**The Republic of Uganda**



**Mitigation Activity Design Document for Article 6.2**

1. Overview of Mitigation Activity in Uganda.

Uganda has a total of 92 registered VCM activities that have issued 16,706,499 credits. Among those are 13 projects that have issued 3.6 million verified carbon units(VCU) with agriculture and energy efficiency as dominant sectors.

Key projects in renewable energy demonstrate Uganda's efforts in Carbon sequestration and emissions reduction. The operationalization of Article 6 through Uganda's National Climate Change Act 2021 emphasizes the country's unique geography, climate vulnerability and development of it's Carbon market.

Most schools and families in Uganda cook currently with traditional three stone fires or open fires which create serious health implications for locals. This means that a lot of time is spent for firewood collection, causing deforestation and land degradation. Firewood combustion is moreover a significant source of greenhouse gas (GHG) emissions responsible for climate change. To address the above issues, Uganda has seen an increase in Energy Efficiency Improvement Projects in schools and communities across the country. These implementations have allowed schools and households to cook the same amount of food using less firewood and reduce their health issues from smoke. The total emission reduction from the disseminated 25,600 improved cookstoves will be around 480,976 tonnes of CO2, with an annual average emission reduction of 32,065 tonnes of CO2.

While the commitment of the Government of Uganda towards enabling the transition to clean cooking is commendable, I take you through a key project that sheds light on Uganda's multiple efforts to clean cooking transition. This project fosters a comprehensive and collaborative approach involving governmental agencies, non-governmental organizations, relevant stakeholders, and the community, in order to promote a more extensive adoption of clean cooking practices.

**The** **Vash** **Green** **schools** **project**

The Vash Green schools project, initiated in 2019 has revolutionized cooking practices and energy consumption for schools in Uganda.

Implemented by Tard foundation , this project focuses on adopting energy-saving technology (Eco-friendly stoves) at school level. The beneficiaries, dedicated to reducing unsustainable use of natural resources, actively participated in this transformative initiative.

Initiated in 2019, the project has witnessed significant milestones, showcasing the tangible impact of energy-saving cook stoves.

By providing clean, eco-friendly cooking solutions, the project tackles multiple challenges - it improves health outcomes for cooks, decreases deforestation driven by firewood collection, and advances sustainable development goals.

A key focus of the initiative is aligning with Article 6 of the Paris Agreement, which establishes frameworks for countries to cooperate on climate change mitigation. The project promotes the adoption of clean technologies and supports Uganda's efforts to fulfill its commitments under the Paris accord.

Through the installation of the specialized stoves, the Vash Green Schools project underscores reduced schools' reliance on traditional firewood for cooking and lighting. This curbs greenhouse gas emissions, protects local ecosystems, and creates a healthier indoor environment. The initiative also engages school communities to foster long-term behavior change and sustainability.

The Vash Green schools project has been implemented so far in 75 schools across Central Uganda.

Impact

Adoption of New Technology: Beneficiaries embraced the use of modern cook stoves, reducing wood fuel consumption significantly compared to traditional methods.

The introduction of modern Eco-friendly stoves has changed the way schools use energy in their kitchens. It's efficient and sustainable.

Time Savings: The Eco-friendly stoves, equipped with three saucepan sits, enabled beneficiaries to save time during meal preparation. The adoption of modern cook stoves has also significantly reduced pressure on natural resources like trees for wood fuel.

Health Risks Reduction: The project has minimized health risks, particularly for females engaged in kitchen work, by directing smoke into chimneys, ensuring a safer cooking environment.

Kitchen Garden Establishment: Training sessions have empowered some beneficiaries to establish kitchen gardens which have enhanced access to a balanced diet. These have led to improved balanced diets among some project beneficiaries.

The project has contributed to reduced malnutrition, ensuring cooks can keep food warm for students with the efficient cook stoves.

Capacity Building: Beyond cooking innovations, schools have *been* capacitated through training on School Savings and Loans Associations. Beneficiaries have successfully implemented saving practices, demonstrating financial resilience.

Bio Char Processing: Beneficiaries received training on effective use of carbonized drums to process bio char, contributing to sustainable cooking practices.

The Vash Green schools project lights the way for sustainable cooking practices, showcasing not just technological advancements but also a holistic transformation in community well-being and environmental stewardship.

