


GS Pre-Verification report

BASIC INFORMATION

Title and Reference number of the project activity	Title: Efficient & Healthy Cooking in Masaka Diocese Reference Number: N/A
Scale of the project activity	<input type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale <input checked="" type="checkbox"/> Micro-scale
Version number of the report	1.0
Completion date of the report	21/06/2023
Duration of this monitoring period	01/10/2021 – 30/09/2022
Version number of the monitoring report to which this report applies	3.0
Crediting period of the project activity corresponding to this monitoring period	N/A
Project participants	HORIZONT3000
Host Party	Uganda
Applied methodologies and standardized baselines	The Gold Standard Simplified Methodology for Efficient Cookstoves, v1.1 Standardized baseline(s): N/A
Mandatory sectoral scopes	3
Conditional sectoral scopes, if applicable	-
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	3,833 tCO _{2e}
Certified amount of GHG emission reductions or GHG removals for this monitoring period	4,104 tCO _{2e}
Name of the VVB	TÜV NORD CERT GmbH
Name and signature of the approver of the report	Christina Stöhr Approver: 

SECTION A. Executive summary

Introduction

TÜV NORD CERT GmbH. (hereafter referred to as TÜV NORD) has been contracted by HORIZONT3000 to perform a GS pre-verification of “Efficient & Healthy Cooking in Masaka Diocese, applying the GS methodology ‘Gold Standard Simplified Methodology for Efficient Cookstoves v1.1’ .

The management of Caritas - Masaka Diocesan Development Organization (MADDO) is responsible for development, implementation, monitoring, and reporting of the GHG emissions data and the reported GHG emission reductions.

A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. TÜV NORD confirms the following have been reviewed:

- a. The latest PDD including the monitoring plan;
- b. Monitoring report;
- c. The applied monitoring methodology;
- d. Relevant decisions, clarifications and guidance from the CMP and GS;
- e. GS4GG guideline and related Annex.
- f. All information and references relevant to the project activity’s resulting in emission reductions.

The proposed project activity aims to replace the commonly used three-stone fires or broken Lorena Stoves with an efficient Brick Rocket stove in rural and suburban households in 6 districts of the Masaka Dioceses (Masaka, Bukomansimbi, Kyotera, Rakai, Kalungu and Lwengo) in southwestern Uganda. The fixed project stoves are built at a subsidized price to interested families who are trained in its proper use.

The current monitoring period is from 01/10/2021 to 30/09/2022. The monitoring of emission reduction and sustainable development indicators has been carried out in accordance the latest PDD by Klima-Kollekte. The project is not registered with GS yet. Therefore no GS-approved PDD is available at the time of this pre-verification.

Objective

The objective of the verification work is to assess the compliance with the GS4GG Principles and Requirements and relevant guidelines. According to this assessment TÜV NORD shall:

- Ensure that the project activity has been implemented and operated as per the latest PDD by Klima-Kollekte and that all physical features (technology, project equipment, monitoring and equipment) of the project are in place;
- Ensure that the MR and other supporting documents provided are complete, verifiable and in accordance with applicable GS4GG requirements;
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan;
- Evaluate the data recorded and stored as per the monitoring plan.

Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report and PDD. These documents are reviewed against the GS4GG guideline and relevant Principles and Requirements, as well as their related rules and guidance.

The principles of accuracy, completeness, relevance, reliability, and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions. The verification also considers the monitoring of SDG goals as per the requirement of GS4GG guideline.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

Table A-1: Project Location

No.	Project Location
Host Country	Republic of Uganda
Region:	6 districts of Masaka
Project location	Masaka, Bukomansimbi, Kyotera, Rakai, Kalungu and Lwengo
Masaka Diocese coordinates	
Latitude:	-0.328891
Longitude:	31.762126

SECTION B. Verification team, technical reviewer and approver

Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- A desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents with the use of verification protocol ^{/CPM/} according to the Validation and Verification Standard ^{/VVS/} and additional GS4GG requirements^{/GS/},
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting,
- Resolution of corrective actions (if any),
- Final verification reporting,
- Technical review,
- Final approval of the verification.

Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM and GS accreditation requirements

a contract review was carried out before the contract was signed.

Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader was appointed.

The list of involved personnel, the tasks assigned, and the qualification status are summarized in sections B.1 and B.2 below.

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader & Technical Expert	EI	Lubanga	David	-	x	x	x	x
2.	Observer	EI	Wesonga	Bonface	-	x			x

B.2. Technical reviewer and approver of the report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Winter	Stefan	TÜV NORD CERT GmbH
2.	Technical reviewer / Approver	IR	Stöhr	Christina	TÜV NORD CERT GmbH

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in conducting and get the result from surveys and test.	Low	The PP has established a monitoring system and installed trained technical staffs, field team and Project coordinator are trained to be responsible for conducting surveys, spot-checks and data aggregating, recording in the kobo system. PP also established the QA/QC procedure to ensure the veracity and validity of the monitoring procedure and monitoring records. In summary, the risk level is low.	The VVB will crosscheck the results by acceptance sampling approach and check against previous verifications.
2.	Error in transferring/typing the data to system.	Medium	The data was typed into database. Error may occur.	The VVB will crosscheck by acceptance sampling approach against the original records. VT used the duplicate function to check for more than one entries.

C.2. Consideration of materiality in conducting the verification

In accordance with Para.326 e) of the CDM VVS-PA Version 03.0, the applicable materiality threshold is 5%.

Particulars / Monitoring Report	MR Version (draft)	MR Version (Final)
Emission reductions achieved (tCO ₂ e) in this monitoring period	4,104	4,104
Identified Threshold (%) as per Para.326 of CDM VVS-PA Version 03.0	10% (410.4 tCO ₂ e)	10% (410.4 tCO ₂ e)

The sampling approach and the calculations are checked by the assessment team with available evidences. Since most of the data is confirmed through ex-post monitoring survey conducted by the PP, the verification

team has crosschecked the ex-post survey data by applying sampling approach. And the ex-ante parameters were also checked against the PDD. There was no gap identified in the values of ex-ante parameters.

