Gold standard for the global goals
Monitoring report

June 2017, version 1

Title of the project	GS1340 Efficient cookstoves in Burkina Faso – VPA-01 - tiipaalga F3PA cookstoves in Bourzanga – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-02 - tiipaalga F3PA cookstoves in Bourzanga – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-03 - tiipaalga F3PA cookstoves in Rollo – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-04 - tiipaalga F3PA cookstoves in Ouindigui – Loroum GS1340 Efficient cookstoves in Burkina Faso – VPA-05 - tiipaalga F3PA cookstoves in Tikaré – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-06 - tiipaalga F3PA cookstoves in Kongoussi – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-07 - tiipaalga F3PA cookstoves in Kongoussi – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-08 - tiipaalga F3PA cookstoves in Guibaré – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-09 - tiipaalga F3PA cookstoves in Nasséré and Sabcé – Bam GS1340 Efficient cookstoves in Burkina Faso – VPA-10 - tiipaalga F3PA cookstoves in Rouko and Sabcé - Bam
Gold Standard project id	GS2456 (VPA-01) GS3516 (VPA-02) GS3517 (VPA-03) GS3518 (VPA-04) GS3519 (VPA-05) GS3520 (VPA-06) GS3521 (VPA-07) GS3522 (VPA-08) GS3523 (VPA-09) GS3524 (VPA-10)
Version number of the monitoring report	1
Completion date of the monitoring report	21/08/2018
Date of project design certification	GS2456 (VPA-01): 10/11/2014 GS3516 (VPA-02): 21/10/2015 GS3517 (VPA-03): 21/10/2015 GS3518 (VPA-04): 21/10/2015 GS3519 (VPA-05): 21/10/2015 GS3520 (VPA-06): 21/10/2015 GS3521 (VPA-07): 21/10/2015 GS3522 (VPA-08): 21/10/2015 GS3523 (VPA-09): 21/10/2015 GS3524 (VPA-10): 20/11/2015

Start date of crediting period	GS2456 (VPA-01): 05/02/2015 GS3516 (VPA-02): 08/02/2015 GS3517 (VPA-03): 03/02/2015 GS3518 (VPA-04): 06/02/2015 GS3519 (VPA-05): 02/02/2015 GS3520 (VPA-06): 11/02/2015 GS3521 (VPA-07): 14/02/2015 GS3522 (VPA-08): 02/02/2015 GS3523 (VPA-09): 02/02/2015 GS3524 (VPA-10): 11/02/2015
Duration of this monitoring period	Monitoring Period #4 (first and last days included): VPA-01: 01/01/2018 – 31/12/2018 VPA-02: 01/01/2018 – 31/12/2018 VPA-03: 01/01/2018 – 31/12/2018 VPA-04: 01/01/2018 – 31/12/2018 VPA-05: 01/01/2018 – 31/12/2018 VPA-06: 01/01/2018 – 31/12/2018 VPA-07: 01/01/2018 – 31/12/2018 VPA-08: 01/01/2018 – 31/12/2018 VPA-09: 01/01/2018 – 31/12/2018 VPA-10: 01/01/2018 – 31/12/2018
Duration of previous monitoring period	Monitoring Period #3 (first and last days included): VPA-01: 01/01/2017 – 31/12/2017 VPA-02: 01/01/2017 – 31/12/2017 VPA-03: 01/01/2017 – 31/12/2017 VPA-04: 01/01/2017 – 31/12/2017 VPA-05: 01/01/2017 – 31/12/2017 VPA-06: 01/01/2017 – 31/12/2017 VPA-07: 01/01/2017 – 31/12/2017 VPA-08: 01/01/2017 – 31/12/2017 VPA-09: 01/01/2017 – 31/12/2017 VPA-10: 01/01/2017 – 31/12/2017
Project representative(s)	Association tiipaalga
Host Country	Burkina Faso
Certification pathway (activity certification/impact certification)	Impact certification
SDG Contributions targeted (as per approved PDD)	SDG 1, No poverty SDG 3, Good health and well-being SDG 4, Quality Education

	SDG 5, Gender equality SDG 7, Affordable and clean energy SDG 13, Climate Action
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	The Gold Standard Simplified Methodology for Efficient Cookstoves - Version 1
Estimated amount of annual average certified SDG impact (as per approved PDD)	GS2456 (VPA-01): 8,818 VER GS3516 (VPA-02): 8,818 VER GS3517 (VPA-03): 8,825 VER GS3518 (VPA-04): 8,821 VER GS3519 (VPA-05): 8,820 VER GS3520 (VPA-06): 8,825 VER GS3521 (VPA-07): 8,825 VER GS3522 (VPA-08): 8,820 VER GS3523 (VPA-09): 8,817 VER GS3524 (VPA-10): 8,825 VER Total: 88,214 VER
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	GS2456 (VPA-01): 9,485 VER GS3516 (VPA-02): 9,505 VER GS3517 (VPA-03): 9,192 VER GS3518 (VPA-04): 9,872 VER GS3519 (VPA-05): 9,436 VER GS3520 (VPA-06): 9,099 VER GS3521 (VPA-07): 8,636 VER GS3522 (VPA-08): 8,216 VER GS3523 (VPA-09): 10,000 VER GS3524 (VPA-10): 10,000 VER Total: 93,441 VER

SECTION A. Description of project

A.1. Purpose and general description of project

The group of 10 micro-scale voluntary project activities (mVPA's) promotes the distribution and utilisation of the mud made three stones efficient woodstove "F3PA" in the Northern rural zones of Burkina Faso. The 10 mVPA's are all together implemented in the provinces of Bam and Loroum. The F3PA efficient cookstoves replace the traditional open air three stone cooking method whilst respecting the local three stone cooking culture. This is possible as the F3PA efficient cookstove, seen in the figure below integrates the three stones from each household inside its design. These three stones represent the pillar of the household's marital union.

The improved technology F3PA is significantly more efficient than the traditional open fire three stone cooking method. The project activities will thus help reduce wood consumption by more than half in each household and therefore preserve the local forests and their biodiversity. This will also help combat the ever-increasing threat of desertification in the area. The F3PA efficient cookstove has further benefits such as avoiding hazardous open flame systems and reducing the quantity of harmful smoke in the local rural village households. Local families and women also benefit significantly through a reduction in time spent and distance walked in collecting wood. The project does not consist in a fuel switch as locally available wood is still being used.

Figure: F3PA efficient cookstove

The Monitoring Report applies to the F3PA efficient cookstove which is the primary technology disseminated and progressively installed for households in the rural provinces Bam and Loroum in the north of Burkina Faso within the group of 10 mVPA's.

During the fourth monitoring period from 01/01/2018 to 31/12/2018, it is calculated that VPA-01, VPA-02, VPA-03, VPA-04, VPA-05, VPA-06, VPA-07, VPA-08, VPA-09 and VPA-10 have generated **93,441** tons of CO2eq emission reductions.

A.2. Location of project

The 10 mVPA's has activities in the provinces of Bam and Loroum in the North of Burkina Faso:

GS/VPA number	Province	Municipality	Latitude	Longitude
GS2456 (VPA-01)	Bam	Bourzanga	13° 40' 41" N	1° 32' 46" W
GS3516 (VPA-02)	Bam	Bourzanga	13° 40' 41" N	1° 32' 46" W

GS3517 (VPA-03)	Bam	Rollo	13° 35' 58" N	1° 42' 21" W
GS3518 (VPA-04)	Loroum	Ouindigui	13° 40' 60" N	1° 58' 00" W
GS3519 (VPA-05)	Bam	Tikaré	13° 17' 29" N	1° 43' 34" W
GS3520 (VPA-06)	Bam	Kongoussi	13° 19' 33" N	1° 32' 05" W
GS3521 (VPA-07)	Bam	Kongoussi	13° 19' 33" N	1° 32' 05" W
GS3522 (VPA-08)	Bam	Guibaré	13° 06' 00" N	1° 36' 00" W
GS3523 (VPA-09)	Bam	Nasseré Sabcé	13° 20' 00" N 13° 11' 52" N	1° 22' 00" W 1° 31' 18" W
GS3524 (VPA-10)	Bam	Rouko Sabcé	13° 13' 00" N 13° 11' 52" N	1° 38' 00" W 1° 31' 18" W

A.3. Reference of applied methodology

"The Gold Standard Simplified Methodology for Efficient Cookstoves", version 1

A.4. Crediting period of project

GS2456 (VPA-01): 05/02/2015 – 10 years;
GS3516 (VPA-02): 08/02/2015 – 10 years;
GS3517 (VPA-03): 03/02/2015 – 10 years;
GS3518 (VPA-04): 06/02/2015 – 10 years;
GS3519 (VPA-05): 02/02/2015 – 10 years;
GS3520 (VPA-06): 11/02/2015 – 10 years;
GS3521 (VPA-07): 14/02/2015 – 10 years;
GS3522 (VPA-08): 02/02/2015 – 10 years;
GS3523 (VPA-09): 02/02/2015 – 10 years;
GS3524 (VPA-10): 11/02/2015 – 10 years;

SECTION B. Implementation of project

B.1. Description of implemented project

The project activities have served the following number of households with F3PA efficient cookstoves with a corresponding calculated GHG offsets generated during the monitoring period:

GS/VPA number	Number of households	Dissemination calendar	Generated VER's
GS2456 (VPA-01)	3,176	4/2/2015 – 31/12/2018	9,485
GS3516 (VPA-02)	3,161	7/2/2015 – 31/12/2018	9,505
GS3517 (VPA-03)	3,115	2/2/2015 – 31/12/2018	9,192
GS3518 (VPA-04)	3,162	5/2/2015 – 31/12/2018	9,872

GS3519 (VPA-05)	3,143	1/2/2015 – 31/12/2018	9,436
GS3520 (VPA-06)	3,440	10/2/2015 – 31/12/2018	9,099
GS3521 (VPA-07)	3,214	13/2/2015 – 31/12/2018	8,636
GS3522 (VPA-08)	3,000	1/2/2015 – 31/12/2018	8,216
GS3523 (VPA-09)	3,172	1/2/2015 – 31/12/2018	10,000
GS3524 (VPA-10)	3,108	10/2/2015 – 31/12/2018	10,000
Total:	**31,691**		**93,441**

B.2. Post-registration changes

B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

Not applicable

B.2.2. Corrections

Not applicable

B.2.3. Changes to start date of crediting period

Not applicable

B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

Not applicable

B.2.5. Changes to project design of approved project

Not applicable

SECTION C. Description of monitoring system applied by the project

Process of unique identification of stove users:

Significant part of the households in the project area are polygamous. Most of the wives within a household included in the carbon project has a cookstove set of at least two F3PA efficient cookstoves of different sizes. The project cookstoves are single pot stoves. As every cooking pot size has its specific size of cookstove, different sizes of project cookstoves have been implemented according the cooking habits of the stove users. The sizes of the cooking pots and so the cookstoves used in the VPA's are 2, 3, 4, 5, 6, 7, 8, 10, 12 and 15 due to its frequency of utilization. The women using different cookstove sets in a polygamous household are credited as one single household.

