylon	3	0.01
Dichrostachys cinerea	9	0.72
Erythrina abyssinica	13	0.09
Ficus sycomorus	139	0.52
Lonchocarpus capassa	61	0.26
Maesa lanceolata	117	0.45
Maesopsis eminii	3,112	12.78
Markhamia lutea	5	0.02
Olea europaea	27	0.42
Ozoroa insignis	2	0.01
Podocarpus falcatus	4,641	27.28
Prunus africana	1,423	4.49
Sesbania sesban	5	0.01
Spathodea campanulata	20	0.03
Symphonia globulifera	12,114	34.37
Tamarindus indica	163	3.55
Vangueria spp.	71	0.39
Vernonia amygdalina	101	0.07
Zanthoxylum gillettii	729	3.48
Total	25,451	98.53

Endangered, Threatened, or Vulnerable Tree Species (Table 5.1.1 B)

Scientific Name	Tree Count	Status
Prunus Africana	1,423	Vulnerable
Cedrela Odorata	29	Vulnerable
Jacaranda Mimosifolia	11	Vulnerable

5.1.2 Mitigation Actions (B2.3)

Eucalyptus may have negative impacts if not managed with care. Eucalyptus, popular in Uganda since its introduction in 1912, for its fast growth, is known to set deep roots that may deplete water resources without sustainable management. Eucalyptus is very common in many parts of the country and is promoted by the Ugandan government.

While the debate about the environment benefit continues, TIST has relied on the precautionary principle. TIST farmers agree, as part of their contract, that trees that damage the environment will not be counted as TIST trees for which they will receive prepayments. Eucalyptus has been removed from the pre-payment program. Groups are trained on the benefits of alternative indigenous trees and how to grow these trees. Trainers grow indigenous tree seedlings, including stinkwood, in their nurseries, to increase awareness and access for TIST members. Farmers learn strategies for replacing existing eucalyptus trees planted in areas where they may cause challenges, such as near waterways.

This combination of a lack of incentives for Eucalyptus planting, and training on alternatives, has been effective. Since 2013, there has been a precipitous decline in Eucalyptus trees being planted by TIST farmers.¹²⁵

Year Planted	Eucalyptus Trees Planted
2003	0

¹²⁵ Appendix 08, "Misc Calcs" worksheet, beginning at row 181.

2004	4,265
2005	11,339
2006	10,238
2007	23,150
2008	3,822
2009	31,676
2010	11,100
2011	10,251
2012	119,063
2013	53,784
2014	6,392
2015	21,986
2016	349
2017	13,692
2018	0
2019	17
2020	0
2021	0

5.1.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

None of the tree planting would occur without the project. In the case of the indigenous trees, the biodiversity benefit is clearly positive.

The members of TIST also plant non-indigenous trees. While they would not have been planted without the project, and some lack the clear biodiversity benefit of the native species, they too have a net biodiversity benefit. Going back to the on-going deforestation affecting the entire country and the obvious continued need for fuel wood and timber by the expanding population, a fuel wood alternative is necessary. The non-native trees such as eucalyptus, cypress and grevillea fill this niche, and by doing so, reduce deforestation and indirectly contribute to biodiversity. The "without project" scenario would mean more pressure on the natural forests and more loss of biodiversity. Therefore, even looking at the project from the vantage of the non-native species, the project has a net biodiversity benefit when compared to the "without project" case. See Section 5.3.1 for indigenous and non-indigenous tree figures.

