THE GOLD STANDARD MICRO-SCALE SCHEME PROJECT DESIGN DOCUMENT FORM - Version 2.2

CONTENTS

Annexs

SECTION A. General description of micro-scale project activity

A.1 Title of the micro-scale project activity:

Title: Improved Cook stoves in Guinea
Version: 1.1
Date: March 2015

A.2. Project participants:

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
France	Bolivia Inti Sud Soleil (BISS) Private entity (Non-profit association)	Yes
France	Coopération Atlantique-Guinée 44 (CAG44) Private entity (Non-profit association)	Yes
Guinea	APEK-Agriculture Private entity (Non-governmental Organization)	Yes

The project is being implemented in Guinea as a voluntary carbon project. As such, a formal host country approval is not required. However, the Guinean DNA has been informed of the project and he is regularly informed of the project evolution.

A.3 Description of the micro-scale project activity:

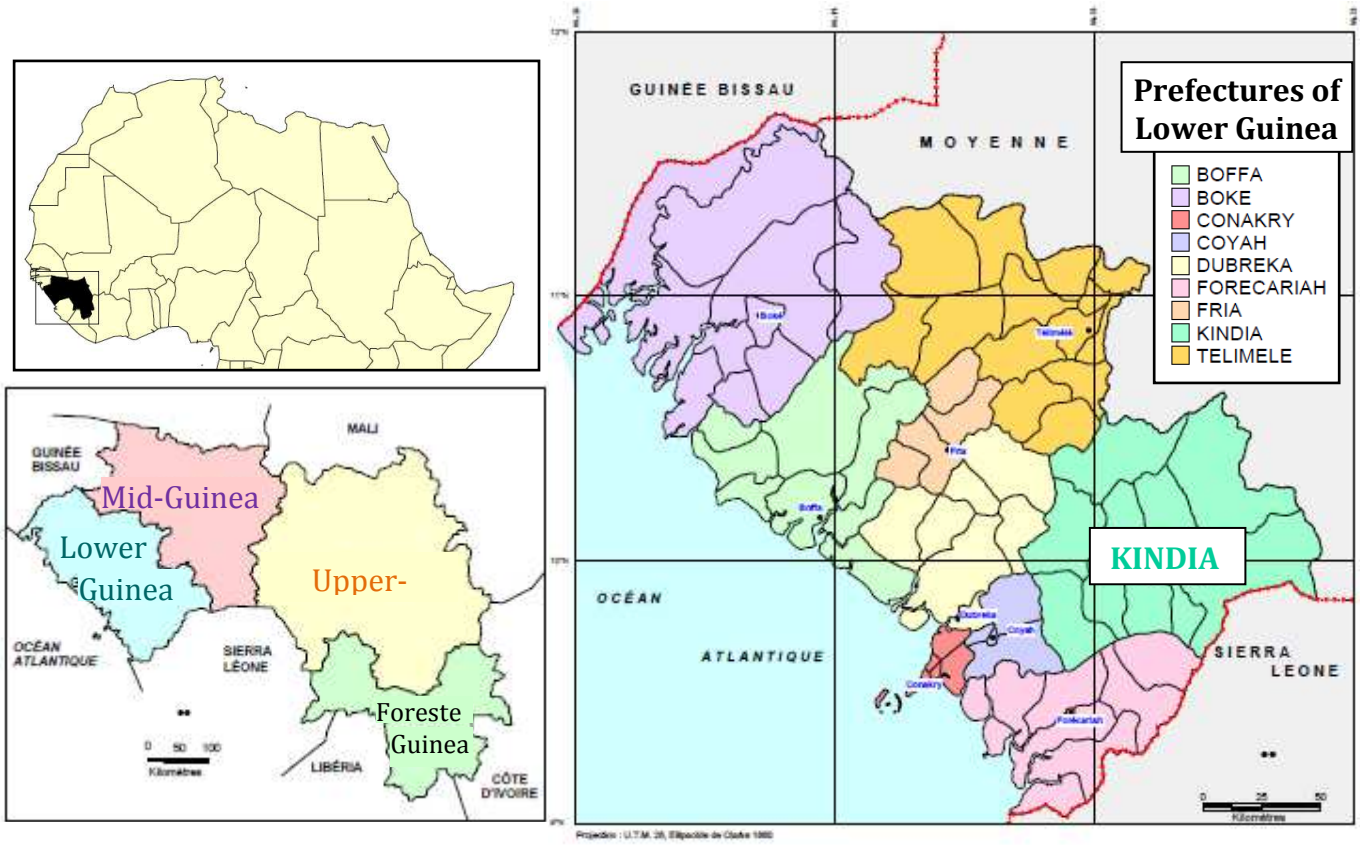
A.3.1. Location of the micro-scale project activity:

During the first phase of the project (January 2010-January 2012), the project was only taking place within the Prefecture of Kindia (coloured in green on the map), which is part of the natural region of Lower Guinea ("Guinée Maritime"), located on the western part of Guinea. The project has then begun to expand to the entire region of Lower Guinea from 2013.

The micro-scale project activity includes the 2 prefectures of the Region of Kindia: prefectures of Kindia and Télimélé.

A.3.1.1.	Host Country:

Republic of Guinea.



A.3.1.2.	Region/State/Province etc.:

Natural region of Lower Guinea (not to confuse with the Administrative Region of Lower Guinea, which additionally includes the Prefectures of Gaoual and Koundara –covering an area of 7000 km2- located in the natural region of Mid-Guinea).
This territory covers an area of 36 000 km2.

A.3.1.3. City/Town/Community etc:

The project activity is implemented in all villages and households in the above described target area. It deals with urban, peri-urban and rural households in the prefectures of Kindia and Télimélé.

A.3.1.4. Details of physical location, including information allowing the unique identification of this micro-scale project activity:

CAG44 is the implementing organization and will conduct the project from its offices in Kindia, Quartier Féréfou.

Latitude: 10° 03' 00" N
Longitude: 12° 52' 00" W

A.3.2. Description including technology and/or measure of the micro-scale project activity:

Context of the project:

In Guinea, firewood and charcoal meet around 98 % of the households energy needs.
Demographic growth leading to an increasing pressure on the woodlands, deforestation is currently progressing at the rhythm of 6 800 000 m3/year. According to FAO figures, the Guinean forest area has decreased by around 10% during the last 20 years[1]. This situation leads to numerous irreversible consequences, such as local ecosystems damaging, water cycle derangement or soil erosion.
Women and children are often in charge of wood collection, a truly time-consuming and sometimes dangerous task which can take up to 15 hours of work per week to meet the needs of one household. Generally, cooking is then done on open low efficiency hearths. Consuming a high quantity of firewood and generating a lot of smokes, these open hearths are known to cause in the long run serious respiratory diseases within exposed groups.

General description of the project:

The purpose of the project is to improve conditions of Guinean households in Kindia Prefecture and fight against global warming and deforestation promoting the use of an efficient cook stove (vernacular name: ≪ kolpot fotonkante ≫, which means “the cook stove that helps the forest” in susu). These improved cook stoves (ICS) are used in substitution of the traditional “3 stones” open hearths.

[1] FAO, http://www.fao.org/forestry/country/32183/en/gin

Public cooking demonstration comparing the efficiency of an improved ICS with a 3-stones hearth

Benefits of the ICS for the users are multiples:

> Users save money from the purchase and collection of traditional fuel (firewood)
> Users save time from the collection of firewood and from cooking
> The sanitary conditions of women and children are improved due to less smoke exposure, as smoke emissions resulting from firewood combustion are proven to cause numerous diseases
> On the environmental aspect, the project helps to reduce consumption of firewood; it therefore relieves some of the pressure on the forest resources and can indirectly avoid deforestation and some of its harmful consequences.

