

Non-Technical Summary

Gold Standard for the Global Goals (GS4GG) Voluntary Project Activity (VPA) “Syntropic Agroforestry Coffee Project in São Francisco de Paula, Camacho and Candeias municipalities, Minas Gerais, Brazil”¹ under the PoA “Global Syntropic Agroforestry Program”

Context

Forests are of great importance for biodiversity, climate, healthy soils, retention of water and food production. However, only in the State of Minas Gerais, Brazil, 3.10 million ha of tree cover was lost from 2001 to 2023, equivalent to a 17% decrease in tree cover since 2000 and 1.66 Gigaton of CO₂e emissions.² Deforestation linked to agriculture is a major driver of climate change. Commodity-driven deforestation (including for cattle pastureland, cocoa, coffee, soy, oil palm etc.) have contributed to 25% of the total tree cover loss worldwide.³

The economic impact on society is enormous. In terms of coffee, drier and hotter conditions are jeopardizing arabica coffee production in São Paulo and Minas Gerais, with climate change and deforestation being the main causes. Since 2010, temperatures in coffee-producing municipalities have risen by 1.2° C during the flowering period; projections indicate more days of extreme temperatures (above 34°C) by 2050.⁴

Almost all coffee producers in Minas Gerais raise concerns about lack of water, extreme heat with long dry spells, clear symptoms of climate change, which have been undermining the resilience of coffee plants. Furthermore, there is a loss of appropriate conditions for the coffee’s eco-physiological needs such as mild forest temperatures, intact soil food web, allowing water availability in the soil throughout the year as it was the case in previous days in the coffee’s country of origin Ethiopia and the beginning of coffee growing era in Brazil.

Coffee in Minas Gerais is typically planted as monoculture crop under full sun. Farmers report that coffee plantations are more and more exposed to pest and disease attacks (such as *Leucoptera coffeella* (bicho mineiro), *Hemileia vastatrix* (ferrugem), *Hypothenemus hampei* (broca-do-café)). In response to this, farmers seek to increase the use of external inputs in form of pesticides and fungicides along with the use of chemical fertilizers. The use of glyphosate is very common, one application destroying 80% of the microbiological life. Almost all the producers complain about decreasing coffee productivity over the last few years.

This is where the project “Syntropic Agroforestry Coffee Project in São Francisco de Paula, Camacho and Candeias municipalities, Minas Gerais, Brazil” comes in to change that situation.

Photos below: Long dry spell in winter causes the coffee to suffer and can even cause the coffee to die. Bare, uncovered soil results in soil erosion, lack of retention of water, no micro-biological life, soil compaction

¹ The project is also communicated under the title „Cultivating Syntropic Agroforestry on Coffee Farms in Brazil for Resilient Futures”

² <https://www.globalforestwatch.org/dashboards/country/BRA/13/?category=forest-change&location=WyJib3VudHJ5IiwicQlJBlwiMTMiXQ%3D%3D>

³ Curtis et al. (2018), Classifying drivers of global forest loss, <https://doi.org/10.1126/science.aau3445>.

⁴ <https://news.mongabay.com/2023/10/how-climate-change-could-jeopardize-brazilian-coffee/>



Photo below: *Leucoptera coffeella* (bicho mineiro)



Photo below: *Hemileia vastatrix* (ferrugem) causing early leaf fall and drying out of branches



Objectives, Applied Approach and Location of the Project

The “Syntropic Agroforestry Coffee Project in São Francisco de Paula, Camacho and Candeias municipalities, Minas Gerais, Brazil” project consists of conversion of existing coffee monoculture plantations under full sun towards an agroforestry system with a high density of both native and exotic trees (such as *Khaya ivorensis*, Cedro Australiano, *Inga* spp, *Enterolobium contortisiliquum* (Tamboril), *Guazumu ulmifolia* (Mutamba), *Peltophorum dubium* (Canafistula) and others), that means between 800 to 1,100 trees/ha in the final stage. The initial density will be even higher, gradually thinning out in the first few years until the final density is reached. It was Ernst Götsch - the founder of the syntropic farming concept - who introduced the term “mother tree” characterizing fast growing-, deep rooting-trees which respond well to annual pollarding and