The individual identification of the micro scale – VPA's is ensured with the identification of each household and each wife within the household using the project cookstoves by a unique serial number referring to the micro scale – VPA's 1 to 10. The syntax of the unique serial number is defined as GS1340-VPA-xx-yyyy/z, where

(i) GS1340 is the Gold Standard number of the PoA "Efficient cookstoves in Burkina Faso" to which the VPA belongs, (ii) VPA-xx is the number of the VPA of the PoA, (iii) yyyy is the number of the household from 1 to 9999 and (iv) z is the number of the wife in the household from 1 to 9.

The following information is documented for each household of which each wife of the household (when polygamous) has replaced all traditional three stones cookstoves for domestic use with project cookstoves:

i. Unique VPA ID number of each household and each wife within the household;
ii. Type and size of appliance (ex. F3PA – size 2);
iii. GPS Coordinates of the household;
iv. Name/Address/national ID Number/Mobile Number/Picture of wife with her project cookstoves;
v. Stove Construction Date;

All data are stored in an electronic database using AKVO Flow software (www.akvo.org). The following files are raw data files of data stored in the cloud:

- *DR_Tiipaalga_VPA-01-10_HH_20190416 v1.0:* distribution records (DR) of households with the following data:
    - Identifier (Unique internal ID number);
    - GS number: GS PoA-nr / VPA-nr / Household nr;
    - Location info;
    - Data on head of household;
- *DR_Tiipaalga_VPA-01-10_ICS_20190416 v1.0*: data on wives and type of stoves used per wife within the household with the following data:
    - Identifier (Unique internal ID number) which is the unique key to household info (*DR_Tiipaalga_VPA-01-10_HH_20190416 v1.0*):
    - Identification data per wife: name, picture of wife with its stoves;
    - Data on stoves used per wife: size of stoves, construction dates of each stove, location of stoves, …

The start of the crediting period of each household is considered as the latest construction date of all stoves within the cooking sets of the different wives within the household (See file *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0)*. For each household the number of days in age group 0-1, age group 1-2, age group 2-3 and age-group 3-4 are calculated.

Data concerning double counting:

The project developer tiipaalga monitors any risks of double counting in this project, specifically determining whether any of the efficient cookstoves part of this project are counted in any other emission reduction project. At this time, to the best of our knowledge there are no other registered GHG reduction projects in Burkina Faso promoting the F3PA efficient cookstoves. Tiipaalga is aware of another cookstove project[1] in Burkina Faso registered under the Gold Standard. However, this project promotes a different kind of stoves rather for non-household cooking purposes.

Tiipaalga continues to monitor whether any other projects with same technology exist. In such cases, Tiipaalga will make every effort to compare total distribution databases with the other project developer(s) to ensure that there is no overlap. In addition, the project continues to use all legal documentation outlined in the VPA-DD to ensure legal ownership over offsets, a step that further avoids double counting.

Data processing and archiving:

Distribution records are captured with Smartphones using the AKVO Flow software with necessary pictures and GPS coordinates. Monitoring data are extracted to Microsoft Excel for analyse. Records will be kept for two years after the project activity is completed.

Quality assurance and quality control measures

[1] The project (https://registry.goldstandard.org/projects/details/665) is an initiative of SNV, the Netherland Development Organization, to promote improved "dolo" stoves in the Boucle du Mouhoun Region of Burkina Faso. These stoves are used for brewing of "Dolo", a traditional local drink made from sorghum which is is consumed during any ceremony, rituals, festivities and non-special occasions.

Quality control rules were developed for the F3PA efficient cookstoves and were explained during the stove construction trainings. Quality control rules included in the construction protocol of the F3PA efficient cookstove are among others:

- It should be possible to move a hand between the wall of the cookstove and the cookpot;
- The height of the wood entrance of the cookstove is at most half the total height of the cookstove;
- The distance between the cooking pot and floor of cookstove should either not be higher than a hand or the handles of the cooking pot should be higher than the wall of the cookstove.

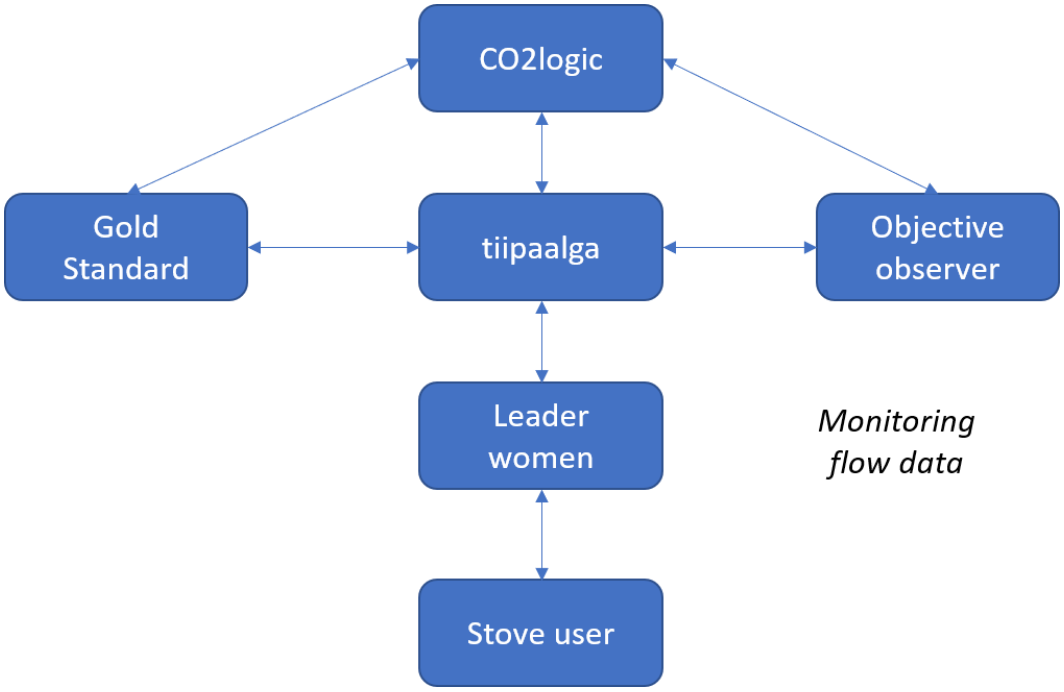
During monitoring surveys the F3PA efficient cookstoves are evaluated with the following statuses:

- *Green*: the construction norms have been respected and the F3PA efficient cookstove doesn't need any maintenance action. It means that (i) the outer surface of the F3PA efficient cookstove are not washed by rain, (ii) there is no hole in the floor of the efficient stove;
- *Orange*: the construction norms have been respected, but the efficient cookstove has not well been maintained. It concerns F3PA efficient cookstoves (i) from which the outer surface has been washed by rain and that need re-polishing; (ii) that have been constructed more than two years ago and that need re-polishing of internal and outer surface; (iii) that have some cracks, but which are external and do not affect the quality of the combustion of the wood. For these cases the application of the reparation protocol will fix the cracks and repolish the surface, so that the status will turn again into green.
- *Red*: the construction norms are not respected, or the F3PA efficient cookstoves have not been well maintained or used in a proper way. If the F3PA efficient cookstove has not been well constructed, the cookstove will not be registered in the initial database. An example of poor usage is sitting before the entrance of the stove. The combustion will not happen in an appropriate way and the risk that the cookstove will crack at the level of the entrance is high. A red cookstove needs to be reconstructed.

Orange cookstoves will be monitored, so that the maintenance activities of these stoves bring them again in green status. If these maintenance activities do not take place, they probably will in the short term, get into the red status. Orange F3PA efficient cookstoves are considered to have the same efficiency as the green F3PA efficient cookstoves of the same age group. The red F3PA efficient cookstoves will be monitored, as long as the cookstove has not been reconstructed. After reconstruction, the status of the F3PA efficient cookstove will turn to green. Red F3PA efficient cookstoves do not have the targeted efficiency of the F3PA efficient cookstove anymore, and so are not considered in the emission reduction calculations as long as they are not reconstructed.

Diagram of Responsibilities

Tiipaalga is responsible for the development of the project activities, the initial data collection and project monitoring. CO2logic provides technical support in the initial data collection, data quality assurance, monitoring, drafting of the verification report and in the communication with the Gold Standard Foundation and the Objective Observer. A diagram of responsibilities is shown here below.