Players implicated in the project:

The project is promoted by a Franco-Guinean consortium constituted of three NGOs:

> ”Bolivia Inti-Sud Soleil” (BISS) is a French NGO working in the field of ecological cooking. Its main objective is to develop, experiment, exchange and promote renewable energies use in developing countries. The association work is grounded on two main elements: development of ecological cooking (especially solar) in the Andes, France and Africa (in total, more than 20 000 stoves spread throughout the world); as well as information diffusion and experience exchange in France. The activities in Bolivia got registered under the GS process in September 2011 (Project ID: GS813) and are the stage “listed” in Peru (Project ID: GS814)

> “Coopération Atlantique-Guinée 44” (CAG44) is a French NGO which has been working for the development of Guinea (and mainly the Prefecture of Kindia) for almost 20 years through

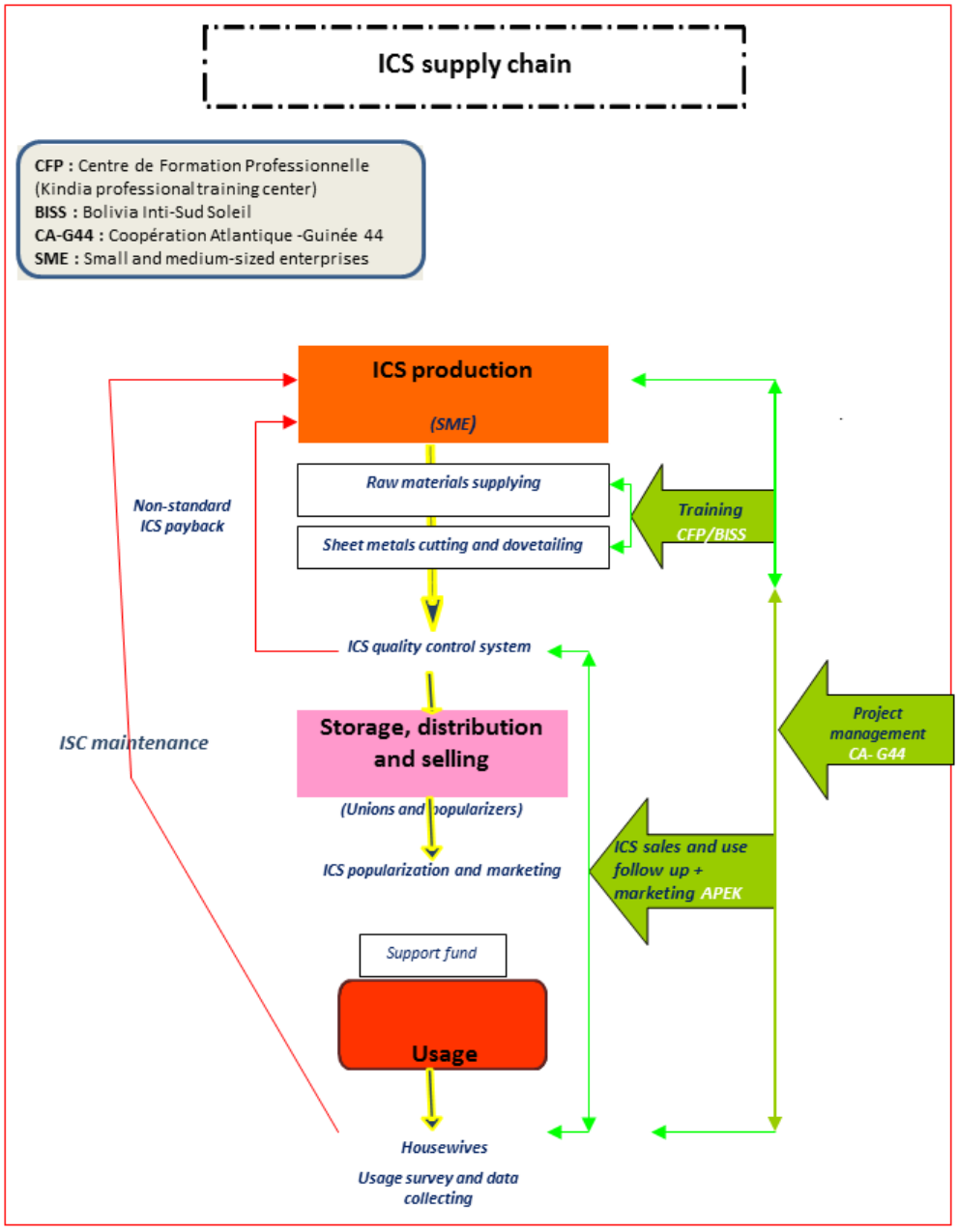
international aid. The main fields of intervention are WASH, agriculture and youth socioeconomic integration, through programs lead in cooperation with local collectivities and French and Guinean civil society organizations.