are easy to manage. By annually pollarding⁵ those “mother trees” at a height of around 5m, huge amount of organic matter is provided (up to 2 to 4 times more than in a natural forest) resulting in continuously covered and revitalized soils and rejuvenation together with induction for vigorous new growth of all plants is achieved. The pollarded material can be arranged to the coffee rows as either shredded or un-shredded material. In addition, around 70 fruit trees (such as avocado, mango, jackfruit, citrus, macadamia, pecan nut) and approximately 20 emergent trees⁶ per ha are integrated. Finally, beans and cassava help to raise the trees, since they provide shade and provide nutrients to the young trees. In addition, cassava helps to aerate compacted soils. Grass is planted along the tree rows to produce additional organic matter. This way photosynthesis can be maximized, soils continuously be covered, external inputs significantly reduced or even completely avoided, and the dynamics of the agroforestry system maintained, all important principles under the syntropic farming concept⁷.

⁵ Pollarding means the removal of the upper branches of a tree (the crown), which promotes the growth of a dense head of foliage and branches, to keep trees smaller than they would naturally grow.

⁶ Emergent trees form the highest stratum rising above the canopy of a forest.

⁷ The syntropic farming concept imitates nature with the aim of increasing diversity, complexity and life in a similar way to that of a natural forest.



Photo above: Coffee agroforestry farm in Bolivia: Coffee flowering induced by previously "pollarded" Inga trees



Photo above: Ernst Götsch farm – Fazenda Olhos D'Água: Recently pollarded trees in a highly diversified cocoa plantation





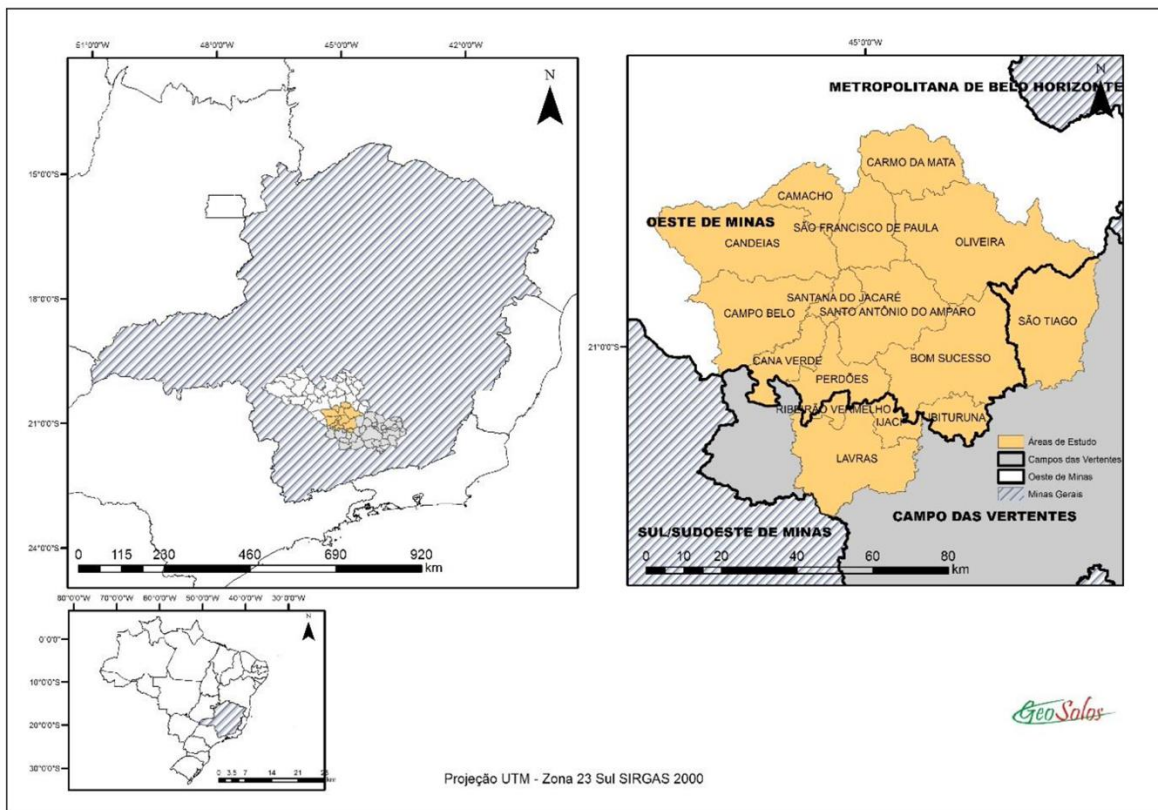
Photo above: Ernst Götsch farm – Fazenda Olhos D'Agua: Recently pollarded organic material is evenly distributed on the soil in a cocoa plantation