After closing out the findings raised in Annex 4 of the report, the verification team confirms that the claimed emission reductions or removals are free from material errors, omissions, or misstatements, with a reasonable level of assurance.

SECTION D. Means of verification

D.1. Desk/document review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the PDD including the monitoring plan^{/PDD/},
- the monitoring report for this monitoring period, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/ER/}.
- the installation database^{/db/}.

Other supporting documents, such as the database and background information were also reviewed.

On-site assessment / using Other Means of Verification

As most essential part of the verification exercise, it is indispensable to carry out an inspection on site to verify that the project is implemented in accordance with the applicable criteria and the registered PDD. Furthermore, the on-site assessment is necessary to check the monitoring data with respect to accuracy of the calculation of emission reductions. Changes to the key SDG Impact indicators and the achievement and implementation of mitigation / compensation measures are other integral parts of the on-site assessment.

The main tasks covered during the on-site site visit include, but are not limited to:

- an investigation of whether all relevant equipment is installed and works as anticipated.
- The project staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data and monitoring/usage survey data were checked.
- The data aggregation trails were checked via spot sample down to the level of the data generation.
- Competency check of the ground personnel who conducts the Usage / Kitchen survey.
- Appropriateness of the data collection, sampling and reliability test for the monitored sampling parameter.
- Possibility of leakage emissions were also checked.

During on-site visit, the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of the MADDO including the operational staff of the project, Monitoring and evaluation team, leadership team of MADDO and end users were interviewed. The main topics of the interviews are summarized in Section C.2/C.3 below.

D.2. On-site inspection

Duration of on-site inspection: 13/02/2023 to 14/02/2023				
No.	Activity performed on-site	Site location	Date	Team member
1.	Kick off meeting	Masaka	13/02/2023	David Lubanga
2.	Visiting of a random sample of end users			
3.	Visiting of a random sample of end users	Masaka	14/02/2023	
4.	Final Meeting			

D.3. Interviews

No.	Interviewee			Date	Subject	Team member	
	Last name	First name	Affiliation				
1.	Mukasa	Josephine	Project Coordinator (C. MADD0)	13/02/2023	History, project stove design, objectives, payment process, subsidy, eligibility, data integrity, LSC Process, baseline survey, monitoring survey, pilot phase, trainings, grievance mechanism	David Lubanga	
2.	Zenk	Georg	Technical Adviser (C. MADD0)				Stove technical details: Efficiency, kobo software
3.	Bombo	Henry	M&E (C. MADD0)				Monitoring
4.	Ssembatia	Innocent	Field Officer (C. MADD0)		Data monitoring, collection, reporting, aggregation, storage		
5.	Kasule	Catheirne	C. MADD0				
6.	Waswa	John	C. MADD0				
7.	Warigo	Cyrus	Field Officer (C. MADD0)				
8.	Mulindwa	Joseph	Field Officer (C. MADD0)				
9.	Byedanje	Caroline	Field Officer (C. MADD0)				
10.	Mirembe	Teopista	Procurement/Logistics (C. MADD0)				
11.	Kayitesi	Susan	Field Officer (C. MADD0)				
12.	Nasiimbwe	Jane	ICS number: 807				
13.	Namatovu	Immaculate	ICS number: 809				
14.	Kizza	Josephine	ICS number: 597				
15.	Katana	Stellah	ICS number: 699				
16.	Lutaaya	Joseph	ICS number: 421				
17.	Bakka	Godfrey	ICS number: 004				
18.	Nanziri	Francisca	ICS number: 290		14/02/2023		Baseline stove, baseline fuel, ICS cost, ICS benefits, continued use of baseline stove, HH size, frequency of use, if monitoring survey was carried out
19.	Kasendwa	Immaculate	ICS number: 0054				
20.	Nambejja	Angela	ICS number: 1010				

D.4. Sampling approach

C.4.1 Sampling during monitoring

<input type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):				
Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size	
U _y	SS	PS	1,149	123	
DF _{b,Stove,y}	SS	PS	1,149	123	
SDG 3 (indicator 3.9)	SS	PS	1,149	123	

¹⁾ Sampling Approaches:

- SiRS: Simple Random Sampling
- StRS: Stratified Random Sampling
- SS: Systematic Sampling
- CS: Cluster Sampling

MSS: Multi-stage Sampling

²⁾ Sampling Types:

PS: Parameter Sampling

C.4.2 Sampling approaches during verification

<input type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size
	U _y	SiRS	AS	123	8
	DF _{b,Stove,y}	SiRS	AS	123	8
	SDG 3 (indicator 3.9)	SiRS	AS	123	8

¹⁾ Sampling Approaches:

SiRS: Simple Random Sampling

StRS: Stratified Random Sampling

SS: Systematic Sampling

CS: Cluster Sampling

MSS: Multi-stage Sampling

²⁾ Sampling Types:

AS: Acceptance Sampling

PS: Parameter Sampling

COM: Full data check at higher data aggregation levels and sampling at original data levels

1) Verifier's Action

Acceptance sampling

A site visit by the VVB was carried out from 13/02/2023 to 14/02/2023.

The following were the main objectives: -

- An assessment of the implementation and operation of the proposed project activity as per the latest PDD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the latest monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources;
- A check of the monitoring equipment, including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.
- Verifiers procedure for Simple random sampling of onsite records & acceptance sampling

For determining the authenticity of the reported usage rate during the monitoring period (U_{P,y}) reported for this monitoring period in the monitoring reports, the verifier determined that acceptance sampling was the most ideal and practical approach.

The VVB sampled 9 households that participated in the monitoring survey. The VVB team ensured that it interviewed users who were part of the usage survey but also the other parameters determined via a sampling approach.

The verification team followed the “Standard for Sampling and Surveys for Gold Standard Voluntary Project Activities and Programme Activities” v9.0, para 29 to 32 for taking samples out of the PP’s sample.