Tiipaalga employees train leader women, who are selected by the women in the villages, for the construction, the use and maintenance of the F3PA efficient cookstoves. These leader women conduct the same training sessions with the women in their villages and help them to build the cookstoves. tiipaalga employees in collaboration with the leader women will perform quality checks. End user information is collected by tiipaalga agents with mobile smartphone, and is consolidated into an electronic database in the cloud from which project monitoring can be conducted. In addition, end-user information is contained in an emission reduction contract. Hard copies of the contracts are filed as additional backup to prevent any losses in case of emergencies such as fire/theft and for verification purposes.

Monitoring tasks such as monitoring surveys are managed by tiipaalga and realized by the tiipaalga agents. They are the most capable of collecting these data because of extensive knowledge of the technology and end-users. The tiipaalga agents are trained and retrained prior conducting surveys during a 5-days training session conducted from 7/5/2019 till 11/5/2019[2]. CO2logic assists tiipaalga in cross-checking the integrity of data with other variables to ensure consistency and accuracy, and to avoid mistakes.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$EF_{b,fuel,CO2}$**
Unit	tCO_2/ton of firewood
Description	CO_2 emission factor arising from use of firewood in baseline scenario
Source of data	IPCC default values, table 1.4 of chapter 1 of Vol.2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied)	1.747 tCO_2/ton of firewood
Choice of data or measurement methods and procedures	As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves
Purpose of data	Calculation of emission reductions
Additional comments	N/A

[2] Report of the training session *Compte rendu de formation des enqueteurs verification AN4 Bam et An 1 Kourweogo v2 comments*

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter:	**EFb,fuel,non_CO2**
Unit	tCO_2/ton of firewood
Description	Non-CO_2 emission factor arising from use of firewood in baseline scenario
Source of data	IPCC default values, table 2.9 of chapter 2 of Vol.2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied)	0.530 tCO_2/ton of firewood
Choice of data or measurement methods and procedures	As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves
Purpose of data	Calculation of emission reductions
Additional comments	N/A

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter:	**η_b**
Unit	Fraction
Description	Efficiency of the cookstove being used in the baseline scenario
Source of data	Gold Standard Simplified Methodology for Efficient Cookstoves
Value(s) applied)	0.10
Choice of data or measurement methods and procedures	As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves
Purpose of data	Calculation of emission reductions
Additional comments	N/A

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter:	**η_p**
Unit	Fraction
Description	Efficiency of the cookstove being used in the project scenario
Source of data	Determined following the Water Boiling Test Protocol
Value(s) applied)	0.234[3]
Choice of data or measurement methods and procedures	As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves

[3] 2IE Ouagadougou, Laboratoire Biomasse Energie et Biocarburant, Rapport sur les tests de performances énergétiques des foyers trois pierres améliorés (F3PA) de l'association Tiipaalga : document *tiipaalga_Rapport de tests de performance énergétiques_F3PA_24_07_2015_VF*

Purpose of data	Calculation of emission reductions
Additional comments	For each wife of one household included in the VPA, at least two efficient cookstoves of the defined project sizes 2, 3, 4, 5, 6, 7, 8, 10, 12 and 15 will be installed according the local cooking habits. Each size of project cookstove is tested according to the WBT protocol. To determine the project cookstove efficiency of one particular size, three sample runs have been carried out on one randomly selected project cookstove. The average of the three results is taken as the efficiency for the project cookstove of this particular size. The lowest value of project cookstove efficiency of the various sizes is taken as reference value for the efficiency of the cookstoves being used in the project scenario to calculate the emission reductions. The project cookstove efficiency in the year y $\eta_{p,y}$ will be determined using the discount factor DF_{η} to account for efficiency loss of project cookstove per year of operation (fraction).

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$f_{NRB,b,y}$**
Unit	Fractional non-renewability
Description	Non-renewability status of wood fuel during year y
Source of data	Default NRB value provided by the CDM executive board and endorsed by the host country DNA (http://cdm.unfccc.int/DNA/fNRB/docs/burkina.pdf)
Value(s) applied)	0.90
Choice of data or measurement methods and procedures	As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves
Purpose of data	Calculation of emission reductions
Additional comments	The project activity may choose to update the $f_{NRB,b,y}$ during the crediting period

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$B_{b,y}$**
Unit	Tonnes firewood per household per year
Description	Firewood consumption for cooking in the baseline
Source of data	Average household size within the project boundary is determined for each VPA using data from the latest population census in 2006 of the National Institute for Statistics and Demography [4]. The minimum service level or the default baseline biomass consumption according the Gold Standard Simplified Methodology for Efficient Cookstoves is set at 0.5 tonnes per capita per year.
Value(s) applied)	VPA-01 – Bourzanga: 3.39 VPA-02 – Bourzanga: 3.39 VPA-03 – Rollo: 3.33 VPA-04 – Ouindigui: 3.53 VPA-05 – Tikaré: 3.41 VPA-06 – Kongoussi: 3.03 VPA-07 – Kongoussi : 3.03 VPA-08 – Guibaré : 3.44 VPA-09 – Nasséré and Sabcé: 3.74 VPA-10 – Rouko and Sabcé : 3.78

[4] INSD, recensement général de la population et de l'habitation de 2006, juillet 2008, Ministère de l'Economie et des Finances, p43 (tableau 15), 52 pages (document *Resultats_definitifs_RGPH_2006*)

Choice of data or measurement methods and procedures	Option c of Minimum service level has been chosen to determine the firewood consumption for cooking in the baseline as detailed information per municipality on average household size is available in the "Recensement général de la population et de l'habitation (RGPH) de 2006 du Burkina Faso" or the general census of the population and habitat of Burkina Faso, table 15. Other sources show that the population in Burkina Faso is growing each year[5]. This means that the used value can be considered as conservative to calculate the CO2 reduction emissions.
Purpose of data	Calculation of emission reductions
Additional comments	N/A

D.2. Data and parameters monitored

Relevant SDG Indicator	**SDG 1, No poverty**
Data/parameter:	**Number of leader women (Monitrice endogène) who benefit from microcredit**
Unit	Number of persons
Description	Number of leader women (Monitrice endogène) who benefit from microcredit
Measured/calculated/default	Measured
Source of data	Reports regarding the microcredit scheme for leader women involved in the project: see document *Rapport de déblocage du micro crédit FAME-AGR villages an 2_ final_w comments*
Value(s) of monitored parameter	873
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the parameter is based on qualitative information collected in the reports regarding the microcredit scheme.
QA/QC procedures:	The data has been in the reports regarding the microcredit scheme, which is made available for review.
Purpose of data:	Calculation of the parameter "Number of leader women (Monitrice endogène) who benefit from microcredit"
Additional comments:	In the second phase of the implementation of the Tiipaalga microcredit scheme 873 monitrices endogènes of 50 villages received between end of September 2018 and half of November 2018 (which corresponds with the harvesting period) 25,000,000 FCFA or 38,110 € on their microcredit account for the finance of income generating activities. The table on page 6 of document *Rapport de déblocage du micro crédit FAME-AGR villages an 2_ final_w comments* mentions per VPA and per village the number of Monitrices Endogènes (Leader Women) included in the second phase of the micro-credit scheme of Tiipaalga as well as the amount per microcredit support fund for income generating activities

Relevant SDG Indicator	**SDG 3, Good health and well-being**
Data/parameter:	**Proportion of households perceiving less often smoke levels, incidence of coughing, incidence of respiratory illness, incidence of itchy eyes**
Unit	Fraction
Description	Proportion of households perceiving less often smoke levels, incidence of coughing, incidence of respiratory illness, incidence of itchy eyes since the implementation of F3PA efficient cookstoves

[5] INSD, Annuaire Statistique 2011, Ministère de l'Economie et des Finances, Edition 2013, p24 - 27 (table 02.18), 420 p.) – Document *Annuaire_statistiques_finale2011*

Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	Smoke level reduction: 99.7% Incidence of coughing reduction: 99.7% Incidence of respiratory illness reduction: 100.0% Incidence of itchy eyes reduction: 100.0%
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the parameter is based on qualitative information collected during Monitoring surveys. The end users are asked whether, since they have the F3PA efficient cookstoves, smoke level occurs for each more often, less often among the family members or the situation has not changed. The same is asked for coughing, respiratory illnesses and itchy eyes.
QA/QC procedures:	The data is analyzed in the monitoring report and raw data of the Monitoring surveys will be made available for review.
Purpose of data:	Calculation of the parameter "Proportion of households perceiving less often smoke levels, incidence of coughing, incidence of respiratory illness, incidence of itchy eyes"
Additional comments:	See Document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 4, Quality Education**
Data/parameter:	**Number of trainings initiatives for staff involved in the programme**
Unit	Number
Description	Number of trainings initiatives for staff involved in the programme in order to increase their performance in the programme
Measured/calculated/default	Measured
Source of data	Reports regarding the training initiatives
Value(s) of monitored parameter	1
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The list of training initiatives during the corresponding monitoring period
QA/QC procedures:	The data will be analyzed in the reports regarding the training initiatives, which will be made available for review.
Purpose of data:	Calculation of the parameter "Number of trainings initiatives for staff involved in the programme"
Additional comments:	In total 1 training has been organized during the monitoring period: *Training initiative*: • March 2018: 5 days; • Tiipaalga office in Kongoussi; • 6 staff members • Utilization of smartphones with AKVO Flow software for monitoring survey (of the third verification); • Documentation: file *Compte rendu de formation des enqueteurs verification AN3 Mars 2018;*

Relevant SDG Indicator	**SDG 4, Quality Education**
Data/parameter:	**Number of workshops carried out for women**
Unit	Number
Description	Number of workshops carried out for women in order to increase their empowerment
Measured/calculated/default	Measured