NB:

The Ugandan Government’s 3rd National Development Plan (2022-2027) set a target to reduce the consumption of biomass for cooking to 50% by 2027 and also increase the percentage of population using clean cooking to 50% by 2027. It plans to distribute 1 million 13 kg LPG cylinders between 2022 to 2027 in a bid to increase LPG access from 1% to 20% by 2030.

The Government also aspires to produce natural gas and increase installed electricity capacity from 1 356.6 to 2 000.0 MW. At the same time the governments is piloting the distribution of 1000 Electric Pressure Cookers (EPCs) and developing an e-cooking strategy and implementation plan for the country. Additionally, the Government has established various incentives to encourage private-sector involvement, as well as affordability, some of which include:

VAT waivers on LPG and ethanol for cooking;

zero import tax on stove parts required for local assembly;

biogas tubular digesters and solar panels to support solar cooking;

introducing a lifeline tariff for cooking with electricity; and

reduced import tax on stoves from 25% to 10%.

General Information

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| Transferring country |  |
| Managing entity in  transferring country | Appropriate entity has to handle the interaction with the regulators and has control over transfers of carbon credits. Can be national or international, depending on capacities and roles. |
| Receiving country / Purpose | If under a bilateral agreement, list the buyer country. Else “Use towards NDC or other purpose” can be sufficient. |
| The entity in receiving  country | Where applicable |
| Mitigation activity name | Vash Green Schools Project |
| Sector | Energy and Environment |
| Mitigation rationale | Thermal Energy Efficiency in School Kitchens |
| Summary of mitigation  activity | As evidenced by many documents such as the International Energy Alliance , Clean Cooking Alliance, wood fuels are currently not used sustainably. The Green School Program addresses this issue starting in School Kitchens. The Green Schools program aspires to eliminate three-stone fireplaces in school kitchens rapidly and over time bring all school kitchens to zero emissions.  The program supports schools anywhere in the country with advice, support and a budget for energetic kitchen renovations. Any technology that can reduce at least 50% of fuel use is eligible. The most frequently identified and immediately available intervention is usually a rocket stove. However, the program also includes a research and development support program to enhance school kitchens beyond the minimal stove installation to include locally appropriate technologies as available and requested by the school cooks.  The program is providing full transparency to all stakeholders by recording all baseline kitchens, requests for renovations, all construction activities and annual interviews with cooks and bursars in all schools on video. This database is used to establish how many meals have been cooked on improved stoves and whether they really achieve the estimated 50% reduction.  The carbon reduction is based on a national default value multiplied by the number of meals cooked. Based on international default values 50g CO2 per meal may be applied for replacing a three stone fire with a rocket stove, unless a nationally defined value is available.  Based on the data gathered from nationally appropriate local innovation, emission reductions achieved beyond the effect of rocket stoves will be added as the data is gathered. However, the maximum reduction potential is twice the default value, resp. 100g CO2 per meal for a zero emission kitchen.  *As of 2020 report[[1]](#footnote-2) given by the nbs, the number of schools were as follows:*   |  |  |  |  | | --- | --- | --- | --- | |  | **Public School** | **Private School** | **Total** | | **Primary School** | *170,569* | *24,167* | *194,736* | | **Secondary School** | *84,614* | *21,392* | *106,006* |   *Add nationally appropriate approval flow here. This is an example:*  *- First Technology: Rocket Stoves – full documentation to be provided as Annex. This includes a 3-D model of the brick construction as well as data from testing, approval from ministry of energy, as nationally appropriate.*  *- Inclusion of new stove construction crew:*  *To be eligible for the list, a mason crew must complete training and construct a "Masterpiece" stove at their own expense and submit a video of a water boiling test. The first installation by a new mason crew will include a comprehensive kitchen performance test, comparing conditions before and after the installation. If the Head of Kitchen and one remote Video Reviewer confirm that it passes the 50% threshold, the stove will be included and the mason crew fully compensated for the value of the stove by the standard terms.*  *Inclusion of new School*  *- Regional contact persons to let schools know about the offer*  *- Kitchen Head and Headmaster can request inclusion from an existing supplier or suggest a new one for inclusion via app.*  *Inclusion of new Technologies: Additional improvements beyond Rocket Stoves will be included after extensive testing data is gathered in pilot installations and validated.* |
| Geographic coverage | Nation-wide |
| Date and place | 2024-Uganda |
| Document version |  |

2. Methodological Approach for Mitigation Outcomes

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| (Discuss against which scenario the mitigation outcomes of the Activity will be credited)  The baseline is continued use of a three stone fire for cooking.  *Confirm whether school stoves are included in the NDC and adjust accordingly. Under Article 6, only activities that go beyond the unconditional NDC may be credited.*  *All kitchen renovations under the program are expected to be included in the next NDC period as baseline. While the program itself can continue to operate, individual installations shall not be credited for more than five years.* |

