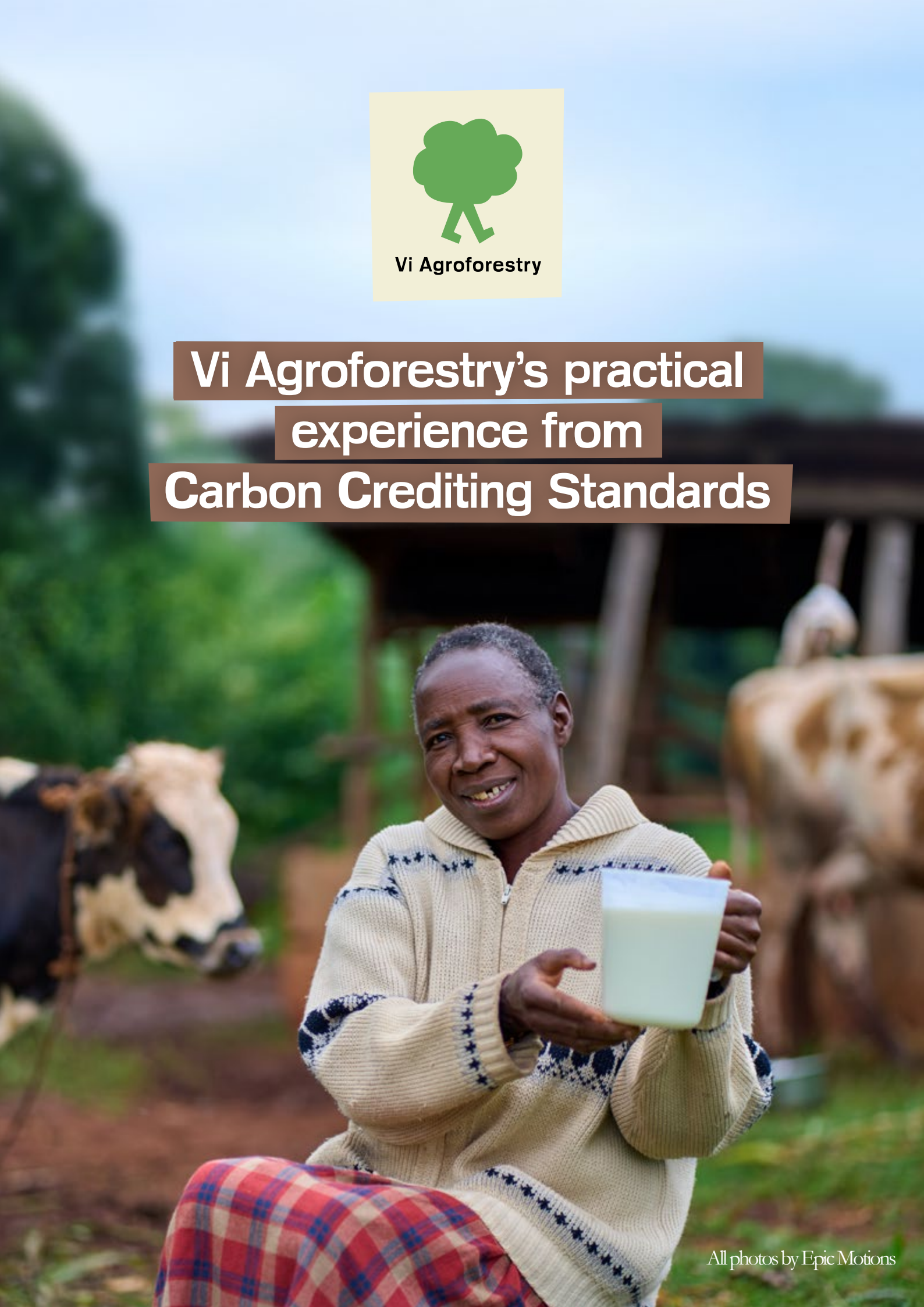
Vi Agroforestry

Vi Agroforestry's practical experience from Carbon Crediting Standards



All photos by Epic Motions

An agroforestry landscape shaped by carbon project requirements, highlighting how climate objectives can positively intersect with farming systems.