> “Association pour la Promotion Economique de Kindia” (APEK) is a Guinean NGO in the field of rural development, constituted of rural unions. This organization promotes rural economic development projects and services and support to farmer groupings.

Operational partners include:

> “Centre de Formation Professionnelle” (CFP): Kindia professional training center, including among others a pots and pans section (involved in the project pilot phase).

The diagram above shows the tasks of each party in the project system:



The project is implemented by a local team, mainly constituted of a project manager (CAG44) and five facilitators and one supervisor (APEK), in charge of ICS promotion covering all Lower Guinea (one facilitator per area, 5 areas all in all).

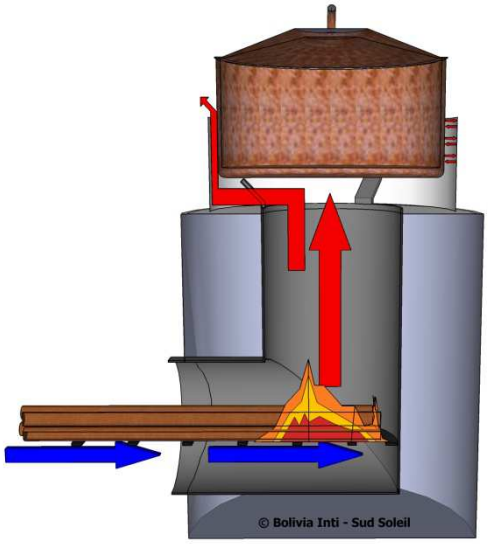
To do so, they organize public demonstrations in rural village and urban district, showing in practical terms the efficiency of the ICS. These public events are also the occasion to increase public awareness on deforestation. Some of these interventions are recorded and broadcasted on the Kindia Rural Radio (which is listened in the entire region of Lower Guinea).

A facilitator with women during a public demonstration

Popularizers are women members of rural unions in charge of ICS sale. They are trained by the project on the use of the ICS and made aware of the importance of forest management. In their zone, they explain how the ICS works and how to use it, and then receive the equivalent of 20 % of the ICS price for each one they sell.

Description of the technology

External view of an ICS



Traversal section of the ICS

The original technology is the “Rocket Stove”, designed by the Aprovecho Research Center (USA), with whom BISS has established a technical partnership. This model of ICS is proven to have excellent overall performance and low pollutant emissions[2]. Nevertheless, the ICS design was specially adapted to the local conditions: a field study was lead to adapt its dimensions to the pots used by the beneficiaries on one hand; and on the other hand to make the ICS easily workable by the local smiths and compatible with the material available locally. It resulted in the ≪ kolpot fotonkante ≫, a light cook stove of simple design ensuring a complete combustion with no visible smoke and only small amounts of ash.

The ICS are constituted of a bend stovepipe, a grate, a cover equipped with three small blocks, an outer skin fitted with handles. The ICS serial number is directly engraved on the cover, and all components are made of iron covered with aluminum paint.

Firewood is introduced in the lower part of the device on a grate that allows air flowing and preheating inside the stovepipe. Thermal insulation of the combustion chamber located inside the stovepipe is ensured by ash placed between the stovepipe and the outer skin, associated with an extra adjustable line. This last piece prevents the wind from dispersing the heat, which is this way concentrated towards the pot.

Its light weight allows the users to move it easily in function of weather conditions (wind, rain) or needs (cooking in the fields or at a neighbor’s for example).