3 Avoiding double claiming of mitigation outcomes

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| (Declare the potential overlaps and interactions over time with climate finance, governmental support and other sources of carbon finance).  • Climate finance and governmental support.  *You cannot receive Article 6.2. support for projects that already get Article 9 support.*  •Attribution of mitigation outcomes.  *This section specifies who gets how much of the carbon credits generated by the program. We suggest to set aside at least 10% as shares of proceed for a co-benefit fund and no more than 25% for a carbon asset developer. Other stakeholders who might share an upside are carbon buyers or construction crews.* |

**4 Promoting sustainable development and transformational change**

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| (Describe how the activity is promoting sustainable development. The following aspects  shall be addressed)    **SDG 1**  SDG 3: Good Health & Well-being  • Target 3.9: Aim to reduce the number of deaths and illnesses from hazardous chemicals and pollution by 2030.  • Indicator 3.9.1: Mortality rate attributed to household and ambient air pollution.  • Impact: Diminishing harmful smoke in school kitchens leads to better health outcomes, especially for eye and respiratory health among kitchen staff. The improved conditions are a key motivator for schools' participation.  SDG 5: Gender Equality  • Target 5.1: End discrimination against women and girls.  • Indicator 5.1.1: Presence of legal frameworks for equality and non-discrimination based on sex.  • Impact: The technology is predominantly used by women, enhancing their work conditions. The project workforce comprises male and female stove builders, with a majority being male.  SDG 7: Affordable & Clean Energy  • Target 7.1: Ensure access to affordable, reliable, and modern energy services by 2030.  • Indicator 7.1.2: Population's reliance on clean fuels and technology.  • Impact: Improved Cook Stoves reduce fuel usage, making clean energy accessible and affordable for schools.  SDG 8: Decent Work & Economic Growth  • Target 8.5: Achieve productive employment and decent work for all, including equal pay, by 2030.  • Indicator 8.5.1: Average hourly earnings by demographic.  • Impact: Smoke-free kitchens ensure a decent workplace for cooks, especially women. The program also provides training and ongoing employment opportunities for masons.  SDG 13: Climate Action  • Target 13.2: Integrate climate measures into policies and planning.  • Indicator 13.2.2: Yearly greenhouse gas emissions.  • Impact: The stoves significantly reduce emissions, with less than one-third accounted for as ITMOs, leading to net climate mitigation.  SDG 16: Peace, Justice & Strong Institutions  • Impact: The digital approach of the project ensures transparency in all financial transactions and contractual agreements, with video evidence for accountability.  SDG 17: Partnerships for the Goals  • Target 17.7: Support environmentally sound technology development in developing countries.  • Indicator 17.7.1: Funding amount for technology transfer.  • Impact: Remote engineering support for mason crews across the country.  **Project Mitigation Impacts**  The Project will have valuable rural and/or economic development dimensions that will contribute to growing market including the following;  (1) The provision of jobs and income to people who work on installation and maufacturing of the stoves and components thereof, manufacturing of clay bricks, installation, monitoring and maintenance  (2) Helping to restore degraded lands and mitigate deforestation due to sustainable use of wood fuel  (3) Mitigate land degradation and deforestation thereby ensuring a meaningful agricultural use of land vital for sustainable livelihood of the rural population.  The Project is one of the least-cost tools for addressing the social and environmental burdens stemming from wood and charcoal burning as the production of charcoal traditionally occurs in the same area continuously degrading the land with no possibility of recovery and or restoration. Trees will be allowed to stay, soil fertility maintained, conservation attained thus mitigating flood and drought and averting famine and ensuring food security in the long run.  **• Stakeholder engagement: Identification of and consultations with stakeholders.**  *This section is the biggest item on the to-do-list for national adaptation.*  •What partnerships or legal means (appeals, grievance) is in place / necessary to ensure the fundamental rights of the stakeholders?  **Strengthening Stakeholder Rights Through Collaborative Partnerships and Legal Avenues**  *This is the example text for the Swiss-Ghana collaboration. Adapt to a nationally appropriate context!*  *Engaging Online Stakeholder Consultations for Consistent and Informed Consent:*   * *The ClimateGains app serves as a cornerstone for project monitoring, used during stove installations and yearly maintenance checks. Beyond these scheduled events, the app is freely available for stakeholders to provide ongoing feedback and observations.* * *The app's utilization encourages constant communication and systematic feedback from school staff, construction teams, and students. Its user-friendly interface promotes unparalleled accountability and transparency, allowing for the direct verification of data and seamless interaction with beneficiaries throughout the program.* * *An open online platform offers a safe space for stakeholders to anonymously report issues, ensuring grievances can be raised and addressed without concern for retribution.* * *A WhatsApp hotline is set up to report stove malfunctions or damages promptly, facilitating immediate contact with the maintenance crew.*   •Exit strategy: Explain, if applicable, to what extent the activity is expected to transition to a self-sustaining mode after Article 6.2 engagement ceases.  **Exit Strategy: Transitioning to Self-Sustainability Post Article 6.2 Engagement**  *The initiative is not only about installing efficient institutional stoves in schools but also setting a robust foundation for self-sustainability that local actors can build upon. The project targets a complete transition to the use of efficient stoves in all educational institutions by 2030, thereby establishing a new national standard.*  *The strategy includes several key elements:*   * ***Durability and Maintenance:*** *The stoves are designed to last more than ten years with proper maintenance. This longevity is essential for ensuring that the program's benefits continue after the initial Article 6.2 engagement has ended.* * ***Financial Self-Sufficiency:*** *Schools will utilize the savings from reduced fuel wood costs to fund stove maintenance, creating a self-financing cycle. Each school's ability to cover these expenses from their savings reinforces the program's sustainability.* * ***Local Capacity Building:*** *We are committed to equipping local teams with the necessary skills for stove maintenance, ensuring the transfer of knowledge and skills. This capacity building is pivotal to the program's enduring success.* * ***Strategic Partnerships and Research Collaborations:*** *By partnering with local institutions such as universities, the initiative is laying the groundwork for ongoing development and research into the impacts of the program. These collaborations aim to enhance local expertise and foster innovation in sustainable energy solutions.* * ***Continued Relevance and Use:*** *The stoves' design, which emphasizes health, comfort, and ergonomics, ensures they remain a preferred choice for cooking in schools. Our commitment extends to ensuring that these considerations keep the stoves in use well beyond 2030.*   *Through these strategic efforts, the initiative is setting a precedent for continued growth and development of sustainable practices. The aim is to leave a legacy that empowers local institutions and communities to maintain and expand upon the program's achievements.*  *This strategy outlines a clear path for the initiative to maintain its momentum and effectiveness even after the project's direct engagement ends, moving towards a self-sustaining model.* |
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5 Determination, monitoring and reporting of mitigation outcomes