Vi Agroforestry's practical experience from Carbon Crediting Standards

Sida's Helpdesk for Environment and Climate Change (the Helpdesk) was commissioned to review the largest carbon crediting standards and provide an overall review and benchmarking of these. The Helpdesk recommends that Sida conducts field visits/pilot studies in relevant partner countries where the Voluntary Carbon Market is expanding to discuss with stakeholders how they view the standards' strengths, weaknesses, and differences in the field, far away from the theoretical set-ups of their websites and document libraries, highlighting their applicability in different contexts and sectors relevant to Sida and how well they are designed to contribute to poverty alleviation "on the ground".

Vi Agroforestry possesses such "on the ground" experience. Below is a short compilation of our experience since 2008/2009 when we first engaged in the VCM and initiated the Kenya Agricultural Carbon Project (KACP). We currently run climate compensation projects together with smallholder farmers in three different projects with three different standards:

- KACP – Kenya Agricultural Carbon Project (Verra VM0017)
- Emiti Nibwo Bulora "Trees sustain life" (Plan Vivo)
- Mt Elgon – Livelihoods Ventures (Verra's VM0017 and Gold Standard)

All three projects are in the agriculture, forest and other land uses (AFOLU) sector of carbon mitigation projects.

Gold Standard: smallholder farmers with their dairy cows in the Livelihoods Mount Elgon project, linking improved dairy production to climate and livelihood benefits.

Gold standard

Gold Standard certifies carbon projects under different methodologies and sectors and for Vi Agroforestry, the Livelihoods Mount Elgon project was registered under the methodology for emission reduction in dairy production. The goal of this methodology is to quality assure carbon projects through the reductions of methane emissions from dairy cows, through the application of better feeding systems, which contribute to a reduction of GHG emissions from enteric fermentation. The practical focus is to improve the quality improvement of feed and nutrients for the cow which results in increased milk production for the farmer. It is assumed that for every unit of milk produced in a more efficient way that avoids an elongated enteric process, there will be a corresponding reduction in emission of methane. For detailed information, you can visit the Gold Standard methodology document.

The Livelihood Mount Elgon project aims at improving the livelihoods of 15 000 smallholder farmers by empowering them through sustainable farming and milk-carbon value creation as well as establishing connections to markets through 15 cooperatives. It will also sequester more than 800,000 tonnes of CO_2 equivalent and create tangible environmental benefits (water conservation, biodiversity).

Through improved feeding practices that cut methane emissions, Gold Standard certifies the Livelihoods Mount Elgon project under its dairy-production methodology.

Strength

Environment

The strengths of Gold standard lie in its climate impact, water benefits, and commitment to holistic approach to development. The standard aligns climate action with broader SDG:s. Projects certified by the Gold Standard address multiple SDG:s simultaneously, including poverty eradication, health, gender equality, and clean water. This holistic approach ensures that environmental benefits are interconnected with social and economic well-being.

Social and poverty alleviation

- Gold Standard requires a clear contribution to SDGs which are monitored through the annual report. This approach ensures that projects not only reduce emissions but also create positive social and economic outcomes.
- It supports good agricultural practices that improve soil organic matter – hence contributing to quality and sustainable food production. Smallholder farmers can use this standard to certify their sustainable agricultural efforts to also earn a bonus for their environmental stewardship.
- The standard is also supporting afforestation and reforestation which in the long run enhances ecological and society resilience (provision of extra income from tree management or tree produce such as fruits etc. and on a higher-level provision of clean environment for better wellbeing).
- The standard is also big on gender issues, stakeholder consultation and safeguards which means that it can apply in most of rural communities' projects.
- The Gold Standard's guidelines prioritize sustainable development, community engagement, and a holistic approach, contributing to poverty reduction and socio-economic well-being.

Weakness

Environment

Gold Standard lacks a methodology that properly covers agroforestry and agricultural land management activities for carbon sequestration. Only minimum tillage is covered leaving out our many other practices. When Mt Elgon Livelihood project was initiated, it was to use Gold Standard for both SALM (Sustainable Agricultural Land Management) and dairy. However, after the first verification Gold Standard was found to be too weak for SALM component which then had to be shifted to VCS.

Social and poverty alleviation

Gold standard is quite strong on relating to social SDGs. However, their primary goal remains carbon emission reductions and generating carbon credits. While they aim to fulfill the SDG:s, these efforts are often secondary and viewed as additional benefits. Social benefits are always secondary to sequestering carbon and satisfying market demand. This is a common weakness across all carbon crediting standards and trade-offs are common.

The improved dairy cow feed, with increased nutrients, boosts milk yields for smallholder farmers.