Due to the large number of installations, the verification team has adopted the acceptance sampling approach (AS) in accordance with § 29, 30, 31 to 32 of the Sampling Standard. The verification team invoked provisions of the para 32 of the applied standard to apply the producer risk and consumer risk as below:

Considering Uganda as an LDC, the verification team considered an AQL 1% and UQL 20%, Producer risk of 10% and consumer risk of 20% for determination of the sample size for site assessment. Considering the above § under applied sampling standard, the VVB should verify 8 samples under this approach with acceptance (c) number 0. The verification team has verified total of 9 sampled end users from the PP’s samples to further verify the project implementation on the ground across the entire vintages under crediting during current monitoring period. Project usage survey samples were randomly selected from PP samples. The sampled end users and other documentary evidences demonstrating implementation of the project in Masaka, Uganda.

The list of the end users verified through physical site inspections is presented under section above. During the onsite assessment, the verification team selected the following approach: From the observations / results from 9 verified ICSs, the following could be confirmed:

1. The usage rate of the technologies in households and institutions;
2. Living conditions with regards to hygiene;
3. Reduce usage of biomass, mainly wood fuel;
4. SDG aspect as per the validated project documents;
5. The pre-project scenario
6. The HH approximate dates of installations

AQL	0.5%
UQL	20%
Producer risk	10%
Consumer risk	20%
Sample size	8
Acceptance Number	0
Total samples covered	9

No PP sampling-based monitoring records/data results were found discrepant during the VVB verification physical site audit. All 9 verified samples visited and interviewed were found to be in good working order.

Further, the verification team reviewed all the primary monitoring records during site visit audit assessment to assess the consistency of information with ER calculation spreadsheet and found the monitoring data to be correctly transcribed into the ER sheet and MR. Based on that, the team concludes that sampling results and values presented by the PP in the MR and ER calculation spread sheet and results of survey and WBT are consistent with the onsite observation and interview with the end users.

The details of the sampled users assessed to confirm the project implementation and other monitoring aspects are presented in this report.

A summary of interview questions and feedback received are presented in the below table:

Questions for households on site	Summary of feedback
Date of acquisition (mainly year)	As per user agreement
Telephone contact	-
Cost	Variable
Family Size (Number of people in the household)	Variable
Performance	Pleased with the respective filters for HHs and institutions
Whether surveys were conducted (if applicable – part of the sample)	Confirmed accordingly
Benefits	Reduction in costs of firewood, reduction or elimination of diseases
Baseline practices (fuel and technology)	Boiling using firewood
Frequency of use	Pleased

Questions for households on site	Summary of feedback
Amount of fuelwood consumed	Variable
Overall impression	Pleased

From the defined processes and procedures including the sampling plan in the MR, the verification team has determined that the report provides sufficient information without errors or omissions and commissions that would warrant a revision of the same.

Conclusion

For the parameters determined ex-post through sampling, the VT can confirm that the surveys were conducted in line with the registered monitoring plan in the PDD. The sampling efforts were undertaken in accordance with the “*Standard: Sampling and surveys for CDM project activities and programme of activities*” version 9.0, and the GS “*Guidelines for carrying out usage surveys for projects implementing household water filtration technologies*”, so that the presented results are confirmed with a reasonable level of confidence.

Draft verification reporting

On the basis of the desk review, site visit, follow-up interviews and further background investigation, the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification, refer chapter 4.

Final reporting

Upon successful closure of all raised CARs and CLs the final pre-verification report including a positive pre-verification opinion is issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

Technical review

Before submission of the final report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision-making process up to the technical review.

As a result of the technical review process, the verification opinion and the topic specific assessments, as prepared by the verification team leader, may be confirmed or revised. Furthermore, reporting improvements might be achieved.

Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification is carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the verification team submits the verification report including the verification opinion to the client via e-mail.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	0	0	0
Compliance of the project implementation and operation with the registered PDD	0	0	0
Post-registration changes	0	0	0
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	3	0	0
Compliance of monitoring activities with the registered monitoring plan	0	0	0
Compliance with the calibration frequency requirements for measuring instruments	0	0	0
Assessment of data and calculation of emission reductions or net removals	0	2	0
Assessment of reported sustainable development co-benefits	0	0	0
Global stakeholder consultation	0	0	0
Others (please specify)	0	0	0
Total	03	02	00

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	<p>By means of the GS website it has been checked whether the latest applicable MR template has been used.</p> <p>Further it has been checked whether the latest instructions for filling out the MR template have been followed. Every section has been checked against the respective guidance.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /MRT/ • /gs/ 	
Findings	<input type="checkbox"/>	The latest reporting template has been applied.
	<input type="checkbox"/>	The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification.
	<input type="checkbox"/>	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:
Conclusion	<input checked="" type="checkbox"/>	No CARs / CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs / CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 3.
	The verification team has checked the MR. As this is a pre-verification, the MR has been altered. Anyhow by means of comparing the MR that has been used with the	

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

Not applicable

E.4.2. Corrections

Not applicable

E.4.3. Changes to the start date of the crediting period

Not applicable

E.4.4. Inclusion of a monitoring plan

Not applicable

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable

E.4.6. Changes to the project design

Not applicable

E.4.7. Changes specific to afforestation and reforestation project activities

Not applicable

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	<p>The VVB team checked the draft MR against the latest PDD to ensure that fixed and monitored carbon and SDG parameters have been adequately monitored. The details are in Section E.6.1 and E.6.2 of this document respectively.</p> <p>Sampling approach Parameters estimated via sampling as described in Section B.5.2 include the usage rate (U_y), the discount factor to account for baseline stove use ($DF_{b,Stove,y}$), and the SDG 3.9. Both parameters are measured annually as per the requirements of the latest monitoring plan via Monitoring Survey by C. MADD0.</p> <p>As per the requirements of the methodology, a minimum sample of 65 was calculated based on stoves in age group 1 and 60 based on stoves in age group 2. However, 64 stoves and 59 end users were survey fulfilling the minimum requirements of 100 for a target project population of more than 1000.</p>
Findings	CL 01, CL 02, CL 03
Conclusion	The VT can confirm that all fixed and monitored parameters are estimated correctly. Verification findings raised have been sufficiently resolved