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| **Monitoring Plan Overview**  *The program adopts a standardized crediting framework. We thus adhere to the principles of simplicity, scalability, and minimized transaction costs, leading to a fixed default emissions reduction per meal and a fixed value of meals per student served.*  ***Standardization and Investment Security***   * *Fixed default value for emissions reduction per student enables predictable planning and swift scaling.* * *Stability crucial for investment, given ITMO price volatility in market-based selling.*   ***Data Collection and Verification***   * *Additional data for plausibility checks will be published, impacting ITMO issuance only if major discrepancies arise.* * *Use of cost-effective smartphones for audiovisual monitoring, with data accessible via unique URLs.* * *Exportable data in .CSV and .MP4 formats included in the initial Monitoring Report.* * *Additional content such as interviews and governance documents will be published to ensure transparency.*   ***Monitored Parameters for ITMO Calculation***   1. *Number of students enrolled, differentiated by day and boarding.* 2. *Annual verifiable video proof of stove usage and satisfaction from school cooks.* 3. *Fixed default value of 0.01 tCO2e per board student and 0.05 tCO2e per day student per year.*   ***Baseline and Project Commencement Documentation***   * *Schools submit baseline recordings and interviews for waiting list registration.* * *Start date evidenced by timestamped videos of construction, first use and geolocation verification.*   ***Annual Monitoring Components***   * *Interviews with cooks and headmasters.* * *360° kitchen videos.* * *Maintenance activity recordings.*   ***Plausibility Checks***   * *Aimed at ensuring reported data aligns with expected reductions.* * *Headmasters record firewood purchases for comparison against baseline.* * *Maintenance hotline logs confirm usage rates.* * *Potential use of scales or image interpretation AI to directly measure firewood consumption for data accuracy.*   ***Carbon Leakage and Mitigation Outcome Permanence***   * *Monitoring includes checks against double counting with forestry projects.* * *Focus on project boundaries to prevent unauthorized claims on carbon reductions.*   ***Future Developments***   * *Exploration of partnerships for local tree planting initiatives.* * *Contribution towards the national goal of sustainable wood fuel demand by 2030.* * *Research and Development towards Net Zero kitchen designs.*   ***Data Acquisition for Mitigation Outcomes***   * *Verifiable geolocation and timestamped video documentation via ClimateGains app.* * *Regular feedback from maintenance staff and annual updates on student numbers and firewood purchases.* * *All data will be made public for independent review and academic research support.*   *Project boundaries: The program is national in scope, but limited to the schools land. We are happy to support any academic research efforts into the detailed impact analysis with data and access to video-interviews with our local stakeholders.*  *•Data acquisition: Describe the acquisition of data used to calculate mitigation outcomes.*  *Project Inclusion:*  *All baseline cooking sites (3-stone fires) and all stove installations will be recorded on video with verifiable geolocations and timestamps of the installation through our app.*  *We tested the workflow using WhatsApp to collect the data several times. This improvised approach works fine, but is rather labor intensive on the backend. The primary use of the ClimateGains app is to automate sorting and distribution of the video files in a structured database to allow low-effort oversight over thousands of installations and automatic report generation.*  *We will provide a bridge from WhatsApp in case stakeholders have no other data transfer abilities or fail to install the app.*  *Regular Monitoring:*  *The cooks will record feedback on the stoves and share videos of themselves cooking at least twice per year, including a 360° video shot taken in the kitchen.*  *The stoves will feature a plaque that has a QR code and a phone number for the maintenance hotline for cooks who do not install our app. Tickets for repairs can be opened on that hotline.*  *The student numbers per school and school budget reports on firewood purchases will be acquired from the official source as they become available.*  *All monitoring data will be published for independent reviews as it becomes accessible.* |