<table>
<tr><td>Source of data</td><td>Reports regarding the workshops carried out for women</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>383</td></tr>
<tr><td>Monitoring equipment</td><td>N/A</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Annual</td></tr>
<tr><td>Calculation method (if applicable):</td><td>The list of workshops carried out for women during the corresponding monitoring period</td></tr>
<tr><td>QA/QC procedures:</td><td>The data has been analyzed in the reports regarding the workshops carried out for women, which will be made available for review.</td></tr>
<tr><td>Purpose of data:</td><td>Calculation of the parameter “Number of workshops carried out for women”</td></tr>
<tr><td>Additional comments:</td><td>Two types of workshops were organized: i) sensitisation workshops; and ii) training workshops of leader women for the construction of F3PA efficient cookstoves. During sensitisation sessions stove users are informed about the advantages of the project cookstoves, on how the banco or mud should be prepared for the construction of the cookstoves, etc. During training sessions leader women are trained on how the F3PA efficient cookstoves should be constructed. The table below gives an overview of the number of sessions and number of women participating to the sessions:

<table>
<tr><th rowspan="2">VPA</th><th colspan="2">Sensitisation</th><th colspan="2">Training of leader women</th><th colspan="2">Total</th></tr>
<tr><th># session</th><th># women</th><th># session</th><th># women</th><th># session</th><th># women</th></tr>
<tr><td>1</td><td>21</td><td>1,563</td><td>2</td><td>80</td><td>23</td><td>1,643</td></tr>
<tr><td>2</td><td>17</td><td>1,134</td><td>1</td><td>30</td><td>18</td><td>1,164</td></tr>
<tr><td>3</td><td>39</td><td>1,384</td><td>0</td><td>0</td><td>39</td><td>1,384</td></tr>
<tr><td>4</td><td>28</td><td>1,087</td><td>0</td><td>0</td><td>28</td><td>1,087</td></tr>
<tr><td>5</td><td>38</td><td>1,076</td><td>4</td><td>148</td><td>42</td><td>1,224</td></tr>
<tr><td>6</td><td>79</td><td>1,640</td><td>1</td><td>41</td><td>80</td><td>1,681</td></tr>
<tr><td>7</td><td>31</td><td>2,018</td><td>5</td><td>131</td><td>36</td><td>2,149</td></tr>
<tr><td>8</td><td>35</td><td>1,000</td><td>9</td><td>462</td><td>44</td><td>1,462</td></tr>
<tr><td>9</td><td>16</td><td>737</td><td>12</td><td>451</td><td>28</td><td>1,188</td></tr>
<tr><td>10</td><td>27</td><td>735</td><td>18</td><td>396</td><td>45</td><td>1,131</td></tr>
<tr><td colspan="5">Total</td><td>383</td><td>14,113</td></tr>
</table>

Evidences of the sensitisation sessions can be found in the following documents:
- VPA 01_CR d'une séance d'animation ;
- VPA 02_CR d'une séance d'animation ;
- VPA 03_CR d'une séance d'animation ;
- VPA 04_CR d'une séance d'animation ;
- VPA 05_CR d'une séance d'animation ;
- VPA 06_CR d'une séance d'animation ;
- VPA 07_CR d'une séance d'animation ;
- VPA 08_CR d'une séance d'animation ;
- VPA 09_CR d'une séance d'animation ;
- VPA 10_CR d'une séance d'animation.

Evidences of the training sessions of the leader women (monitrices endogènes) can be found in the following documents:
- VPA 01_CR session de formation 2018 Bonde ;
- VPA 01_CR session de formation 2018 Zomkalga ;
- VPA 02_CR session de formation 2018 Bzga Sect 7 ;
- VPA 05_CR session de formation 2018 Gonga ;
- VPA 05_CR session de formation 2018 Sancé ;
- VPA 05_CR session de formation 2018 Touga ;
- VPA 05_CR session de formation 2018 Zamsé ;
- VPA 06_CR session de formation 2018 Bognam-F ;
- VPA 07_CR session de formation 2018 Kouka ;
- VPA 07_CR session de formation 2018 Loaga ;
- VPA 07_CR session de formation 2018 Nienega – Mossi ;
- VPA 07_CR session de formation 2018 Tangaye ;
- VPA 07_CR session de formation 2018 Yalka ;</td></tr>
</table>

	- *VPA 08_CR session de formation 2018 Béelé ;* - *VPA 08_CR session de formation 2018 BèeléBakoui ;* - *VPA 08_CR session de formation 2018 Booré ;* - *VPA 08_CR session de formation 2018 Gouera ;* - *VPA 08_CR session de formation 2018 Kétèga ;* - *VPA 08_CR session de formation 2018 Ketego ;* - *VPA 08_CR session de formation 2018 Koullou centre ;* - *VPA 08_CR session de formation 2018 Koullou ;* - *VPA 08_CR session de formation 2018 Tioussa ;* - *VPA 08_CR session de formation 2018 ;* - *VPA 09_CR Session de formation 2018 Bilga - Fulbé construction ;* - *VPA 09_CR Session de formation 2018 recyclage ;* - *VPA 09_CR Session de formation 2018 Tang-Pela construction ;* - *VPA 10_CR Session de formation 2018 Oueguela 1 ;* - *VPA 10_CR Session de formation 2018 Oueguela 2 ;* - *VPA 10_CR Session de formation 2018 Oueguela 3 ;* - *VPA 10_CR Session de formation 2018 Oueguela 4 ;* - *VPA 10_CR Session de formation 2018_Bissa 1 ;* - *VPA 10_CR Session de formation 2018_Bissa 2 ;* - *VPA 10_CR Session de formation 2018_Koumnago 1 ;* - *VPA 10_CR Session de formation 2018_Koumnago 2 ;* - *VPA 10_CR Session de formation 2018_Koumnago 3 ;* - *VPA 10_CR Session de formation 2018_sect 3 _1 ;* - *VPA 10_CR Session de formation 2018_sect 3 _2 ;* - *VPA 10_CR Session de formation 2018_sect 3 _3 ;* - *VPA 10_CR Session de formation 2018_Toublongo 1 ;* - *VPA 10_CR Session de formation 2018_Toublongo 2 ;* - *VPA 10_CR Session de formation 2018_Toublongo 3 ;* - *VPA 10_CR Session de formation 2018_Zomkalga 1 ;* - *VPA 10_CR Session de formation 2018_Zomkalga 2 ;* - *VPA 10_CR Session de formation 2018_Zomkalga 3.*

Relevant SDG Indicator	**SDG 5, Gender equality**
Data/parameter:	**Proportion of stove users perceiving reduced amount of time spent on wood fuel collection and/or reduced amount of money spent on wood fuel purchase**
Unit	Fraction
Description	Proportion of stove users perceiving reduced time spent on wood fuel collection and/or reduced money spent on wood fuel purchase since the implementation of the F3PA efficient cookstoves
Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	Reduced amount of time spent on wood fuel collection: 99.6% Domestic tasks$_p$: 43% Income generating activities$_p$: 40% Field labour$_p$: 4% Gardening$_p$: 7% Participation to a literacy program$_p$: 1% Community work$_p$: 1% Religious activities$_p$: 3% Reduced amount of money spent on wood fuel purchase: 100% School fees$_p$: 14% Purchase of medical drugs$_p$: 14% Purchase of food$_p$: 22% Investment for field crops$_p$: 6% Purchase of equipments$_p$: 2% Income generating activities$_p$: 31% Savings$_p$10%

Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the parameter is based on qualitative information collected during Monitoring surveys. The end users are asked whether, since they have the F3PA efficient cookstoves, they spent more, less time to collect the wood or the situation has not changed. In case of purchase wood fuel, the end users are asked they spent more, less money on the purchase of wood fuel or the situation has not changed.
QA/QC procedures:	The data has been analyzed in the monitoring report and raw data of the Monitoring surveys will be made available for review.
Purpose of data:	Calculation of the parameter "Proportion of stove users perceiving reduced amount of time spent on wood fuel collection and/or reduced amount of money spent on wood fuel purchase"
Additional comments:	See Document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 7, Affordable and clean energy**
Data/parameter:	**Number of F3PA efficient cookstoves disseminated**
Unit	Number
Description	Number of F3PA efficient cookstoves included in the project database for project scenario p
Measured/calculated/default	Measured
Source of data	Project database
Value(s) of monitored parameter	86,533
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Continuous
Calculation method (if applicable):	The project database provides a list of end-users with number of F3PA efficient cookstoves per end-user.
QA/QC procedures:	The data has been analyzed in the monitoring report and Project database is made available for review.
Purpose of data:	Calculation of the parameter "Number of F3PA efficient cookstoves disseminated"
Additional comments:	See document *DR_Tiipaalga_VPA-01-10_ICS_20190416 v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$U_{p,1}$**
Unit	Percentage
Description	Usage rate in project scenario p during year 1
Measured/calculated/default	Measured
Source of data	Annual usage/monitoring survey
Value(s) of monitored parameter	94.67% for the age group 0-1
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the usage rate is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the usage rate of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions

Additional comments:	A usage parameter is derived for each age group of project cookstove being credited. The usage survey will determine if the project cookstoves can be considered as 'in use' or 'not in use' and if the project cookstoves are in 'good condition' or 'not in good condition'. The record keeping system of the 10 VPA's included in this PoA is at household level (with household number) for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s) . Cookstove set(s) within a household can only be considered 'in use' if all the cookstoves in the set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are being used. Similarly, cookstove set(s) can only be considered in 'good condition' as long as all cookstoves within the cookstove set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are in a 'good condition'. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$U_{p,2}$**
Unit	Percentage
Description	Usage rate in project scenario p during year 2
Measured/calculated/default	Measured
Source of data	Annual usage/monitoring survey
Value(s) of monitored parameter	84.11% for the age group 1-2
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the usage rate is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the usage rate of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A usage parameter is derived for each age group of project cookstove being credited. The usage survey will determine if the project cookstoves can be considered as 'in use' or 'not in use' and if the project cookstoves are in 'good condition' or 'not in good condition'. The record keeping system of the 10 VPA's included in this PoA is at household level (with household number) for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s) . Cookstove set(s) within a household can only be considered 'in use' if all the cookstoves in the set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are being used. Similarly, cookstove set(s) can only be considered in 'good condition' as long as all cookstoves within the cookstove set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are in a 'good condition'. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$U_{p,3}$**
Unit	Percentage
Description	Usage rate in project scenario p during year 3
Measured/calculated/default	Measured
Source of data	Annual usage/monitoring survey