[2] J.J. Jetter, P. Kariher, Solid Fuel Household Cook Stoves: Characterization of Performance and Emissions, Washington, D.C.: U.S. Environmental Protection Agency, Office of Research and Development U.S., Biomass and Bioenergy 33 (2009) 294–305

Results achieved as of March 2015

Activities	Indicators	Timeline
ICS promotion and Natural Ressources Management awareness-making campaigns	1 meeting with representatives of 11 Kindia Women Farmers Unions	January 2010
	37 comparative cooking workshops held with more than1300 participants (mainly women)	From 2010 until 1st semester 2014
	1 university conference in Kindia with more 300 students	24/04/2010
	1 local stakeholder consultation with more than 100 participants	10/05/2010
	1 contract for service provision with the Kindia Rural Radio to broadcast various types of programs ; 12 radio statements	April-december 2011 and 2013-2014
ICS users training and follow-up	114 women ICS users interviewed by the facilitators about their ICS use and management ; continuous follow-up by the 4 facilitators (APEK)	2010 and 1st semester 2011 ; 2013-2014
Implementation of an ICS economic network	5 facilitators recruited, trained and integrated to the APEK team in charge of rural animation for NRM (Natural Resources Management) awareness-making and ICS promotion	From 2010 until 2nd january 2015
	93 "women ambassadors" from 7 Kindia Women Farmers Unions trained to ecological cooking and sensitized to NRM	
	135 students of the Kindia PTC are trained on measuring and cutting iron sheets intended to be assembled into ICS	
	30 blacksmiths equipped with tools and trained to make ICS	
	7400 ICS produced of which 3350 sold in the prefectures of Kindia and Télimélé	
	10 SMEs (Small and Medium sized Enterprises) specialized in boiler have been trained and produce ICS in different localities	
	24 production agreement (various number of devices) have been signed with these 10 SMEs	
	34 stores established in Lower Guinea	
	8 training workshops organized by the "women ambassadors"	
Support to Kindia Region for decentralization and local development	Framework agreement with the 10 local governments (1 urban + 9 rural) : capacity building and local development projects management in the fields of WASH, Youth, Environment, and intercollectivity	20 years-long experience

A.3.3 Estimated amount of emission reductions over the chosen crediting period:

Years	Estimation of emission reductions (T CO2e/year)
2014	**6722**
2015	**9531**
2016	**10803**
2017	**10863**
2018	**10202**
2019	**10023**
2020	**10005**
2021	**10218**
2022	**10728**
2023	**10563**
Total emission reductions (T CO2e)	**99656**
Total number of crediting	10
Annual average over the crediting period of estimated reductions (T CO2e)	**9966**

A.3.4. Public funding of the micro-scale project activity:

Various organizations have funded the project activity under the VER initiatives, but no public funding is used in the implementation of the project activity. Also, no public announcement has been made in the last three years of the project going ahead without carbon revenues keeping in align with the Gold Standard rules and regulations.
The official Declaration of Non-Use of Official Development Assistance can be found in Annex 2.

SECTION B. Application of an existing baseline and monitoring methodology or of a new methodology submitted as part of this project activity

B.1. Title and reference of the existing or new baseline and monitoring methodology applied to the micro-scale project activity:

The project follows "The Gold Standard Simplified Methodology for Efficient Cookstoves". This methodology covers both the baseline and monitoring requirements for such a project.

B.2 Justification of the choice of the methodology and applicability:

"This methodology is applicable to programs or activities introducing technologies and/or practices that reduce or displace greenhouse gas (GHG) emissions from the thermal energy consumption of households and non-domestic premises.
Examples of these technologies include the introduction of improved biomass or fossil fuel cook Stoves."
The improved cook-stoves spread by the project correspond to this definition.

The project meets the following conditions of the methodology:

1. The project boundary can be clearly identified as the project activity is limited to the stove sales within Guinea. The stoves counted are not part of any other voluntary or compliance carbon finance project boundary because there is no similar registered VER-GS or CER-GS project activity in the same region. As of March 2015, there was no registered VER-GS or CER-GS project in Guinea.
The stoves are uniquely identifiable in the field via an identification number graved on the stoves' frame. CAG44 only works with dedicated artisans working full or part- time on the project.