For instance, in the Livelihoods Mount Elgon project, farmers were encouraged to plant fodder trees for their cattle to improve the dairy production and sequester carbon. This has resulted in reduced agricultural land for household crop production, hence impacting the local food availability. The project design, based on the standard requirements, only required improved productivity and production through sustainable practices, but this trade-off was an unforeseen consequence. This can be considered a project design failure, but similar trade-offs are often replicated since carbon credit program schemes prioritises carbon reductions and removal.

To be noted, in the Livelihoods Mount Elgon carbon revenue is not directly shared with the participants because the project is pre-financed by carbon markets investors who in turn receive the entire revenue. The farmers benefit through the project capacity interventions aimed at improving their resilience and adaptation to effects of climate change and improve their agricultural productivity.

Cost/benefit overview

Easy to monitor, report and verify compared to VCS. Their template is straightforward and does not require very high level of knowledge for completing, compared to VCS which requires technical assistance (ViA utilizes UNIQUE as consultants) for completing the monitoring report. Onboarding technical assistance, amongst other aspects, makes VCS overall more costly compared to Gold Standard. However, the two standards are used for completely different components making cost comparison difficult.

An agroforestry landscape shaped by carbon project requirements, illustrating how land-use choices balance productivity, monitoring simplicity, and climate objectives.

Under the Verified Carbon Standard, smallholder farmers use practices like composting and agroforestry to improve soil health, livelihoods, and carbon sequestration.

Verified carbon crediting standard (VCS)

KACP and the sustainable agriculture part of the Livelihood Mount Elgon project are certified under VCS (see above, the dairy part is certified under Gold Standard). KACP is based in the western region of Kenya, and it is in its 14th year of implementation. The project's objective is to strengthen capacity of smallholder farmers (those with less than 1 hectare of land) to utilise sustainable agriculture land management (SALM) practices based on agroforestry. Practices such as tree planting, composting, cover cropping and mulching improves the soil quality by ensuring that organic material is recycled. This in turn improves the soil's water holding capacity and provides nutrients which enriches the soil and contribute to increased harvests. As a result, the families' income, and food security increases. Adoption of SALM and agroforestry contributes to carbon being sequestered in both trees and soil. Cumulatively over 1 million USD has been paid as incentive to over 29 000 farmers organised into 1 750 groups.

Strength

Environment

VCS brings in a lot of inbuild experience in managing carbon projects and that is reflected in diversity of their carbon methodologies. For example, VCS were instrumental in creation of the first smallholder farms agricultural carbon standard (VM0017) because of piloting the KACP. VCS have also developed a biodiversity standard that compliments and expand payments for ecosystem services derived from the project.

For the monitoring methodology in VM0017 (also included in the baseline review) the following indicators are included:

1. Record the amount of fossil fuels used in the project;
2. Record the amount of synthetic fertilizers used in the project;
3. Estimate the amount of production of biomass by N-fixing species in the project;
4. Estimate the amount of agricultural residues burnt in the project;
5. Record the production from areas of various types of agricultural land management;
6. Measure the changes in biomass in woody perennials;
7. Estimate the reduction in the amount of biomass used for energy that is a result of the project.

These indicators showcase the understanding of additional farming activities that help reduce and remove GHG emissions from the AFOLU sector beyond carbon sequestration in biomass and soil. Unfortunately, this methodology is now deactivated, see below under "weakness".

Social and poverty alleviation

VCS standard promote holistic development, community empowerment, and transparent carbon accounting, contributing to poverty reduction and socio-economic progress. By integrating social, economic, and environmental considerations, VCS-certified projects create shared value. For example, in the Livelihoods Mount Elgon and KACP projects, the focus on improved economic livelihoods is overlaying the social-economic benefits to be accrued to the participating farmers but positive impact on the environment (through SALM implementation) remains a key benefit.

Implementation of compost on a farm in the Livelihoods Mount Elgon project

Weakness

Environment

The VM0017 methodology was better suited for smallholders but is now deactivated. At the moment, Vi Agroforestry is currently assessing whether to shift to another methodology (VM0042 has been suggested by VCS) or a completely new methodology for monitoring carbon stocks in KACP. A potential shift to VM0042 includes problems for a project as old as KACP when it comes to baseline and monitoring methods. At present, VCS has small opportunities for agroforestry projects, especially those implemented by small-holder farmers.