Value(s) of monitored parameter	87.92% for the age group 2-3
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the usage rate is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the usage rate of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A usage parameter is derived for each age group of project cookstove being credited. The usage survey will determine if the project cookstoves can be considered as 'in use' or 'not in use' and if the project cookstoves are in 'good condition' or 'not in good condition'. The record keeping system of the 10 VPA's included in this PoA is at household level (with household number) for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s) . Cookstove set(s) within a household can only be considered 'in use' if all the cookstoves in the set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are being used. Similarly, cookstove set(s) can only be considered in 'good condition' as long as all cookstoves within the cookstove set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are in a 'good condition'. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$U_{p,4}$**
Unit	Percentage
Description	Usage rate in project scenario p during year 4
Measured/calculated/default	Measured
Source of data	Annual usage/monitoring survey
Value(s) of monitored parameter	73.15% for the age group 3-4
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the usage rate is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the usage rate of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A usage parameter is derived for each age group of project cookstove being credited. The usage survey will determine if the project cookstoves can be considered as 'in use' or 'not in use' and if the project cookstoves are in 'good condition' or 'not in good condition'. The record keeping system of the 10 VPA's included in this PoA is at household level (with household number) for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s) . Cookstove set(s) within a household can only be considered 'in use' if all the cookstoves in the set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are being used. Similarly, cookstove set(s) can only be considered in 'good condition' as long as all cookstoves within the cookstove set(s) (in polygamous households all cookstoves of all cookstove sets of all women in the household) are in a 'good condition'.

	See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$N_{p,1}$**
Unit	Number of households included in the project (Units), based on days of usage of age group 0-1 during the fourth monitoring period related to one year.
Description	Household in the project database for project scenario p through year 1 for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s)
Measured/calculated/default	Measured
Source of data	Project database
Value(s) of monitored parameter	VPA-01 – Bourzanga: 153 VPA-02 – Bourzanga: 286 VPA-03 – Rollo: 323 VPA-04 – Ouindigui: 328 VPA-05 – Tikaré: 212 VPA-06 – Kongoussi: 266 VPA-07 – Kongoussi: 272 VPA-08 – Guibaré: 736 VPA-09 – Nasséré and Sabcé: 645 VPA-10 – Rouko and Sabcé: 557
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Continuous
Calculation method (if applicable):	For the determination of the number of usage days at household level for age group 0-1 during the fourth monitoring period, the latest start day of use of all constructed F3PA efficient cookstoves within the household will be taken in order to have conservative approach. Number of households included in the project (Units) are calculated based on days of usage of age group 0-1 during the fourth monitoring period related to one year.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A part of the households in the project area of the 10 VPA's are polygamous. Each wife of the household included in the carbon project must have at least two F3PA efficient cookstoves. This is a local cooking requirement as one is for the Mush "Tô", the other for the sauce "Sauce". Additional cookstoves could be used for boiling water or preparing the soup. All the traditional three stone cookstoves for domestic use will be replaced by the F3PA efficient cookstoves. This means that according to the needs of the household, an un-predetermined number of project cookstoves will be constructed and used at household level. As the quantity of firewood consumed in the baseline is determined at household level, the number of households will be monitored instead of project cookstoves to determine the emissions reductions. Women will be trained by the tiipaalga instructors or leader women to build the project cookstoves themselves using local materials according a strict construction protocol. In tight collaboration of the project coordinator, the instructor and the leader women the logistical management, quality assurance of the project cookstoves according the construction protocol and the management of the project database recording all constructed project cookstoves will be ensured. See document *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0*

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter:	**$N_{p,2}$**
Unit	Number of households included in the project (Units), based on days of usage of age group 1-2 during the fourth monitoring period related to one year.
Description	Household in the project database for project scenario p through year 2 for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s)
Measured/calculated/default	Measured
Source of data	Project database
Value(s) of monitored parameter	VPA-01 – Bourzanga: 1,041 VPA-02 – Bourzanga: 1,244 VPA-03 – Rollo: 1,291 VPA-04 – Ouindigui: 1,397 VPA-05 – Tikaré: 1,173 VPA-06 – Kongoussi: 1,395 VPA-07 – Kongoussi: 1,270 VPA-08 – Guibaré: 791 VPA-09 – Nasséré and Sabcé: 1,427 VPA-10 – Rouko and Sabcé: 1,139
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Continuous
Calculation method (if applicable):	For the determination of the number of usage days at household level for age group 1-2 during the fourth monitoring period, the latest start day of use of all constructed F3PA efficient cookstoves within the household will be taken in order to have conservative approach. Number of households included in the project (Units) are calculated based on days of usage of age group 1-2 during the fourth monitoring period related to one year.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A part of the households in the project area of the 10 VPA's are polygamous. Each wife of the household included in the carbon project must have at least two F3PA efficient cookstoves. This is a local cooking requirement as one is for the Mush "Tô", the other for the sauce "Sauce". Additional cookstoves could be used for boiling water or preparing the soup. All the traditional three stone cookstoves for domestic use will be replaced by the F3PA efficient cookstoves. This means that according to the needs of the household, an un-predetermined number of project cookstoves will be constructed and used at household level. As the quantity of firewood consumed in the baseline is determined at household level, the number of households will be monitored instead of project cookstoves to determine the emissions reductions. Women will be trained by the tiipaalga instructors or leader women to build the project cookstoves themselves using local materials according a strict construction protocol. In tight collaboration of the project coordinator, the instructor and the leader women the logistical management, quality assurance of the project cookstoves according the construction protocol and the management of the project database recording all constructed project cookstoves will be ensured. *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0*

Relevant SDG Indicator	SDG 13, Climate Action
Data/parameter:	**$N_{p,3}$**
Unit	Number of households included in the project (Units), based on days of usage of age group 2-3 during the fourth monitoring period related to one year.

Description	Household in the project database for project scenario p through year 3 for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s)
Measured/calculated/default	Measured
Source of data	Project database
Value(s) of monitored parameter	VPA-01 – Bourzanga: 1,264 VPA-02 – Bourzanga: 1,017 VPA-03 – Rollo: 928 VPA-04 – Ouindigui: 887 VPA-05 – Tikaré: 1,076 VPA-06 – Kongoussi: 1,067 VPA-07 – Kongoussi: 1,074 VPA-08 – Guibaré: 591 VPA-09 – Nasséré and Sabcé: 669 VPA-10 – Rouko and Sabcé: 777
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Continuous
Calculation method (if applicable):	For the determination of the number of usage days at household level for age group 2-3 during the fourth monitoring period, the latest start day of use of all constructed F3PA efficient cookstoves within the household will be taken in order to have conservative approach. Number of households included in the project (Units) are calculated based on days of usage of age group 2-3 during the fourth monitoring period related to one year.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A part of the households in the project area of the 10 VPA's are polygamous. Each wife of the household included in the carbon project must have at least two F3PA efficient cookstoves. This is a local cooking requirement as one is for the Mush "Tô", the other for the sauce "Sauce". Additional cookstoves could be used for boiling water or preparing the soup. All the traditional three stone cookstoves for domestic use will be replaced by the F3PA efficient cookstoves. This means that according to the needs of the household, an un-predetermined number of project cookstoves will be constructed and used at household level. As the quantity of firewood consumed in the baseline is determined at household level, the number of households will be monitored instead of project cookstoves to determine the emissions reductions. Women will be trained by the tiipaalga instructors or leader women to build the project cookstoves themselves using local materials according a strict construction protocol. In tight collaboration of the project coordinator, the instructor and the leader women the logistical management, quality assurance of the project cookstoves according the construction protocol and the management of the project database recording all constructed project cookstoves will be ensured. *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$N_{p,4}$**
Unit	Number of households included in the project (Units), based on days of usage of age group 3-4 during the fourth monitoring period related to one year.
Description	Household in the project database for project scenario p through year 4 for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s)
Measured/calculated/default	Measured
Source of data	Project database

Value(s) of monitored parameter	VPA-01 – Bourzanga: 715 VPA-02 – Bourzanga: 608 VPA-03 – Rollo: 555 VPA-04 – Ouindigui: 527 VPA-05 – Tikaré: 669 VPA-06 – Kongoussi: 665 VPA-07 – Kongoussi: 594 VPA-08 – Guibaré: 509 VPA-09 – Nasséré and Sabcé: 381 VPA-10 – Rouko and Sabcé: 553
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Continuous
Calculation method (if applicable):	For the determination of the number of usage days at household level for age group 3-4 during the fourth monitoring period, the latest start day of use of all constructed F3PA efficient cookstoves within the household will be taken in order to have conservative approach. Number of households included in the project (Units) are calculated based on days of usage of age group 3-4 during the fourth monitoring period related to one year.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	A part of the households in the project area of the 10 VPA's are polygamous. Each wife of the household included in the carbon project must have at least two F3PA efficient cookstoves. This is a local cooking requirement as one is for the Mush "Tô", the other for the sauce "Sauce". Additional cookstoves could be used for boiling water or preparing the soup. All the traditional three stone cookstoves for domestic use will be replaced by the F3PA efficient cookstoves. This means that according to the needs of the household, an un-predetermined number of project cookstoves will be constructed and used at household level. As the quantity of firewood consumed in the baseline is determined at household level, the number of households will be monitored instead of project cookstoves to determine the emissions reductions. Women will be trained by the tiipaalga instructors or leader women to build the project cookstoves themselves using local materials according a strict construction protocol. In tight collaboration of the project coordinator, the instructor and the leader women the logistical management, quality assurance of the project cookstoves according the construction protocol and the management of the project database recording all constructed project cookstoves will be ensured. *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**DF_{η}**
Unit	Fraction
Description	Discount factor to account for efficiency loss of project stoves
Measured/calculated/default	Default
Source of data	Gold Standard Simplified Methodology for Efficient Cookstoves
Value(s) of monitored parameter	Default value: 0.99 i.e., 1 % efficiency loss per year
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	N/A
QA/QC procedures:	N/A
Purpose of data:	Calculation of emission reductions

Additional comments:	The default value of 0.99 is used if stoves are found in good condition during annual surveys. For each year, the stoves of the age-group x-y should be physically verified. In case of progressive installations, stove of age-group 0 – 1 shall also be physically verified each year through a random sampling approach. The survey format described in the Monitoring Plan should be used to capture the required information. During annual surveys, if it is found that the project cookstoves are not in working conditions, the proportionate population of project cookstoves should be excluded from the project database, until these cookstoves are replaced with new cookstoves. A site visit by an Objective Observer with relevant technical background would be required at the time of first internal verification and then subsequently after every 2 years from the previous issuance. The Objective Observer shall use the guidance provided in the Monitoring Plan to carry out field studies.