2. Each stove has continuous useful energy outputs of less than 150 kW, as outlined in the box below:

$$Energy\ Output\ [kW] =$$

$$NCV_{wood}\ [kJ/kg] * Thermal\ efficiency\ [\%] * Wood\ Consumption\ [kg/day]/(24 * 60 * 60)\ [s/day]$$

$$< 15\,000 * 1 * 3{,}8\ /\ 86\,400$$
$$< 0{,}7\ kW$$
$$< 150\ kW$$

Remark: no water boiling test was done during the project, so an ideal thermal efficiency of 100% was taken in the calculations to maximize the final energy output, and the daily consumption

measured in urban areas during the Kitchen Test. Still, the result of this calculation is a useful energy output 200 times lower than the upper limit.

3. The project aims at replacing traditional 3-stones hearths by ICS. Potential fuel consumption due to parallel use of baseline technology as a backup to ICS is accounted by the kitchen performance test.
End-users are encouraged by the project to stop the use of the 3-stones hearths, but, as written in the methodology "The removal and continued non-use of three stone fires and other easily constructed traditional devices is in many cases unlikely and impractical to monitor".

4. All end users, who are the default owner of emission reductions, are notified they waive ownership of ERs upon sale of each stove. This is done via a rights waiver included inside each stove at point of sale to make the customer aware of them yielding ownership rights over emission reductions to the consortium implementing the project.

B.3. Description of the project boundary:

	Projet Boundary	Fuel Collection Area	Target Area
Definition	Physical geographical sites of the project technologies	Area within which woody biomass can reasonably be expected to be produced, collected and supplied	Regions or towns within a single country, or across multiple adjacent countries, where the considered baseline scenario(s) is/are assessed to be uniform across political borders. The target area provides an outer limit to the project boundary in wich the project has a target population.
Project activity	Natural Region of Lower Guinea		Prefectures of Kindia and Télimélé

The following emission sources are included in the project boundary:

	Source	Gas	Included?	Justification / Explanation
Baseline	Heat delivery, production of fuel, and transport of fuel	CO_2	Yes	Important source of emissions
		CH_4	Yes	Important source of emissions
		N_2O	Yes	Can be significant for some fuels

	Source	Gas	Included?	Justification / Explanation
Project	Heat delivery, production of fuel, and transport of fuel	CO_2	Yes	Important source of emissions
		CH_4	Yes	Important source of emissions
		N_2O	Yes	Can be significant for some fuels

B.4. Description of the baseline and its development as per the chosen methodology:

The baseline scenario is defined by typical fuel consumption among the target population prior to adopting the project technology. The following baseline studies are required for the baseline scenario:

- Baseline non-renewable biomass (NRB) assessment,
- Baseline survey (BS) of target population characteristics,
- Kitchen Performance Test (KPT) of fuel consumption.

Step 1: Baseline non-renewable biomass (NRB) assessment

According to the information note written by the CDM executive board, some default values of fraction of non-renewable biomass have been assessed for Least Developped Countries (LDC) and small island developing states. Indeed, the designated national authority (DNA) – Mamadou Saliou Diallo, accepted the 96% default value for the fraction of non-renewable biomass on 26th December 2013[3].

To conclude, Xnrb = 96%.

[3] https://cdm.unfccc.int/DNA/fNRB/index.html

Step 2: Baseline survey

The purpose of the kitchen survey is to define clusters or customer groups with homogenous emission reduction characteristics, in order to plan kitchen tests which quantify wood reduction arising from the introduction of an ICS. The baseline survey should be carried out using representative and random sampling using the minimum sample size of 100 households among the targeted population.

The baseline survey was led by a team of 6 APEK interviewers between the 12th and the 28th of January, 2011 in rural and urban households of Kindia Prefecture randomly chosen. In each zone covered by the survey, the surveyors asked the ambassador for women (without ICS) to survey. All households were visited, no telephone interviews were conducted.

As required by the methodology, the data collected were the following:

1. User follow-up

a. Name of user
b. Address or location (rural or urban area)
c. Mobile telephone number (when possible)
d. Profession
e. Age
f. Name of the household representative

2. User characteristics

a. Number of people served by baseline technology
b. Typical baseline technology usage tasks (cooking, heating, ...)