Promotion of Conservation Farming will further reduce pressure on forest land by increasing food productivity by, and consequently decreasing pressure for, land clearing for agriculture. Biodiversity is also enhanced directly through the planting of indigenous trees, both in specific riparian 'biodiversity' groves, and through dispersed inter-planting, homestead planting and woodlots. Increases in tree biodiversity should also enhance diversity of associated species, including pollinators, and other beneficial species, while protection of riparian areas will improve water quality and provide other important ecosystem services. 40 groves are reported as near a body of water.¹²⁶

Adaptation to climate change. Rapid climate change is impacting forests and the biodiversity found within forests. These impacts can include flooding, fires, drought, pestilence, and human encroachment. By creating access to forest products outside of old growth forests, the project is mitigating the pressure for human encroachment into forests, thereby rendering the forests more resilient to climatic threats. TIST project areas based near forests serve as part of an interconnected system helping to prevent landslides, erosion, and other impacts made worse by climate change. During this monitoring period TIST planted 28 hectares of riparian woodlots and 1,600 hectares of hillside woodlots.

¹²⁶ Appendix 04, "Grove Summary" worksheet, Count of column Q where column T is filtered by Flood Plain, River Bank and River Bottom.

TIST woodlots not only serve as buffer zones to forests, but also as connective corridors. Providing access between forests and protected areas is likely to increase the capacity for migratory and threatened animals to move from one location to another in response to climatic impacts. During this monitoring period the program planted trees in regions that about 2 HCVs.

The program further provided education and trainings on tree planting and biodiversity related issues to 2,974 women and 3,683 men during this monitoring period (program lifetime).¹²⁷

Tree planting itself creates microclimates on farms which increase flora viability.¹²⁸ Shade and the retention of water provided by both indigenous and non-indigenous trees assists biodiversity in project areas. Furthermore, tree planting prevents erosion. Conservation Farming practices and the introduction of organic matter through compost manure techniques indirectly benefit the growth of indigenous trees. Current and future trees will provide windbreaks for seedlings. These environmental benefits support both biodiversity and the economic prosperity of subsistence farmers. As drought and high winds become more common, these benefits will be of increasing importance. During the monitoring period the program planted 1,672,088 living trees.

5.1.4 High Conservation Values Protected (B2.4)

The HCVs discussed in PD Section 4.1.3 have not been negatively affected by the project. The project areas are in the vicinity of HCVs and provide vital resources that reduce pressure on these important areas, and through the planting of indigenous trees, expands the range of biodiversity in these forests.

The project areas are on individual farms, with an extensive history of farming and land use, other than natural forest or long-term forestry. As such, any negative effect caused by human activity at the project sites has already happened. Project activity has had a positive effect on HCVs.

5.1.5 Invasive Species (B2.5)

All listed species have been screened against the global database of invasive species.¹²⁹ None of the species above are included as invasive species in Uganda.

5.1.6 Impacts of Non-native Species (B2.6)

TIST farmers choose what trees and crops to plant on their own lands. They plant trees that they feel will provide benefits to them, including nutritional, medicinal, and environmental benefits. The TIST program does not tell farmers what to plant, but rather provides resources and training on high-value and beneficial trees. Many of these are indigenous while others have been adopted to meet the needs of farmers.

The only tree species with a known adverse effect is eucalyptus. Eucalyptus trees can overconsume water, negatively impacting waterways. In order to reduce the number of eucalyptus trees, TIST has trained farmers about the negative impacts of eucalyptus trees. Further discussion of eucalyptus can be found in PD section 5.2.7.

A table of all non-native species used, as well as justification for their selection, can be found in Appendices 08.¹³⁰ Ultimately, TIST farmers choose these species based on their knowledge of what trees will provide the maximum benefits.

¹²⁷ Appendix 46 Uganda Cluster Meetings: "PD Total UG011" worksheet, cells K22 and L22.

¹²⁸ https://www.jstor.org/stable/213267?read-now=1&seq=6#page_scan_tab_contents pages 3-17

¹²⁹ International Union of Concerned Scientists, Global Invasive Species Database, Accessed 11 January 2011 at <http://www.issg.org/database>.

¹³⁰ Appendix 08, "Species Pivot" worksheet. Filter column N to exclude the indigenous species.

5.1.7 GMO Exclusion (B2.7)

No GMOs were or will be used by the project to generate GHG emissions reductions or removals.