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$DF_{b,stove,1}$**
Unit	Percentage
Description	Discount factor to account for the baseline stove use in project scenario p during the year 1
Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	0.77%
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the discount factor to account for the baseline stove use is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the baseline technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the discount factor to account for the baseline stove use in project scenario p of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	The discount factor for the baseline-stove shall be determined based on the number of meals cooked using the baseline stove. The required information shall be captured through sample surveys carried out following a random sampling approach for age-group 0-1 of the project stove. The impact of seasonal variation on use of baseline stove should be considered as part of the monitoring survey. The survey format for sample question to capture this information is described in the Monitoring Plan. In case of polygamous households the discount factor shall be determined for each cookstove set and the highest value of all cookstove sets within the household shall be used as representative discount factor for the household. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$DF_{b,stove,2}$**
Unit	Percentage
Description	Discount factor to account for the baseline stove use in project scenario p during the year 2
Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	2.25%

Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the discount factor to account for the baseline stove use is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the baseline technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the discount factor to account for the baseline stove use in project scenario p of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	The discount factor for the baseline-stove shall be determined based on the number of meals cooked using the baseline stove. The required information shall be captured through sample surveys carried out following a random sampling approach for age-group 1-2 of the project stove. The impact of seasonal variation on use of baseline stove should be considered as part of the monitoring survey. The survey format for sample question to capture this information is described in the Monitoring Plan. In case of polygamous households the discount factor shall be determined for each cookstove set and the highest value of all cookstove sets within the household shall be used as representative discount factor for the household. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$DF_{b,stove,3}$**
Unit	Percentage
Description	Discount factor to account for the baseline stove use in project scenario p during the year 3
Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	1.72%
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the discount factor to account for the baseline stove use is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the baseline technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the discount factor to account for the baseline stove use in project scenario p of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	The discount factor for the baseline-stove shall be determined based on the number of meals cooked using the baseline stove. The required information shall be captured through sample surveys carried out following a random sampling approach for age-group 2-3 of the project stove. The impact of seasonal variation on use of baseline stove should be considered as part of the monitoring survey. The survey format for sample question to capture this information is described in the Monitoring Plan. In case of polygamous households the discount factor shall be determined for each cookstove set and the highest value of all cookstove sets within the household shall be used as representative discount factor for the household. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**$DF_{b,stove,4}$**
Unit	Percentage
Description	Discount factor to account for the baseline stove use in project scenario p during the year 4
Measured/calculated/default	Measured
Source of data	Monitoring surveys
Value(s) of monitored parameter	1.30%
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	The measurement of the discount factor to account for the baseline stove use is based on qualitative information collected in the usage/monitoring survey. A question concerning the current use of the baseline technology is asked to each end user of the sample and is validated by the observation of the surveyor in order to determine the discount factor to account for the baseline stove use in project scenario p of each technology age category.
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	The discount factor for the baseline-stove shall be determined based on the number of meals cooked using the baseline stove. The required information shall be captured through sample surveys carried out following a random sampling approach for age-group 3-4 of the project stove. The impact of seasonal variation on use of baseline stove should be considered as part of the monitoring survey. The survey format for sample question to capture this information is described in the Monitoring Plan. In case of polygamous households the discount factor shall be determined for each cookstove set and the highest value of all cookstove sets within the household shall be used as representative discount factor for the household. See document *MS_Performance certification_MP4_20180812_v1.0*

Relevant SDG Indicator	**SDG 13, Climate Action**
Data/parameter:	**Number of tCO2e reduced by the project**
Unit	Ton of CO_2e
Description	Number of tCO_2e reduced thanks to the implementation of the project during the corresponding monitoring period.
Measured/calculated/default	Measured
Source of data	See the specific monitoring tables used for calculating this parameter
Value(s) of monitored parameter	93,441 tCO_2e
Monitoring equipment	N/A
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	See section E.3
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comments:	See Document *GS1340 - MP4 - Consolidated ER calculation v1.0*

D.3. Implementation of sampling plan

>> In parallel with the distribution of the F3PA efficient cookstoves, and as per monitoring plan in the respective registered VPA-DD's (VPA-01 till VPA-10), tiipaalga conducted the following monitoring activities:

Date	Activity	Purpose
Ongoing	Project database	Establish total distribution record to track number of households for which all baseline cookstove set(s) (comprising of several traditional three stone cookstoves for domestic use) have been replaced by project cookstove set(s)
15th of May – 8th of June, 2019	Monitoring survey	(i) To establish single usage rate factor of age group 0-1, age group 1-2, age group 2-3 and age-group 3-4 based on if the project cookstoves can be considered as 'in use' or 'not in use' and if the project cookstoves are in 'good condition' or 'not in good condition'; (ii) To establish single discount factor age group 0-1, age group 1-2, age group 2-3 and age group 3-4 to account for the baseline stove use; (iii) To measure the parameters regarding SDG 3 and SDG 5.

The parameters which need to be monitored through surveys for the 10 VPA's are (i) $U_{p,y}$ Usage rate in project scenario p during year y; and (ii) $DF_{b,stove,y}$ Discount factor to account for the baseline stove use in project scenario p during the year y. Since the two parameters of interest are assumed to be the same in each VPA at the time of sampling survey during the monitoring period and the start of the crediting period of the 10 VPA's lies within one month, a single survey with cross sampling of households has been undertaken using a single random sampling plan. The populations of all 10 VPAs are combined together, for which the sample size is calculated using the sampling guidelines described below.

The number of households of which each wife of the household (when polygamous) has replaced all traditional three stones cookstoves for domestic use with project cookstoves, is recorded in the project database (see data base records file). Only the households recorded in the database are part of the project activity.

Since the project activities started in February 2015, there are four age groups, i.e. 0-1 age group, 1-2 age group, 2-3 age group and 3-4 age group. The start of the crediting period of each household is considered as the latest construction date of all stoves within the cooking sets of the different wives within the household (See file *Tiipaalga - DR - ICS_20190416 - MP4 - Recent date per HH v1.0)*. For each household the number of technology-days during MP4 are calculated per age group: (i) age group 0-1 (i.e. construction date till construction date + 365 days), (ii) age group 1-2 (i.e. construction date + 365 days till construction date + 2 * 365 days), (iii) age group 2-3 (i.e. construction date + 2 * 365 days till construction date + 3 * 365 days), and (iv) age group 3-4 (i.e. construction date + 3 * 365 days till construction date + 4 * 365 days). The number of households per age-group are determined after cumulation of the technology-days per age group of the households in the project database divided by the number of days in a year, i.e. 365 days.

The minimum household sample size of each age group is determined according the following guidelines (according the Gold Standard Simplified Methodology for Efficient Cookstoves):

- Project target population < 300: Minimum sample size 30;
- Project target population 300 to 1000: Minimum sample size 10 % of group size;
- Project target population > 1000: Minimum sample size 100.

As the number of recorded households for the 10 VPA's together per age-group is more than 1000, the minimum sample size per age-group is 100. For this monitoring survey the household size was set at 150 households (see files *Sample MP4 AG 0-1_20190507*, *Sample MP4 AG 1-2_20190507, Sample MP4 AG 2-3_20190507* and *Sample MP4 AG 3-4_20190507*). The method of selecting households for the sample list for the monitoring survey is random sampling using the random functionality in excel (see file *Sampling MP4 - Dataset 20190507*). For all parameters that are monitored via sampling it is understood that only the age of the project cookstove has an influence. Therefore, no geographic representativeness is deemed necessary for

the selection of users participating in the sample groups. The monitoring surveys are performed by user interviews. Only people older than 18 years are interviewed.

The questions used during the survey are presented in the file "GS1340_VPA-01 to 10_Monitoring Survey_MP4"[6]. Apart from information for the sustainable development indicators, the survey has been built up in order to collect reliable data to calculate the usage rate $U_{p,y}$ per age group and the discount factor to account for the baseline stove use $DF_{b,stove,y}$ per age group.

The file *Sample MP4 - AG 0-1* contains the 150 at random selected households across VPA-01 to VPA-10 for the third monitoring survey of age group 0-1, whereas the file *Sample MP4 - AG 1-2* for age group 1-2, *Sample MP4 - AG 2-3* for age group 2-3 and *Sample MP4 - AG 3-4* for age group 3-4.

The file *MS_Performance certification_MP4_20180812_v1.0* of the monitoring survey contains the following data in worksheet "Group 2":

- Identifier (Unique internal ID number) which is the unique key of household info
- Identification data per wife: name, picture of wife with it stoves;
- Data on stoves used per wife: size of stoves, construction dates of each stove, location of stoves, frequency of usage, condition of stove …
- Data on cooking habits during dry and wet season;
- Data related to sustainable indicators.