3. Baseline technology and fuels

a. For each type of meal cooked: quantity, frequency, time required, baseline technology used, and quantity of fuel necessary
b. Types of fuels used, estimated quantities and frequency, source (purchased or hand-collected), prices paid, distance from purchasing area, persons usually collecting

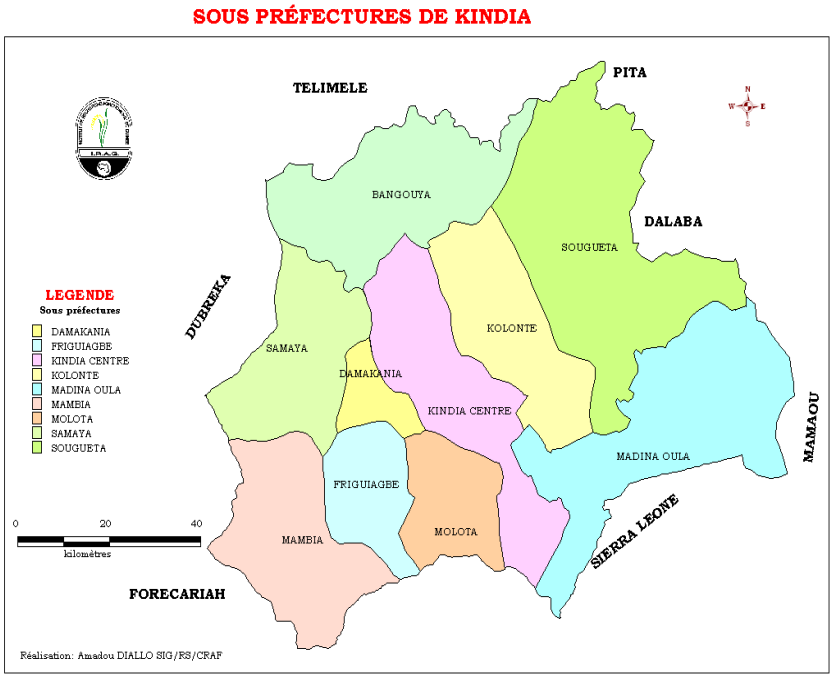
For more details, the full questionnaire can be found in Annex 3.

The breakdown of the KSs by area, commune, and district is shown below:

- Kindia: 39 households including
  - 24 in rural districts (Comoya (9), Koba Pastoria (5) and Bocaria (10))
  - 15 in urban districts (Koliadi (7), Féréfou (4), Manquepas (2), Abattoir (1), Camp Kele Bourema (1))

- Friguiagbe (rural commune): 14 households
- Mambia (rural commune): 12 households
- Molota (rural commune): 10 households
- Kolenten (rural commune): 10 households
- Madina Oula (rural commune): 10 households
- Samaya (rural commune): 5 households

See map below to locate each rural commune:



Among other results, the survey concluded on a clustering based on the type of geographical area: rural or urban.

The major trends shown by the study are the following:

- In rural zones, households are slightly wider and consume a higher quantity of wood, probably due to various reasons:
  - they mainly collect the wood (17% of the rural households surveyed only collect wood, and 33% both collect and buy their wood), contrarily to the urban households who mainly buy their wood (for 53 % of them, and 33 % both collect and buy their wood).

- They mainly use only wood (82 % of rural households surveyed), whereas the majority of urban households mainly use a mix of charcoal and wood (for 67% of them)

- 81 % of surveyed households declared to find it difficult to purchase wood

	Unit	Rural zone	Urban zone
Households using only firewood	%	82	33
Households using firewood and charcoal		16	67
Daily wood consumption	kg/day/cap	2,3	1,2
Size of the households	pers.	8,07	7,43

The numbers of daily wood consumption presented in the table above are only based on the declarations of end-users, not on measurements, which will be held on during the Performance Field Tests.

Step 3: Kitchen Performance Field Test

Methodology

One KT per cluster has been conducted, through a process of paired sampling: in households that had been using the improved cook-stove for more than 3 months, traditional fuel consumption (baseline scenario) was compared to their new fuel consumption using the improved cook-stove (project scenario).