5.1.8 Inputs Justification (B2.8)

Not applicable. TIST does not distribute any fertilizers, chemical pesticides, or biological control agents. The program trains farmers to replace chemical fertilizers and pesticides with natural, organic alternatives. TIST does not distribute seeds, seedlings, or agricultural inputs of any kind. No chemical treatment use has been identified this monitoring period.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Actions (B3.2)

No negative offsite biodiversity impacts were expected or observed. As pointed out in Section 3.2.3, evidence that there has not been any displacement of members has been provided in the form of a survey of the landowners and project participants during baseline monitoring. They owned the land before the project and own the land during the project.

In addition, the program is designed to allow sustainable harvest within the project boundary by the members, which will reduce the need for fuel wood from external sources. The trees are owned by the Small Group members and as the trees die, either naturally or through selective harvest, they can be used as fuel wood by the members. The project activity will have a beneficial effect on area deforestation; instead of causing it, it will ameliorate it.

No mitigation measures are applicable, since no negative offsite biodiversity impacts are expected.

5.2.2 Net Offsite Biodiversity Benefits (B3.3)

No negative offsite biodiversity impacts are anticipated. Therefore, the net effect of the project on biodiversity is positive.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

The following are the results of the Biodiversity Impact Monitoring. Program-wide data was extracted from the TIST database as of 17 March, 2021.

1. Number of indigenous trees: 25,451
2. Hectares of indigenous trees: 98
3. Number of live trees: 1,672,088
4. Endangered/Vulnerable/Threatened Species planted: 3
5. HCV's impacted: 2
6. Riparian Hectares: 23¹³¹
7. Hillside hectares: 1,430¹³²

¹³¹ Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Flood Plain, River Bank and River Bottom.

¹³² Appendix 04, "Grove Summary" worksheet, Sum of column Q where column T is filtered by Gentle Hill Side and Steep Hill Side.

Biodiversity monitoring is ongoing as part of the overall monitoring of TIST. Data is collected by TIST Quantifiers as they visit each Small Group to count trees by species. Field data is recorded on custom programmed smartphones and uploaded to the TIST database. Data will be kept at least three years from the end of the reporting period. TIST works with academic institutions to use satellites to measure NDVI and other critical landscape level impacts of the program.

To meet the CCB Gold for Biodiversity, the standard calls for a:

“Demonstrat[ion] that the project zone includes a site of high biodiversity conservation priority by meeting either the vulnerability or irreplaceability criteria defined below, identifying the ‘trigger’ species that cause(s) the site to meet any of the following qualifying conditions and providing evidence that the qualifying conditions are met:

- a) *Vulnerability Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site:*
 - a. *Critically Endangered (CR) and Endangered (EN) species - presence of at least a single individual; or*
 - b. *Vulnerable species (VU) - presence of at least 30 individuals or 10 pairs...”*

Due to the presence of hundreds of *Prunus Africana*, *Cedrela Odorata*, and *Jacaranda Mimosifolia* trees listed as vulnerable on the IUCN Red List, the project meets this criterion. The planting of these trees is a direct measure taken to enhance these tree populations, while the planting of other trees reduces the overall pressure of deforestation. See Section 5.4.1 for details.

5.3.2 Biodiversity Monitoring Plan Dissemination (B4.3)

This information is included in the process described in Section 3.1.3.

The data monitoring process is communicated to farmer prior to the entry into the program. As part of this entry, the agree to allow TIST representatives to come and collect data on their farm. This information is collected and made publicly available on the TIST website. Directions to this website are included on newsletters distributed at Cluster meetings. Prior to validation and verification, TIST announced a summary of results of the monitoring plan in a monthly newsletter. This summary was disseminated in 6 languages: English, Runyankore, Ateso, Luganda, Luo, and Kiswahili.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

5.4.1 Trigger Species Population Trends (GL3.3)

Trigger Species	<i>Prunus Africana</i> (Red Stinkwood)
With-project Scenario	<i>Prunus Africana</i> is native to Uganda and is listed as vulnerable on the IUCN Red List. The population trend is unknown, but the species habitat is considered under threat. TIST farmers have planted and maintain 1,423 <i>Prunus Africana</i> , a clear, direct benefit to the species. As discussed, TIST operations also mitigate some of the pressures of deforestation. ¹³³

¹³³ World Conservation Monitoring Centre 1998. *Prunus africana* . *The IUCN Red List of Threatened Species* 1998: e.T33631A9799059. <https://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T33631A9799059.en>. accessed on 12 February 2020.