Based on this information the usage rate $U_{p,y}$ is calculated per household in column R and the discount factor to account for the baseline stove use $DF_{b,stove,y}$ per households in column AS. The worksheet "Analysis" contains the evaluated parameters usage rate $U_{p,y}$ and discount factor to account for the baseline stove use $DF_{b,stove,y}$ per age group.

Out of the 600 at random selected households for the age group 0-1, 1-2, 2-3 and 3-4 thirty-seven (37) households have not been surveyed for the following reasons:

- VPA 02 - Alice - 595 - Cisse sadou (3-4): Not using the F3PA anymore;
- VPA 02 - Alice - 577 - dicko boukary (3-4): Not using the F3PA anymore;
- VPA 07 - Noellie - 1701 - sawadogo pegwende louis (2-3): Not using the F3PA anymore;
- VPA 03 - Bertille - 3314 - Maïga Boukari (1-2): Not using the F3PA anymore;
- VPA 09 - Denise - 4384 - Sawadogo Emai (1-2): Not using the F3PA anymore;
- VPA 08 - Antonie - 5668 - Kinda Pierre (0-1): Not using the F3PA anymore;
- VPA 09 - Denise - 382 - Ouedraogo Mathieu (3-4): Not using the F3PA anymore;
- VPA 07 - Noellie - 3700 - tamboura ousseni (1-2): Not using the F3PA anymore;
- VPA 03 - Bertille - 1161 – ouedraogo (2-3): Not using the F3PA anymore;
- VPA 03 - Bertille - 1323 - gonde aminata (2-3): Not using the F3PA anymore;
- VPA 07 - Noellie - 0817 - sawadogo albert (3-4): Not using the F3PA anymore;
- VPA 04 - Aguératou - 0679 - Niampa Abdou (3-4): Not using the F3PA anymore;
- VPA 04 - Aguératou - 1467 - KOMI TASSERE (2-3): Not using the F3PA anymore;
- VPA 08 - Antonie - 190 - Zagré patenema Abdoulaye (3-4): Not using the F3PA anymore;
- VPA 08 - Antonie - 1241 - Ouedraogo Moussa (1-2): Not using the F3PA anymore;
- VPA 08 - Antonie - 5212 - sawadogo madi (0-1): Not using the F3PA anymore;
- VPA 05 - Pauline - 182 - Sawadogo Abdoulaye (3-4): Not using the F3PA anymore;
- VPA 10 - Sylvie - 0798 - Ouedraogo Moumouni (3-4): Not using the F3PA anymore;
- VPA 09 - Denise - 163 - Sana Harouna (3-4): Not using the F3PA anymore;
- VPA 09 - Denise - 217 - Sawadogo Paul (3-4): Not using the F3PA anymore;
- VPA 01- Martine - 0278 - KONFE AWA (3-4): Wife Konfé Awa, the household is not living anymore in Namsiguia;
- VPA 01- Martine - 0679 - KONFE RASMANE (3-4): The chief of household has been expelled from the family;
- VPA 01 - Martine - 0695 - NYAMPA KADI (3-4): Not at home for family reasons. So absent during the monitoring survey, but HH is still using the project cookstoves;
- VPA 01 - Martine - 1689 - Ouermi Hamidou (2-3): Household has temporally moved for security reasons;

[6] Document is in French. However, translation of the questions is foreseen in the monitoring survey result file "Perfomance certification_MP3_20180615_v0.1"

- VPA 01 - Martine - 3899 - Guirakoya Sita (1-2): Household has moved to Cote d'Ivoire;
- VPA 02 - Alice - 0486 - MAIGA FATABA (3-4): Household has moved to Bobo;
- VPA 02 - Alice - 3357 - Barry Hamidou (1-2): Household has moved to Kongoussi;
- VPA 02 - Alice - 3386 - Sawadogo Salifou (1-2): Household is not living anymore in Nioubila;
- VPA 03 - Bertille - 0028 - ouedraogo issa (3-4): Household has moved to mining zone;
- VPA 03 - Bertille - 0004 - Ouedraogo Boureima (3-4): Household has moved to the city;
- VPA 04 - Aguératou - 1420 - KOMI NOUFOU (2-3): Household has moved to Cote d'Ivoire;
- VPA 05 - Pauline - 3770 - ouedraogo Harouna (1-2): Household has moved (woman divorced, husband living in Ouagadougou, and children living in another village);
- VPA 06 - Salamata - 1139 - Zoaga Mahamoudou (2-3): Household has moved to Cote d'Ivoire;
- VPA 07 - Noellie - 0726 - badini rasmata (3-4): Household has moved to Djibo;
- VPA 10 - Sylvie - 5030 - Sawadogo Daniel (0-1): Only one F3PA cookstove, meaning that other F3PA cookstove is broken;
- VPA 10 - Sylvie - 0669 - Ouedraogo Yaya (3-4): Only one F3PA cookstove, meaning that other F3PA cookstove is broken;
- VPA 10 - Sylvie - 209 - Sawadogo Abel (3-4): Only one F3PA cookstove, meaning that other F3PA cookstove is broken;

For these 37 households a usage rate $U_{p,y}$ has been accounted of 0%.

The surveyed households are per age group presented with pictures of stove users and stoves in the following files: *GS1340_VPA1-10_List of surveyed HH MP4 AG 0-1_v1.0*, *GS1340_VPA1-10_List of surveyed HH MP4 AG 1-2_v1.0*, *GS1340_VPA1-10_List of surveyed HH MP4 AG 2-3_v1.0* and *GS1340_VPA1-10_List of surveyed HH MP4 AG 3-4_v1.0*.

The following points were considered when evaluating the usage rate $U_{p,y}$:

- All project cookstoves within the sample are assessed if they are still operational. If one stove user doesn't use any of its project cookstoves, the corresponding household is considered as drop-off;
- The working conditions of project cookstoves are evaluated on the status (i) Green: the stove is in good working conditions, (ii) Orange: the stove is in acceptable working conditions, but needs some maintenance activities; and (iii) Red: the stove is not working well, and needs to be reconstructed (see section C for more details). A household with at least one red project cookstove is considered as a drop-off;
- If a stove-user migrated even for a temporary period, the corresponding household is considered as a drop-off;

Based on the collected data during the survey for monitoring period 4 the usage rate $U_{p,1}$ of age group 0-1 is evaluated at 94.67%, whereas for usage rate $U_{p,2}$ of age group 1-2 at 84.11%, for usage rate $U_{p,3}$ of age group 2-3 at 87.92% and for usage rate $U_{p,4}$ of age group 3-4 at 73.15%. In total 91 households out of the 600 households surveyed across the four age groups had a usage rate of 0% because of too bad condition of at least one F3PA efficient cookstove (status red), migration of the household, broken F3PA efficient cookstoves or death of the stove user. All other project cookstoves were used and in operational conditions.

The discount factor to account for the baseline stove use is calculated based on the number of meals that have been cooked with the baseline stove during the monitoring period. The impact of dry and wet season on the baseline stove use has been evaluated. The baseline stove usage has been questioned in the survey in two ways (see *MS_Performance certification_MP4_20180812_v1.0*): (i) relative based on a week usage during dry and wet season (column AI till column AR); (ii) absolute based on total number of usages during dry and wet season (column AZ and BG).The following points were considered when evaluating the discount factor to account for the baseline stove use $DF_{b,stove,y}$:

- The wet season starts on the 1st of June and ends the 31nd of October, which is 153 days;
- Usage of baseline stove during wet and dry season has been surveyed, as well as the number of meals cooked during dry and wet season;
- Based on the number of meals cooked with the baseline cookstove compared to the number of cooked meals, the baseline usage fraction is calculated per stove user. In the case of more than one stove user per household, the highest value will be taken in order to identify the baseline cookstove usage at household level;

- In case the two ways of baseline usage reporting (relative on weekly basis and absolute) didn't match, the highest baseline usage has been calculated for the corresponding household;
- The discount factor for the baseline stove use is based on the average baseline stove use fraction of all the households within the sample;
- If a household has dropped off when evaluating the usage rate, it is not considered when calculating the average baseline stove use fraction;
- A conservative approach has been considered when evaluating the number of meals cooked with the baseline stove.

Based on the collected data during the survey, the baseline stove usage fractions have been evaluated at 0.77% for age group 0-1, 2.25% for age group 1-2, 1.72% for age group 2-3 and 1.30% for age group 3-4. This means that, on average, approximately 1 to 2 meals out of 100 meals are cooked with the baseline stove which can be considered as low.

SECTION E. Calculation of SDG outcomes

E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

a) SDG 1, No poverty

Not applicable, the direct outcome is calculated, see section E.3.

b) SDG 3, Good health and well-being

Not applicable, the direct outcome is calculated, see section E.3.

c) SDG 4, Quality Education

Not applicable, the direct outcome is calculated, see section E.3.

d) SDG 5, Gender equality

Not applicable, the direct outcome is calculated, see section E.3.

e) SDG 7, Affordable and clean energy

Not applicable, the direct outcome is calculated, see section E.3.

f) SDG 13, Climate Action

The methodology directly provides equation for emission reductions (without separate baseline, projector leakage emission reduction equations). See section E.3. for the calculation of the emission reductions.

E.2. Calculation of project value or estimation of project situation of each SDG outcome

a) SDG 1, No poverty

Not applicable, the direct outcome is calculated, see section E.3.

b) SDG 3, Good health and well-being

Not applicable, the direct outcome is calculated, see section E.3.

c) SDG 4, Quality Education

Not applicable, the direct outcome is calculated, see section E.3.

d) SDG 5, Gender equality

Not applicable, the direct outcome is calculated, see section E.3.

e) SDG 7, Affordable and clean energy

Not applicable, the direct outcome is calculated, see section E.3.

f) SDG 13, Climate Action

The methodology directly provides equation for emission reductions (without separate baseline, projector leakage emission reduction equations). See section E.3. for the calculation of the emission reductions.