6 Institutional Arrangement

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| **Activity Governance**  Describe the governance structure of the Activity, including roles and responsibilities,  management structures, and operational processes.  ***Program Structure and Stakeholder Responsibilities***  ***Roles & Responsibilties***  *Representative Organisation for the School Cooks*  *• Manages stakeholder relations and onboards schools.*  *• Conducts outreach to all schools .*  *• Ensures prompt response to national institutions and recording of necessary videos.*  *• Oversees quality control of technology suppliers*  *Carbon Asset Developer*  *• Handles interactions and formalities with regulators.*  *• Provides financing for the program*  *• Manages carbon asset development, ownership, sales, public- and government relations, software development, stove technology procurement, and provides technical support and guidance.*  *• Maintains the monitoring app.*  *• Contracts and coordinates Technology Providers*  *• Reviews all collected video data.*  *• Generates monitoring reports from the video database.*  *• Manages investor relations to ensure liquidity and maximizes sales revenue.*  *Program Oversight Association*  *• Acts as custodian of project carbon assets and Manages the registry accounts*  *• Provides ethical project oversight and engages with civil society.*  *• Manages Benefit Sharing Mechanism.*  *• Oversees research and development.*  *• Collects and addresses grievances.*  *• Represents all stakeholders, especially labor from construction crews and cooks.*  *Technology Providers*  *• Contracts and trains and directs mason crews*  *• Oversees for installations and maintenance.*  *• Ensures high quality of installations and prompt maintenance service.*  *Operational Processes The program adopts a modular management approach:*  ***1. Program Information Delivery*** *Through the cook association network, schools are informed about the program.*  ***2. Installation Request*** *Schools request stove installations via the ClimateGains app, creating a database entry.*  ***3. Baseline Recording*** *Local actors record current cooking practices, wood fuel expenses, and student numbers.*  ***4. Contractor Appointment*** *Schools appoint contractors for stove construction and maintenance, with new suppliers creating a sample stove for approval.*  ***5. Installation Process*** *Detailed firewood consumption is recorded, and the construction process is documented.*  ***6. Functionality Confirmation*** *Cooks test and train on the new stoves, with the start of the crediting period marked by the first meal prepared.*  ***7. Monitoring and Maintenance*** *Annual video confirmations of stove use are produced by schools.* |

**Financing model for implementing the proposed mitigation activity**

The program will raise carbon finance to pay for all expenses.

1. https://www.nbs.go.tz/nbs/takwimu/references/2020\_Tanzania\_in\_Figure\_Kiswahili1.pdf [↑](#footnote-ref-2)