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	<p>The verification team has checked the ex-ante parameters and data stated in Section D.1 of MR and compared with the Section B.6.2 of latest PDD whether all parameters fixed ex-ante for the crediting period have been applied correctly.</p> <p>The following parameters have been fixed at validation or at renewal of crediting</p>
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¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

	period:			
	Parameter	Value	Unit	Justification
	EF _{b,fuel,CO2}	1.747	tCO ₂ /ton firewood	Verification Team (VT) has reviewed MR and crosschecked the default value of the parameter against the value in the latest PDD, applied methodology and ER spreadsheet. VT confirms that the value is correctly applied in the ER formula, both in the MR and ER spreadsheet and hence verified.
	EF _{b,fuel,non-CO2}	0.530	tCO ₂ /ton firewood	Since the value is a default for the parameter, VT has compared the value applied in MR against that in applied methodology, PDD and ER formula in the ER spreadsheet. The VT confirms that the value applied is correct and has been accurately used in the appropriate formula, both in the MR and the ER spreadsheet. VT thus opines that the value is correct and verified.
	fNRB	0.88	Fraction	VT reviewed MR, PDD and ER spreadsheet calculation' tab and confirmed that the value is consistent and has been appropriately applied.
	η _b	0.10	Fraction	VT has reviewed the MR and crosschecked the value applied against that in ER Calculations and confirms that the value is consistent and has been correctly applied and thus appropriate. During the site visit, all interviewed end-users confirmed that their pre-project stove was three-stone fire with firewood as fuel. Therefore, the efficiency value is appropriately justified
	η _p	Age 1: 28.75 Age 2: 28.75	%	The efficiency of the project stove was tested by an accredited third-party Centre for Research in Energy (CREEC). The certificate is included in the MR and confirms that CREEC is accredited in the host country. The value is the average of the two fire chambers as tested (30.0% and 27.50%) and applied correctly in the final VER calculations. VT has reviewed the MR and crosschecked the values applied against that in ER Calculations and confirms that the values are consistent and has been correctly applied and thus appropriate.
B _{b,y}	4	t/hh/year	VT has checked and confirmed that the parameter value is calculated correctly with credible and reliable publicly available historical data as referenced in the spreadsheet. The same is applied in MR correctly with that in PDD and ER Calculations sheet and has been correctly applied. This is in line with Section 4.2 a) of the applied methodology.	
The following sources of information have been used in this context:				
<ul style="list-style-type: none"> • /MR/ • /PDD/ 				
Findings	<input type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante for the crediting period correctly, no deviations have been observed.		
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification:		
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:		
Conclusion	<input type="checkbox"/>	No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input checked="" type="checkbox"/>	Most of the raised CARs / CLs have been addressed appropriately.		
	The data and parameters listed in the section D.1 of the MR were cross-checked with the applied methodology, and the latest PDD.			

E.6.2. Data and parameters monitored:

Means of verification	During the verification all relevant monitoring parameters listed in Section D.2 of
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the MR and Section B.7.1 of latest PDD have been verified with regard to the

- (i) appropriateness of the applied measurement / determination method,
- (ii) the correctness and accuracy of the values applied for ER calculation,
- (iii) applied QA/QC measures.

The results as well as the verification procedure are described parameter-wise in the table below: -

Parameter	Value	Unit	Assessment
N_y	593 (age group 1) 556 (age group 2)		Verification Team has checked the project database to ascertain that the values included in the MR is accurate and consistent with the ER spreadsheet. The team confirms that the values applied in MR is correctly featured in the tab 'Data' of the 'Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec22'spreadsheet.
U_y	99	%	Verification Team has reviewed MR and cross-checked the parameter value reported in MR, against that in the Data' tab of the 'Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec22'spreadsheet. Further, the team has confirmed that the sampling plan outlined in the latest PDD has been accurately followed such that the sample size adopted lies within the required range and has been selected using simple random sampling using Excel randomizer for both age groups and regions have been considered. The minimum sample was reached and therefore the value is correctly estimated
$DF\eta$	0.99	Fraction	VT has checked MR and crosschecked the value reported in MR against the value in the 'tab 'Data' of the 'Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec22'spreadsheet and the applied methodology, for correctness and consistence. VT confirms that the value applied is consistent and correct, as per the applied methodology and thus justified. The stoves are being credited in year 2 and hence, the equation in the spreadsheet is consistent with equation 3 in the methodology
$DF_{p,Stove,y}$	0.1 (age group 1) 0.06 (age group 2)	Fraction	The sampling plan for this parameter has been accurately followed as the sample size of 125 in Sample selection tab of monitoring survey Export and Summary spreadsheet has been randomly selected by simple random sampling Excel randomizer and meets the requirements of the applied methodology and the sampling plan. outlined in the latest PDD, as checked by Verification Team. Since the annual monitoring survey has been appropriately undertaken and calculations correctly done, the value of the parameter is accurate and conservative and justified.

The following sources of information have been used in this context:

- /MR/
- /PDD/
- /ER/

Findings	CL 01, CL 02, CL 03
Conclusion	<input type="checkbox"/> No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/> The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 3.
After appropriate corrections were carried out it could be concluded that all monitoring parameters have been measured / determined without material misstatements and in line with the PDD	

E.6.3. Implementation of sampling plan

Means of verification	<p>The verification team has checked the sampling plan and considered appropriate for the monitoring surveys done to the relevant parameters and as per the PDD.</p> <p>Sampling Approach: The sampling approach used adheres to the monitoring requirements of the applied methodology 'Gold Standard Simplified Methodology for Efficient Cookstoves (Version 1.1)</p> <p>Sampling Methodology: Monitoring Survey: The monitoring survey was carried out annually as per the monitoring plan. The PP asked the relevant questions to assess the usage rate, frequency of use of the baseline stove, and health impacts (SDG 3.9) Monitoring Survey: The survey (done annually) was conducted between 10/02/2022 to 17/03/2022.</p>
Findings	CL 02, CL 03
Conclusion	The sampling plan adheres to the latest PDD.