E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

a) SDG 1, No poverty

Number of leader women (Monitrice endogène) who benefit from microcredit = Number of leader women (Monitrice endogène) who benefit from microcredit during the monitoring period

b) SDG 3, Good health and well-being

Smoke level reduction = (Number of stove users perceiving less smoke since the implementation of F3PA efficient cookstoves) / (Number of respondents)

Incidence of coughing reduction = (Number of stove users perceiving less incidence of coughing since the implementation of F3PA efficient cookstoves) / (Number of respondents)

Incidence of respiratory illness reduction = (Number of stove users perceiving less incidence of respiratory illnesses since the implementation of F3PA efficient cookstoves) / (Number of respondents)

Incidence of itchy eyes reduction = (Number of stove users perceiving less incidence of itchy eyes since the implementation of F3PA efficient cookstoves) / (Number of respondents)

c) SDG 4, Quality Education

Number of trainings initiatives for staff involved in the programme = Number of trainings initiatives for staff involved in the programme during the monitoring period

Number of workshops carried out for women = Number of workshops carried out for women during the monitoring period

d) SDG 5, Gender equality

Proportion of stove users perceiving reduced amount of time spent on fuel collection = (Number of stove users perceiving reduced amount of time spent on fuel collection) / (Number of respondents collecting wood fuel)

Activities carried out by women during saved time:

Domestic tasks$_p$ = (Number of women using their saved time to do domestic tasks) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Income generating activities$_p$ = (Number of women using their saved time to do income generating activities) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Field labour$_p$ = (Number of women using their saved time to do field labour) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Gardening$_p$ = (Number of women using their saved time to do gardening) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Participation to a literacy program$_p$ = (Number of women using their saved time to participate to a literacy program) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Community work$_p$ = (Number of women using their saved time to do community work) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Religious activities$_p$ = (Number of women using their saved time to participate to religious activities) / (Number of women considering they save time thanks to the F3PA efficient cookstoves)

Proportion of stove users perceiving reduced amount of money spent on wood fuel purchase = (Number of stove users perceiving reduced amount of money spent on wood fuel purchase) / (Number of respondents purchasing fuel)

Usage of saved money by women:

School fees$_p$ = (Number of women using their saved money for the payment of school fees) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Purchase of medical drugs$_p$ = (Number of women using their saved money for the purchase of medical drugs) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Purchase of food$_p$ = (Number of women using their saved money for the purchase of food) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Investment for field crops$_p$ = (Number of women using their saved money to invest in field crops) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Purchase of equipments$_p$ = (Number of women using their saved money to purchase equipments like mobile, bicycle, …) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Income generating activities$_p$ = (Number of women using their saved money for income generating activities) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

Savings$_p$ = (Number of women using their saved money for their savings) / (Number of women considering they save money thanks to the F3PA efficient cookstoves)

e) SDG 7, Affordable and clean energy

Number of F3PA efficient cookstoves disseminated$_p$ = Number of F3PA efficient cookstoves included in the project database for project scenario p

f) SDG 13, Climate Action

The methodology directly provides equation for emission reductions (without separate baseline, projector leakage emission reduction equations). The emission reduction for each VPA are calculated using the following equation. Some of the parameters have the same value for each VPA, whereas some parameters will be VPA dependent.

$$ER_y = \sum_{0to1}^{xtoy} N_{P,y} * P_y * U_{P,y} * (f_{NRB,y} * EF_{b,fuel,CO2} + EF_{b,fuel,nonCO2}) * (1 - DF_{b,Stove,y})$$

Where

$N_{p,y}$ Number of households with project cookstoves of each age group operational in

	the year y – VPA dependent
P_y	Quantity of firewood that is saved in the year y (tones per household in year y) – VPA dependent
$U_{p,y}$	Usage rate for project cookstoves in year y, based on adoption rate and drop off rate revealed by usage surveys (fraction) – Monitored value equal for all VPA's;
$f_{NRB,y}$	Factional non-renewability status of wood fuel during year y - Default value equal for all VPA's
$EF_{b,fuel,CO2}$	CO2 emission factor of firewood that is substituted or reduced – Default value equal for all VPA's
$EF_{b,fuel,nonCO2}$	Non CO2 emission factor of firewood that is substituted or reduced – Default value equal for all VPA's
$DF_{b,stove,y}$	Usage of baseline cookstove during the year y (fraction) in project scenario - Monitored value equal for all VPA's;
X	y-1
Y	Year of the crediting period

Determination of quantity of biomass saved (P_y):

Quantity of firewood that is saved (P_y) is estimated using the following equation:

$$P_y = B_{b,y} * (1 - \frac{\eta_b}{\eta_{p,y}})$$

Where:

P_y	Quantity of firewood that is saved in the year y (tones per household in year y) – VPA dependent
$B_{b,y}$	Quantity of firewood consumed in baseline scenario during year y (tones per household per year) – VPA dependent
$\eta_{p,y}$	Efficiency of project cookstove in year y (fraction) – Value equal for all VPA's
η_b	Efficiency of the baseline cookstove being replaced (fraction). A default value of 10% shall be used if the replaced cookstove is a three stone fire, or a conventional device without a grate or a chimney i.e. with no improved combustion air supply or flue gas ventilation - Default value equal for all VPA's: 0.1
y	Year of the crediting period

Determination of quantity of fire wood consumed in the baseline ($B_{b,y}$):

The firewood consumed is the estimated average annual consumption of firewood per household (tones/year), which may be derived using option (c) of the methodology: minimum service level i.e. energy derived from the combustion of 0.5 tonnes per capita per year as the default baseline biomass consumption. The average household size per municipality is available in the "Recensement général de la population et de l'habitation (RGPH) de 2006 du Burkina Faso"[7] or the general census of the population and habitat of Burkina Faso, table 15.

Determination of project cookstove efficiency ($\eta_{p,y}$ and η_p):

Efficiency of project cookstove in year y ($\eta_{p,y}$) is estimated as follows:

$$\eta_{p,y} = \eta_p * (DF_\eta)^{y-1} * 0.94$$

Where

$\eta_{p,y}$	Efficiency of project cookstove in year y (fraction) - Calculated value equal for all VPA's

[7] INSD, recensement général de la population et de l'habitation de 2006, juillet 2008, Ministère de l'Economie et des Finances, p43 (tableau 15), 52 pages

η_P	Efficiency of project cookstove (fraction) determined at the start of the project activity – Determined value using WBT equal for all VPA's
DF_η	Discount factor to account for efficiency loss of project cookstove per year of operation (fraction) – Default value equal for all VPA's
0.94	Adjustment factor to account for uncertainty related to project cookstove efficiency test

Calculation of leakage

As defined under The Gold Standard Simplified Methodology for Efficient Cookstoves, the net emission reductions (ERy) for a micro-scale programme of activities (mPOA) need to be discounted by a factor of 0.95 to account for leakages related to non-renewable biomass saved by the project activity.

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 1, No poverty **Number of leader women (Monitrice endogène) who benefit from microcredit**			873
SDG 3, Good health and well-being **Proportion of households perceiving less often smoke levels, incidence of coughing, incidence of respiratory illness, incidence of itchy eyes**			Smoke level reduction: 99.7% Incidence of coughing reduction: 99.7% Incidence of respiratory illness reduction: 100.0% Incidence of itchy eyes reduction: 100.0%
SDG 4, Quality Education **Parameter 1: Number of trainings initiatives for staff involved in the programme** **Parameter 2: Number of workshops carried out for women**			Parameter 1: 1 Parameter 2: 383
SDG 5, Gender equality **Proportion of stove users perceiving reduced amount of time spent on wood fuel collection and/or reduced amount of money spent on wood fuel purchase**			Reduced amount of time spent on wood fuel collection: 99.6% Reduced amount of money spent on wood fuel purchase: 100%
SDG 7, Affordable and clean energy **Number of F3PA efficient cookstoves**			86,533

disseminated			
SDG 13, Climate Action **Number of tCO2e reduced by the project**			GS2456 (VPA-01): 9,485 VER GS3516 (VPA-02): 9,505 VER GS3517 (VPA-03): 9,192 VER GS3518 (VPA-04): 9,872 VER GS3519 (VPA-05): 9,436 VER GS3520 (VPA-06): 9,099 VER GS3521 (VPA-07): 8,636 VER GS3522 (VPA-08): 8,216 VER GS3523 (VPA-09): 10,000 VER GS3524 (VPA-10): 10,000 VER **Total: 93,441 VER**

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 13	GS2456 (VPA-01): 9,725 VER GS3516 (VPA-02): 9,725 VER GS3517 (VPA-03): 9,734 VER GS3518 (VPA-04): 9,729 VER GS3519 (VPA-05): 9,728 VER GS3520 (VPA-06): 9,734 VER GS3521 (VPA-07): 9,734 VER GS3522 (VPA-08): 9,728 VER GS3523 (VPA-09): 9,724 VER GS3524 (VPA-10): 9,733 VER **Total: 97,294 VER**	GS2456 (VPA-01): 9,485 VER GS3516 (VPA-02): 9,505 VER GS3517 (VPA-03): 9,192 VER GS3518 (VPA-04): 9,872 VER GS3519 (VPA-05): 9,436 VER GS3520 (VPA-06): 9,099 VER GS3521 (VPA-07): 8,636 VER GS3522 (VPA-08): 8,216 VER GS3523 (VPA-09): 10,000 VER GS3524 (VPA-10): 10,000 VER **Total: 93,441 VER**

E.6. Remarks on difference from estimated value in approved PDD

The difference between the actual values achieved during monitoring period 4 and the estimated value of year 4 in the registered PDD can mainly be attributed to lower usage rate than expected.

SECTION F. Stakeholder inputs and legal disputes

F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

No inputs/grievances have been received for the project during the monitoring period.

F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

No open follow up actions have been identified in the previous monitoring period.

F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

No legal contest or dispute has arisen.