Social and poverty alleviation

The development and improvement of methodologies is a normal process and should be supported, however the deactivation of VM0017 makes it almost impossible to implement projects with small-scale farmers and provide benefits (through either a monetary compensation or other benefit-sharing functions such as capacity building of SALM). It seems VCS prefers working with large carbon projects even when the social and poverty alleviation benefits of those projects is not clear.

Cost/benefit overview

The current methodologies under VCS are not friendly to projects based on small-scale farmer participation. The methodologies are time-demanding, expensive and requires a lot of administration. Moreover, to obtain certifications for the credits, third-party auditors must verify the carbon stocks. Currently, due to a lack of local expertise, verifiers from Europe and the US are flown in for this process, which is time-consuming, expensive, and environmentally unfriendly.

By returning organic matter to the soil, mulching contribute to increased yields and helps store carbon underground.

Tree management is a core capacity-building focus in the Trees Sustain Life project, helping reduce crop competition and maintain trees over time.

Plan Vivo

The Trees Sustain Life project is certified under the Plan Vivo Standard. The project aims to alleviate poverty among smallholder farmers, restore ecosystems, enhance climate resilience, and mitigate climate change by sequestering carbon in trees. The project reached its 13th year of operation in 2021 and saw 620 smallholder farmers graduate from their 10-year contracts for climate compensation. Since then, 619,848 trees planted in 540ha of land cover and 144,024 m of boundary trees. Tree planted can sequester 76,759 tCO_2, where 993 farmers participated (620 graduates and 373 non-graduates). Cumulatively, 31,639 USD has been paid as incentive to the registered farmers. The project is designed for the farmers and community groups to adopt 4 technical specifications (TS), which are also monitored annually:

1. **Woodlot:** Tree planting on degraded areas
2. **Boundary planting:** Trees planted along farm boundary
3. **Dispersed interplanting:** Intercropping trees with crops
4. **Fruit orchards:** Intercropping fruit trees with crops

Strength

Environment

Allows involvement of smallholder farmers in GHG removal activities and therefore additional arsenal to fight climate change. The technical specifications being applied reduces land degradation, improve soil health and increase biodiversity.

Social and poverty alleviation

Plan Vivo standard has excellent social and poverty alleviation requirements and safeguards since their goal is to aid communities on the forefront of the climate crisis. The room for livelihood integration gives farmers room to generate more income from alternative sources and mostly related to environmental conservation and restoration. Our project is designed according to plan vivo model that, the stakeholders and community inclusivity and participation is key. However, agroforestry specification choices are limited, given that there are various other agroforestry systems and technologies not considered.

Compared to the other two carbon crediting standards, Plan Vivo is the only one that provides farmers with an ex-ante transaction, i.e. providing financial support before the carbon credits are being produced and the land use plans are initiated. While this financial assistance is beneficial for smallholder farmers, it also introduces a risk if farmers fail to fully implement their plans as committed, then the credits must be compensated elsewhere which negatively impact the project owner.

Weakness

Environment

The methodology only considers trees in the land use system and only promotes 4 technical specifications. Due to its small portfolio, several carbon pools are excluded which makes the assessment on the project's carbon removal impact flawed. These following carbon stocks are excluded from the baseline:

- The carbon stored in leaf-litter and dead wood will increase as a result of agroforestry activities but is unlikely to constitute a large proportion of the total carbon pool and is therefore excluded from the baseline.
- The effects of agroforestry plantings on non-tree vegetation are less certain but are unlikely to constitute a large proportion of the total carbon pool, so non-tree vegetation is also excluded from the baseline.
- The effects of project activities on soil organic matter are also less certain, although the carbon stored in soils is expected to increase, but the cost associated with recording the carbon in soil prevents their inclusion in the baseline.

Social and poverty alleviation

- The establishment of the project is expensive in the beginning which hinders more people from participating due to lack of enough resources. Due to its inability to reach more people (limited scalability), its social and poverty alleviation benefits are compromised.
- Woodlot planting system allows integration of the crops few years after planting, when trees grown up and develop total shade, crops cannot be grown underneath as the tree management does not allow pollarding and coppicing but only 25% pruning which might contribute to food insecurity.
- There is not any further incentive after the contract ends that limits a farmer from harvesting the planted trees. Thus, impacting the permanency of the carbon project.
- Lastly, though well-known, the standard has not gained traction due to its slow approval of projects and reports. As a foundation, its governance and decision-making process are slow and bureaucratic.

Cost/benefit overview

Quite costly compared to VCS and Gold standard due to stringent requirements, follow-ups and the small nature of Plan Vivo projects.