E.7. Assessment of data and calculation of emission reductions or net removals

E.7.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	<p>The baseline emissions are derived from the calculation of ERs below.</p> <p>The overall formular for calculating ER is derived from equation 1 of the applied methodology as follows:-</p> $ER_y = \sum N_y * P_y * U_y * (f_{NRB} * EF_{fuel,CO2} + EF_{fuel, nonCO2}) * (1 - DF_{p,Stove,y})$ <p>Sample calculation for Age group 1: $ER_y = 593 * 2.505 \text{ t/HH} * 0.99 * (0.88 * 1.747 \text{ tCO}_2/\text{t} + 0.53 \text{ tCO}_2/\text{t}) * (1 - 0.1)$ $= 2736 \text{ tCO}_2$</p> <p>Where:</p> <p>N_y: Number of project cookstoves operational in year y P_y: Quantity of firewood saved in year y (tonnes per household and year) U_y: Usage rate for project cookstoves in year y f_{NRB}: Fraction of biomass used in the baseline scenario which can be established as non-renewable. $EF_{b,fuel,CO2}$: CO₂ emission factor of firewood that is reduced. $EF_{b,fuel,non-CO2}$: Non-CO₂ emission factor of firewood that is reduced. $DF_{p,Stove,y}$: Discount factor to account for the baseline stove use. Preliminary value: 95%.</p> <p>The quantity of firewood saved is calculated by applying formula 2 of the GS simplified methodology:</p> $P_y = B_{b,y} * (1 - \eta_b / \eta_{p,y})$ <p>Where:</p> <p>$B_{b,y}$: Quantity of firewood consumed in baseline scenario in year y. η_b: Efficiency of baseline cookstove in year y. Default value 10% (see B.3) $\eta_{p,y}$: Efficiency of project cookstove in year y.</p>
Findings	N/A
Conclusion	The equation is derived from equation 1 of the methodology and correctly applied in the calculations

E.7.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	As per the applied GS methodology, 'if the baseline cookstove remains in use in parallel with the project cookstove, corresponding emissions must of course be accounted for as part of the project emissions. Accordingly the parameter $DF_{p,Stove,y}$ has been monitored and the values applied to discount any possible project emissions. Therefore, project emissions are not calculated separately.
Findings	Not applicable
Conclusion	Not applicable

E.7.3. Calculation of leakage GHG emissions

Means of verification	As per Section 5 of the applied methodology, 'leakage related to non-renewable biomass saved by the project activity is not considered for micro-scale project activities'.
Findings	Not applicable
Conclusion	Not applicable

E.7.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	As per Section E.7.1
Findings	
Conclusion	

E.7.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The emission reductions estimated per stove ($ER_{y,stove}$) in the PDD are 4.95t/year. However, in the project case, the same is 4.64 t/stove/year for age group 1, and 4.85 t/stove/year for age group 2. Further, the project stove efficiency in the PDD is 28.75%, whereas the same is 27.50% in the project case as per the CREEC report. The PDD also assumed 100% usage rate against 99% estimated in the project case
Findings	CAR 01
Conclusion	The variations in the ex-ante and ex-post values are deemed to be reasonable.

E.7.6. Remarks on difference from estimated value in registered PDD

Means of verification	As per Section E.7.5 above
Findings	
Conclusion	

E.8. Assessment of reported SDGs

Means of verification	<p>During the verification all relevant monitoring parameters listed in Section C.2 of the MR and Section B.4.2 of latest PDD have been verified with regard to the</p> <ul style="list-style-type: none"> (iv) appropriateness of the applied measurement / determination method, (v) the correctness and accuracy of the values applied for ER calculation, (vi) applied QA/QC measures. <p>The results as well as the verification procedure are described parameter-wise in the table below:-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">SDG</th> <th style="width: 20%;">Value</th> <th style="width: 15%;">Unit</th> <th style="width: 50%;">Justification</th> </tr> </thead> <tbody> <tr> <td>SDG 3.9</td> <td>1,115</td> <td></td> <td> <p>This is the 'number of households reporting improved indoor air quality due to smoke reduction through the improved cookstove.'</p> <p>From the sample drawn from both age groups 97% out of the 1149 installed ICSs reported positive improvement in indoor air quality. VT has reviewed the MR and confirms that the monitoring plan for monitoring the parameter and determined that plan has been followed in line with the latest PDD.</p> </td> </tr> </tbody> </table>				SDG	Value	Unit	Justification	SDG 3.9	1,115		<p>This is the 'number of households reporting improved indoor air quality due to smoke reduction through the improved cookstove.'</p> <p>From the sample drawn from both age groups 97% out of the 1149 installed ICSs reported positive improvement in indoor air quality. VT has reviewed the MR and confirms that the monitoring plan for monitoring the parameter and determined that plan has been followed in line with the latest PDD.</p>
SDG	Value	Unit	Justification									
SDG 3.9	1,115		<p>This is the 'number of households reporting improved indoor air quality due to smoke reduction through the improved cookstove.'</p> <p>From the sample drawn from both age groups 97% out of the 1149 installed ICSs reported positive improvement in indoor air quality. VT has reviewed the MR and confirms that the monitoring plan for monitoring the parameter and determined that plan has been followed in line with the latest PDD.</p>									