The main objectives of the project are to restore soils and hence to stabilize or even increase coffee productivity and with-it farmers income, enhance food security of farmers, increase resilience of coffee production and remove the greenhouse gas carbon dioxide (CO₂) from the atmosphere through carbon sequestration.

This project will focus on non-mechanised coffee plantations being in the municipalities of São Francisco de Paula, Camacho and Candeias in Campo das Vertentes, Minas Gerais, Brazil (see map in the following).

Figure 1: Map with municipalities of Campo das Vertentes⁸

⁸ H. Alves et al (2019), CARACTERIZAÇÃO DAS ÁREAS CAFEEIRAS DA REGIÃO DO CAMPO DAS VERTENTES



The project will be certified as Gold Standard carbon project under a broader framework, known in the carbon market as ‘Programme of Activities (PoA)’. A PoA establishes the guidelines for any project that will make part of the PoA.

This first voluntary project activity (called real case VPA) as well as several possible follow up projects (called regular VPAs) make part of a grouped local stakeholder consultation (LSC)⁹. Any future projects under this group LSC would be located in any or all of those three municipalities and can cover both non-mechanised as well as mechanised coffee plantations.

Involved Parties

GrowGrounds ApS (GG), being the Coordinating and Managing Entity (CME) of the PoA and at the same time project developer of the given first real case VPA, is a Danish-based impact-driven start-up that is focused to decrease coffee’s negative CO₂ impact and helps farmers to move away from monoculture coffee farming to syntropic agroforestry systems, while giving farmers access to the global carbon market.

Hanns R. Neumann Stiftung (HRNS) is a private non-profit foundation established in 2005 pursuing three main goals: (1) improving the social and economic situation of smallholder farming families in tropical countries, (2) protecting the environment and nature, and (3) promoting youth perspectives. HRNS has been active in Brazil since 2009 and will be the local project implementer on the ground for the project in Minas Gerais.

Forests4Farming, a non-profit organization under the leadership of Ernst Götsch with long-term expertise in the implementation and management of tree-based farming projects following

⁹ A grouped stakeholder consultation is a single stakeholder consultation which is valid for both real case project (real case VPA) and/or several regular projects. Regular projects correspond to the same real case project, are implemented in the same geographical boundary as outlined in this Non-Technical Summary and are included in the PoA within 2 years of this announced Local Stakeholder Consultation meeting.



syntropic farming principles will transfer the necessary knowledge and know-how to farmers and technicians on the ground.

Carbon Credits

Greenhouse gas (GHG) sequestration achieved through the plantation or assisted natural regeneration of trees will result in carbon credits following Gold Standard certification rules and procedures. The PoA will apply the Gold Standard methodology “Afforestation/Reforestation GHG Emissions Reduction & Sequestration Methodology”.

The first project implemented by GrowGrounds aims to pay back at least 60% (cash and/or in kind) of revenues from the sale of carbon credits to the farmers. The remaining portion of the revenues are used to finance the carbon certification related costs and to cover costs incurred by the project developer/implementer.

Duration, Scale and Time-schedule

The duration of the first project and any possible follow up project activities is at least 30 years following Gold Standard for the Global Goals requirements.

The PoA along with the first real case VPA being implemented in Minas Gerais, Brazil is expected to be registered with the Gold Standard for the Global Goals latest by Q2, 2025. The first real case VPA will be developed as micro-scale project not exceeding neither 500 ha in total area nor 10,000 tCO₂e in annual carbon sequestration.