Trigger Species	<i>Cedrela Odorata</i> (Spanish Cedar)
With-project Scenario	TIST farmers have planted and maintain 29 <i>Cedrela Odorata</i> , a clear, direct benefit to the species. As discussed, TIST operations also mitigate some of the pressures of deforestation. ¹³⁴

Trigger Species	<i>Jacaranda Mimosifolia</i> (Blue Jacaranda)
With-project Scenario	TIST farmers have planted and maintain 11 <i>Jacaranda Mimosifolia</i> , a clear, direct benefit to the species. As discussed, TIST operations also mitigate some of the pressures of deforestation. ¹³⁵

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

Not Applicable

7 ADDITIONAL PROJECT IMPACT INFORMATION

Not applicable

¹³⁴ Mark, J. & Rivers, M.C. 2017. *Cedrela odorata*. *The IUCN Red List of Threatened Species* 2017: e.T32292A68080590. <https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T32292A68080590.en>. accessed on 29 March 2021.

¹³⁵ Hills, R. 2020. *Jacaranda mimosifolia*. *The IUCN Red List of Threatened Species* 2020: e.T32027A68135641. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T32027A68135641.en>. accessed on 29 March 2021.

Additional Information

All Appendices and Exhibits are at <https://www.tist.org/PD-UG-VCS-011%20Documents.php>

Appendix 01: Landsat1990 Examples

Appendix 02: Landsat2000 Examples

Appendix 03: KML Files of Project Areas

Appendix 04: Validation Worksheet

Appendix 05: KML File of Uganda (Project Zone)

Appendix 08: Monitoring Data

Exhibit 01: Environmental Screening

Exhibit 02: NEMA EA Approval

Exhibit 03 and 4: GHG Contracts

Exhibit 09: Financial info

Exhibit 12: UG Pests and Disease

Exhibit 13: "TIST Dist Enviro Profile National Environment Management Authority (NEMA), District Environment Profiles: Bushenyi"

Exhibit 14: Public Comments

Exhibit 15: Quantifier Safety

Exhibit 16: TIST UG Employee Rights

Exhibit 20: "TIST Dist Enviro Profile National Environment Management Authority (NEMA), District Environment Profiles: Kabale"

Exhibit 22: Benefit Survey Results

Exhibit 26: World Agroforestry Pinus Patula

Exhibit 27: World Agroforestry Eucalyptus Grandis

Exhibit 28: Uganda NFA Pinus Patula

Exhibit 31: TIST Acacia mearnsi

Exhibit 33: Grievance Policy

Exhibit 34: Sexual Harassment Policy

Exhibit 35: Non-Discrimination Policy

Exhibit 36: TIST Intro FAQ

Exhibit 37: TIST SG Eligibility Requirements

Exhibit 38: TIST SG Membership Application

Exhibit 39: TIST Values

Exhibit 40: Quantifier Manual 190613

Exhibit 41: Brown Allometric

Exhibit 42: Android Forms SOP

Exhibit 46: Uganda Cluster Meetings

Exhibit 47: Theory of Change

Exhibit 48: Ethnic Groups of Uganda

Exhibit 50: GPG Annex 3A.1 Tables.pdf

Exhibit 51: IPCC 2006 AFOLU Annex 4A.2.pdf

Exhibit 53: UG Newsletter Index

Exhibit 54: Cluster Meetings Checklist

Exhibit 55: UG Seminar Notes

Exhibit 56: TIST Phase II Report 030403

Exhibit 57: UG Stakeholder Notices