	SDG 7.1	1,149		<p>This is the '<i>number of installed improved cookstoves, installed and considered during the monitoring period.</i>'</p> <p>The VT checked the project database and compared the value of the parameter with that in the MR. The VT has checked for correctness of data, possible duplicate records or other errors. The value can be confirmed to be correct</p>												
	SDG 13.3	4,104	tCO ₂ e	<p>This is the calculated '<i>amount of CO₂ emissions reduced by the project.</i>'</p> <p>The value is based on the fixed and monitored values as validated and verified for the monitoring period under review. The verification team reviewed the MR and crosschecked the value against the ER sheet and confirms that the value is consistent and correct due to accurately applied relevant formulas and calculations as specified in the applied methodology.</p>												
<p>Comparison of the actual values against the estimated ones:</p>																
<table border="1"> <thead> <tr> <th>SDG \ value</th> <th>Ex-ante value</th> <th>Monitored value</th> </tr> </thead> <tbody> <tr> <td>SDG 13 (ER_y)</td> <td>3,833 t CO₂e</td> <td>4,104 tCO₂e</td> </tr> <tr> <td>SDG 7 (no. of ICS)</td> <td>1900</td> <td>1149</td> </tr> <tr> <td>SDG 3 (no. of HH)</td> <td>1560</td> <td>1115</td> </tr> </tbody> </table>					SDG \ value	Ex-ante value	Monitored value	SDG 13 (ER _y)	3,833 t CO ₂ e	4,104 tCO ₂ e	SDG 7 (no. of ICS)	1900	1149	SDG 3 (no. of HH)	1560	1115
SDG \ value	Ex-ante value	Monitored value														
SDG 13 (ER _y)	3,833 t CO ₂ e	4,104 tCO ₂ e														
SDG 7 (no. of ICS)	1900	1149														
SDG 3 (no. of HH)	1560	1115														
<p>The monitored values of SDG 7 and SDG 3 are lower during this monitoring period than the ex-ante values from the PDD.</p> <p>For SDG 13, the ex-post value was higher despite the average emission reductions per stove in both ages being slightly lower. The reason is mainly due to higher sales of the ICS than was initially foreseen.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /PDD/ • /ER/ 																
Findings																
Conclusion																
<input type="checkbox"/> No CARs / CLs / FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.																
<input checked="" type="checkbox"/> The raised CARs / CLs / FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details, please refer to Appendix 3.																
<p>After appropriate corrections were carried out by the VPA Implementer it could be concluded that all monitoring parameters have been measured / determined without material misstatements and in line with the PDD.</p>																

SECTION F. Internal quality control

Before the submission of the final report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision-making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore, reporting improvements might have been achieved.

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the submission for requesting for issuance is conducted.

SECTION G. Verification opinion

HORIZONTAL3000 has commissioned the TÜV NORD JI/CDM Certification Program to carry out the Gold Standard pre-verification of the project: “Efficient & Healthy Cooking in Masaka Diocese”, with regard to the relevant requirements for GS project activities. The project activity enables rural, peri-urban and urban households in Masaka Diocese to access affordable improved cookstoves as alternatives to the traditional three-stone fire or broken Lorena stove thereby reducing the demand and consumption of non-renewable biomass (firewood). Thus, the project contributes to sustainable development.

This verification covers the period from 01/10/2021 to 30/09/2022, including both days.

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the project design document.
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring report is widely in accordance with the relevant GS requirements.
- the project contributes to sustainability development.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

TÜV NORD JI/CDM CP further confirms that the project would have achieved emission reductions in the above-mentioned reporting period as follows:

Emission reductions: **4,104 tCO₂e**

SECTION H. Certification statement

As a duly accredited UN and GS-VVB, TÜV NORD CERT confirms that the project “**Efficient & Healthy Cooking in Masaka Diocese**” would have achieved emission reductions during the current monitoring period

MP-No.: 1
from: 01/10/2021
to: 30/09/2022

(Including both days) as follows:

Emission reductions: **4,104 tCO₂e**

David Lubanga



Team Leader
Nairobi, 21/06/2023

Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating/Managing Entity
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide Equivalent
CP	Crediting Period
DNA	Designated National Authority
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
SDG	Sustainable Development Goal
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVB	Validation and Verification Body
VVS	CDM Validation and Verification Standard

Appendix 2. Competence of team members



Statement of Competence
 Appointment and authorization according to the procedures
 of the TUV NORD JvCDM Certification Program

Mr. David Lubanga

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor Technical Reviewer Host Country Expert (Kenya, Uganda, Rwanda, Tanzania, Burundi, Mali, Nigeria Ethiopia, Malawi, Ghana)	2025-09-30
	Senior Assessor Technical Reviewer Host Country Expert (Kenya, Uganda, Rwanda, Tanzania, Burundi, Mali, Nigeria Ethiopia, Malawi, Ghana)	

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand
13.2	Manure

251 - Rev. 12, Date: 2023-06-15

Appendix 3. Documents reviewed or referenced

Table 0-2: Documents provided by the project participant(s)

No.	Author	Title	References to the document	Provider
1.	PP	Efficient & Healthy Cooking in Masaka Diocese, v7.0	/PDD/	PP
2.	PP	Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec22_rev 10mar2023	/ER/	PP
3.	PP	<ul style="list-style-type: none"> • Efficient & Healthy Cooking in Masaka Diocese, version 01.0 • Efficient & Healthy Cooking in Masaka Diocese, version 02.0 • Efficient & Healthy Cooking in Masaka Diocese, version 03.0 	/MR/	PP
4.	PP	Monitoring survey Export and Summary 05dec22-3-rev 10mar2023	/DB/	PP
5.	CREEC	CREEC Efficiency Certificate/Report	/WBT/	PP
6.	PP	MADDO_Carbon_Project_monitoring_survey 2023 Monitoring survey Export and Summary 05dec22-3-rev 10mar2023	/XLS/	PP
7.	PP	First stove receipt and agreement	/FSC/	PP

Table 0-3: Background investigation and assessment documents

Reference	Document
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GSGWP/	The Application of Global Warming Potentials for Gold Standard Project Activities
/GS/	GS4GG Requirements and Rules
/GSM/	Gold Standard Simplified Methodology for Efficient Cookstoves (Version 1.1, April 2020)
/GSS/	Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities, EB 69, Annex 5
/GST/	GS4GG Requirements
/IPCC/	Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories: <ol style="list-style-type: none"> 1. Non-CO₂ Stationery Combustion 2. Emissions from Livestock and Manure Management (Chapter 10) 3. IPCC Second Assessment Report – Climate Change 1995: A Report of the Intergovernmental Panel on Climate Change
/PS/	UNFCCC CDM Project Standard Version 03.0
/SSS/	Standard for Sampling and Surveys for CDM Project Activities and Programme Of Activities, EB 69, Annex 4
/VAL/	Not applicable
/VVS/	UNFCCC CDM Validation and Verification Standard (Version 03)

Table 0-4: Websites used

Reference	Link	Organisation
/GS/	http://www.goldstandard.org/	Gold Standard
/unfccc/	http://cdm.unfccc.int	UNFCCC
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 5. Remaining FAR from validation and/or previous verifications