The first trial plots are expected to be installed in São Francisco de Paula end of September/beginning of October 2024.

Other follow up project activities may follow after the PoA and its first VPA will have been Gold Standard certified.

Compliance with the Safeguarding Principles

Any VPA to be implemented guarantees to follow all safeguards as defined in the Gold Standard requirements, which are as per the following.

Principle 1 - Human Rights

The project respects internationally proclaimed human rights and is not complicit in violence or human rights abuses of any kind, as defined in the Universal Declaration of Human Rights. It does not discriminate on the basis of gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation.

Principle 2 - Gender Equality and Women's Rights

The project activity does not support any form of discrimination based on gender. The project will take into account the gender roles and capacities of women and men to participate equally in the design and consultation activities and aims at including women to the largest extent possible in project activities.

Principle 3 - Community Health, Safety and Working Conditions

The project will not expose the community to increased health risks and will not adversely affect the health of workers and the community. Workers involved in the project activity are not exposed to unhealthy working environments, as the project activity will not involve hazardous chemicals or other hazardous materials. It will be ensured that youth/farmers involved in

pollarding activities will be properly trained and equipped with protective equipment as and when necessary.

Principle 4 - Cultural Heritage, Indigenous Peoples, Displacement and Resettlement

The project activity will not negatively impact cultural heritage, indigenous peoples or displace or resettle people. The project is not located on lands/territories claimed by indigenous people.

Principle 5 – Corruption

The project does not involve, complicit in, or inadvertently contribute to corruption or corrupt projects. The project is implemented on farmers' lands who have full control over their land.

Principle 6 -Economic Impacts

No negative economic consequences are expected from the project activity. On the contrary, the project is expected to contribute to sustainable economic growth. The project will respect all labor rights and follow the respective national laws.

Principle 7 - Climate and Energy

The project will sequester CO₂, which will be monitored and verified in accordance with Gold Standard carbon requirements.

Principle 8 - Water

The project will not have any negative impact on natural water patterns/flows or cause further erosion and/or instability of water bodies. On the contrary, increased vegetation through trees and other plants allows for better water retention and infiltration, which has a positive impact on groundwater availability.

Principle 9 - Environment, Ecology and Land Use

The project will not have any negative impact on the environment and ecology. The project does not adversely affect or alter intact high conservation value (HCV) ecosystems, critical habitats, landscapes and key biodiversity areas.

Contribution to Sustainable Development

The project aims to contribute to the following Sustainable Development Goals (SDGs):

SDG 2 – Zero Hunger

The project activity will implement resilient agricultural practices, hence create better soil conditions and sustainable food production systems, which will benefit farmers in form of stable incomes and food for subsistence. The project activity expects to reduce or even eliminate the use of external inputs (chemical or organic fertilizer, pesticides, herbicides, fungicides) resulting in cost savings for the farmers. The farmers will benefit from the carbon project in form of cash and/or in-kind payments.

SDG 4 – Quality Education

The project activity will provide training/workshops to farmers and technicians in agroforestry practices following syntropic farming principles, thereby enhancing their skills and knowledge of sustainable agriculture. This will make their work more efficient, effective and sustainable for soils and the environment.

SDG 8 – Decent Work and Economic Growth



The project activity expects to create jobs for technicians, service providers for conducting pollarding activities, for staff carrying out monitoring activities and others. Hence, the project activity will increase business and income opportunities in the municipalities where the project will be implemented.

SDG 13 – Climate Action

The project activities result in carbon removals through planted trees as well as from trees of assisted natural regeneration. Soil Organic Carbon and/or Biochar are further possible carbon sinks in future.

SDG 15 – Life on Land

The project activity expects to convert up to 500 ha of full-sun monoculture coffee plantations with different coffee farmers scattered across the 3 municipalities into diverse agroforestry systems following syntropic farming principles. This will provide new habitats for flora and fauna.

Contact

For any questions or comments, please contact:

Christina Singh

Chief Operations Officer

Email: christina@growgrounds.org

Phone: +45 41760744