CL ID	01	Section no.	C.1	Date: 22/01/2023
Description of CL				
MR version 1.0, Section C.1				
<ol style="list-style-type: none"> Start date of VER estimation: The PP is required to clarify when the first stove was installed, and furnish the Verification Team (VT) with appropriate evidence Ny: the MR shall indicate vintage-wise installations from the project start to the end of this monitoring period. Further, the total number of project stove installations is not consistent with the provided list Uy: the MR shall include actual monitored values applied in the calculations of ex-post VERs, consistent with the monitoring survey/report DF_η: This is a fixed parameter as per the applied GS methodology. However, if the stoves are not in good condition, the PP shall justify application of the factor 0.98 				
Project participant response (1st round)				Date: 10/03/2023
<ol style="list-style-type: none"> First stove was installed on 20. December 2019. Crediting starts on 1. October 2020. Ny: In the spreadsheet 'Monitoring survey Export and Summary 05dec22-3-rev 10mar2023' the sheet 'Extract sales database' as titled as 'Export from Carbon Sales Database on 2022/10/07' includes all constructions up to the date of 7. October 2022 but not all information/columns of the database like sales data and measurements. The sheet 'Extract +7 and age groups' contains the same data of constructions but sorted into age groups plus 21 constructed stoves which have been not in use up to the end of September 2022. In summary: 'Extract sales database' no. 1170 = 'Extract +7 and age groups' 593+556+21. Uy: By coincidence, the actual monitored values are the same as the estimated values. Refer to spreadsheet 'Monitoring survey Export and Summary 05dec22-3-rev 10mar2023'; sheet 'Dashboard _age groups'. DF_η: Erroneously used the term (DF_η)_{y-1} instead of DF_η. Y is per definition of the applied methodology the 'Year of the crediting period' which is 2. The factor is corrected in the calculation. 				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): C.1	New version No.: 2.0	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
VVB assessment (1st round)				Date: 27/03/2023

MR version 2.0, C	
<ol style="list-style-type: none"> The date of first stove installation has been clarified as 20/12/2019. However, no appropriate evidence is furnished to the verification team. The parameter table for N_y has been revised with age groups 1 and age group 2. It is indicated that 1,149 have been installed, consistent with the database, excluding 21 units. The PP shall explain the reasons for the 21 non-use, and if they are considered in the parameter U_y or excluded completely. Usage rate U_y has been determined to be 99% for both age-groups (vintages). The same was confirmed during the physical site visit (onsite) The value of DF_n has been correctly applied in line with the methodology 	
Project participant response (2nd round)	
Date: 10/03/2023	
<ol style="list-style-type: none"> The stove user contract with construction date 20/12/2019 and user ID 001 is attached. The 21 are excluded completely. Those are stove installed after the end of the monitoring period minus 7 days. They were not deleted in order to be consistent with the sales database online and the copy taken which was on 7th October 2022. 	
Documentation provided by project participant (2nd round)	
<input type="checkbox"/> Changes in the PoA-DD	Section(s):
<input type="checkbox"/> Changes in the CPA-DD	Section(s):
<input checked="" type="checkbox"/> Changes in MR	Section(s): C.1
<input type="checkbox"/> Changes in XLS	Worksheet(s):
<input checked="" type="checkbox"/> Other: FSC	
VVB assessment (2nd round)	
Date: 05/04/2023	
MR version 3.0, C	
<ol style="list-style-type: none"> Evidence of first stove construction by way of receipt^{FSC/} and user agreement has been furnished and validated. Confirmed as excluded completely. The database^{DB/} is found to be consistent 	
Conclusion Tick the appropriate checkbox	<input checked="" type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

CL ID	02	Section no.	C.1	Date: 22/01/2023
Description of CL				
MR version 1.0, Section C.1				
Age group 1 N_y				
<ol style="list-style-type: none"> The value of N_y indicated as 593 is on Page 10 of MR, is inconsistent with the Extract Sales Database' tab record, which returns a value of 604. Further, the value is not consistent with value reported in MR after discounting the non-usage rate. PP shall clarify. It is reported on Page 10 of MR that stoves installed from 2019 until 30/09/2021 fall under the age group 1 while the 'Data' tab of 'Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec2022' workbook cell D17 indicates that age group 1 stoves were installed from 01/10/2020 – 30/09/2021 (both days included). PP shall clarify. 				
Age group 2 N_y				
<ol style="list-style-type: none"> PP states that 556 age group 2 (stoves installed from 01/10/2021 to 30/09/2022) stoves were installed whereas 'Extract Sales Database' tab indicates 558 stoves were installed. Further, the value reported in cell E20 as 284 in 'Data' tab of Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec2022' spreadsheet, is at odds with the value reported as 556 in MR Page 11. PP shall clarify. 				
Project participant response (1st round)				Date: 10/03/2023

Age group 1 Ny			
<ol style="list-style-type: none"> The value of 593 is copied from 'Monitoring survey Export and Summary 05dec22-3-rev 10mar2023/'Extract +7 and age groups'. This value does not include those stoves which were constructed within the last 7 days of September 2021. The usage rate is deducted with the ER calculation later. The first stove was installed on 20. December 2019. But the crediting period as approved by Klima Kollekte started on 1. October 2020. Those stoves installed up to this date were credited from 1. October 2020 onwards. 			
Age group 2 Ny			
<ol style="list-style-type: none"> Refer to 'Extract +7 and age groups' where the number 556 is the count of that period. The 'Extract sales database' has not been adjusted to the 7 days the installed stoves need to dry before use. Further, for the calculation of emission reductions, the number of stoves installed are corrected by the days in use of each stove throughout the crediting period which is 365 days, and recalculated as number of stoves in use for 365 days. See Monitoring survey Export and Summary 05dec22-3-rev 10mar2023/ Extract +7 and age groups. 			
Documentation provided by project participant (1st round)			
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:
<input checked="" type="checkbox"/>	Changes in MR	Section(s): C.1	New version No.: 2.0
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		
VVB assessment (1st round)			Date: 27/03/2023
MR version 2.0, C			
Age Group 1			
<ol style="list-style-type: none"> The 593 installed are classified as age group 1 (20/12/2019 – 30/09/2021) and the 556 as age group 2 (01/10/2021 - 30/09/2022). The same is now reported consistently. The start date and start date of crediting period are now clarified. 			
Age Group 2			
<ol style="list-style-type: none"> The value is now reported consistently for vintage age group 2 			
Conclusion		<input type="checkbox"/> Additional action should be taken (finding remains open)	
Tick the appropriate checkbox		<input checked="" type="checkbox"/> The finding is closed	

CL ID	03	Section no.	C.2	Date: 22/01/2023
Description of CL				
MR version 1.0, Section C.2				
The simple random sample size selected for age group 2 as per 'Kobo import age group 2' tab of 'Monitoring survey Export and Summary 05dec22-3' workbook, is 61 and not 60 as reported in MR Page 14. Additionally, cell G3 of 'Dashboard age groups' tab of "Monitoring survey Export and Summary 05dec22-3" workbook indicates the 59 as the number of Households visited. PP shall clarify.				
Project participant response (1st round)				Date: 10/03/2023
ID 650 has been entered twice but counts only once.				
Additionally, out of 125 samples randomly selected for each age group, 123 were interviewed because of 1 stove user declined to be interviewed, 1 stove was not constructed yet.				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): C.1	New version No.: 2.0	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
VVB assessment (1st round)				Date: 27/03/2023

MR version 2.0, C.2	
The sample size picked for age group 1 is 65 and 60 for age group 2. However, 64 and 59 were reached respectively and the same is explained in the MR.	
Conclusion Tick the appropriate checkbox	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Table 2. CAR from this verification

CAR ID	01	Section no.	D.1	Date: 22/01/2023
Description of CAR				
MR version 1.0, Section D.1, Section D.4, and Section D.5				
<ol style="list-style-type: none"> In the absence of the proposed project activity, all baseline SDG values are 0. Therefore, the net benefit is always <i>Project value – Baseline value (zero)</i>. According to the latest PDD (version 7- September 2022) Page 26, the ex-ante estimated ER_y per stove is 4.95 tCO₂e, which do not result in 4,904 tCO₂e reported in MR Page 16 when considering the number of stoves in use for the monitoring period. PP shall correct or clarify how the ex-ante value reported was calculated. 				
Project participant response (1st round)				Date: 10/03/2023
<ol style="list-style-type: none"> Revised accordingly Please see table below, values different from estimate are highlighted. The estimate in the PDD may not correspond to the actual situation of the implemented project. 				
		PDD v7	2. MR v2	
			age group 1	age group 2
N_y		1	1	1
P_y		2.52	2.52	2.52
	B_{b,y}		4	4
	η_b		10%	10%
	η_{p,y}		27%	27%
U_y		100%	99%	99%
f_{NRB}		88%	88%	88%
EF_{b,fuel,CO2}		1.747	1.747	1.747
EF_{b,fuel,non-CO2}		0.530	0.530	0.530
DF_{b,Stove,y}		95%	90%	94%
ER_{y,stove}		4.95	4.64	4.85
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):		New version No.:
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):		New version No.:
<input checked="" type="checkbox"/>	Changes in MR	Section(s): D.1		New version No.: 2.0
<input type="checkbox"/>	Changes in XLS	Worksheet(s):		New version No.:
<input type="checkbox"/>	Other:			
VVB assessment (1st round)				Date: 27/03/2023
MR version 2.0, D.1				
<ol style="list-style-type: none"> Baseline and project values are now correctly indicated. The difference is now clarified. The main reason for the overall increase of emission reductions is the number of stoves installed and operational, and not a higher per stove emission reduction. Nonetheless, the following is observed: - <ul style="list-style-type: none"> The CREEC report/certificate shows efficiency of 27.5%, against the applied PDD value of 				

28.75%			
<ul style="list-style-type: none"> The values of operational stoves are indicated as 593 and 284 respectively, and manually inserted for VER calculations. Please clarify how the usage rate of 99% is taken into account for both age groups Total emission reductions are 4104 tCO_{2e} and not 4105 tCO_{2e} 			
Project participant response (2nd round)		Date: 10/03/2023	
<p>2. The CREEC test report certifies 27.5% and 30.0 % for fire chamber 1 and 2. Both values are tier 2 and the average was used for the calculation of ERs.</p> <p>The usage rate is included in the 'Efficient Cooking Masaka 2. Monitoring ER Calculation 05dec22_rev 10mar2023', sheet 'ER calculations' cells C13 and D13. This is consistent with the formula provided by the methodology:</p> $ER_y = \sum N_y * P_y * U_y * (fNRB * EF_{fuel,CO_2} + EF_{fuel, nonCO_2}) * (1 - DF_{b,Stove,y})$ <p>To define N_y as the Number of stoves operational is misleading. It should be Number of stoves installed, constructed or commissioned (as in AMS-II. G).</p>			
Documentation provided by project participant (1st round)			
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:
<input checked="" type="checkbox"/>	Changes in MR	Section(s): C.1	New version No.: 2.0
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		
VVB assessment (2nd round)		Date: 27/03/2023	
<p>MR version 2.0, C.2</p> <ul style="list-style-type: none"> The stove efficiency is now clarified and applied as such OK N_y and U_y are now clarified and correctly applied Total emission reductions are now corrected and consistent throughout the report. 			
Conclusion <i>Tick the appropriate checkbox</i>		<input checked="" type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

CAR ID	02	Section no.	D.2	Date: 22/01/2023
Description of CAR				
<p>MR version 1.0, Section D.2</p> <p>The equation 1 is used to calculate the SDG13 value. Therefore, the calculated value is the project value and shall be consistent with the spreadsheet</p>				
Project participant response (1st round)				Date: 10/03/2023
Changed accordingly				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): D.2	New version No.: 2.0	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
VVB assessment (1st round)				Date: 27/03/2023
<p>MR version 2.0, D.2</p> <p>The calculated project value for each SDG is not as per the spreadsheet</p>				
Conclusion <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Table 3. FAR from this verification

N/A