To estimate the size of the samples to be surveyed, the methodology described in Guidelines for Performance Tests of Energy Saving Devices and Kitchen Performance Tests (KPTs),4 was applied. COV was estimated with a large security margin from available literature and Baseline Survey data, and sample size was calculated in order to then verify the 90/30 rule.

[4] Dr Adam Harvey and Dr Amber Tomas, recommended by the Gold standard, to be found at http://www.climatecare.org/media/documents/pdf/ClimateCare_Guidelines_for_Performance_Tests_and_KPTsx.pdf

Zone	*Estimated COV*	*Minimum sample size*	*Initial sample size*	*Households effectively surveyed*
Urban	*1,2*	*38*	*53*	*35*
Rural	*1,1*	*45*	*52*	*46*

53 households in urban area and 52 in rural area were picked up in the customer database through simple random sampling. They constituted the "Initial sample" which breakdown is presented in the tables above (NB: "replaced" means that the household to survey was impossible to find [= "not found"], so another one from the same area was picked up in the customer database to replace it, and "added" means that an ICS not planned in the surveys was randomly found during field survey, and consequently included in the survey).

Zone	Planned sample	Real sample	Comments
Friguiagbe	11	14	9 were found, 2 were replaced and 3 were added
Foulaya	3	3	2 found, 1 replaced
Kinyaya	5	4	1 not found, 1 found and 3 replaced
Molota	1	1	1 replaced
Segueya	1	2	1 added
Condeya	5	4	1 not found
Kabelea	2	1	1 not found
Mambia	7	6	1 was not found
Madina-Oula	13	8	2 not found, and 3 users were travelling during the survey
Kolenten	1	1	Ok
Bokaria	2	2	
Komoya	2	0	It was not worth going to these remote areas to survey only three households
Samaya	1	0	
TOTAL	**54**	**46**	**The real sample size is 15% smaller than planned**

Table 1 – Rural kitchen test sample breakdown

Zone	Planned sample	Real sample	Comments
Abattoir	4	4	9 were found, 2 were replaced and 3 were added
Cacia	3	1	2 found, 1 replaced
Danbakanyah	2	1	1 not found, 1 found and 3 replaced
Ferefou	6	5	Replaced
Fissa	3	2	
Gangan	3	3	1 user of was added
Guarankelaya	0	2	1 not found
Sambaya	2	3	
Sarakolea	5	5	1 not found

Yeole	3	1	1 was not found
Tafory	3	1	2 not found, and 3 users were travelling during the survey
Bibane	1	1	It was not worth going to these remote areas to survey only three households
Dorneya	1	1	
Kenende	1	1	**The real sample size is 15% smaller than planned**
Koliadi	2	2	

Table 2 – Urban kitchen test sample breakdown

The survey was led between the 28th of November and the 4th of December, 2011 in urban areas; and then between the 16th and the 21st of January, 2012 in rural zones. The team was constituted of 8 APEK interviewers, who were provided with a specific survey manual and mechanical scales to weight the fuel stock.

A first phase was dedicated to making contact with the households surveyed. Questions included information on end-user follow-up, agreement to participate to the survey, best time to visit them, fuel wood weekly consumption and price, and size of the household.

Then, the performance field tests really started: the first 3 days the users were asked to cook without their improved cook-stoves (as they used to do before they bought their ICS), and the 3 next days they were asked to cook with their improved cook-stove. Families were strongly asked to cook as usual, so that the measurements can be assumed to be representative. They were visited each day at the same time, to measure the consumption of the last 24 hours (weighting the remaining wood stock).

It was decided to provide fuel wood to families as an incentive, otherwise it is likely that they would not have accepted not to use their improved ICSs during 3 days, as required by the survey.

Wood fuel remaining stock weighting during the Kitchen Performance Test

Statistical analysis and calculations

Both charcoal and firewood were weighted, but finally only wood figures were taken into account, which is conservative because real savings are made on both types of fuels.

- For urban cluster, 9 out of 39 households were using charcoal, for an average saving of 1,3 kg/hh/day, but the diversity of use schemes between baseline and project scenarios (2 baseline scenarios [charcoal only; charcoal + wood] and 2 project scenarios [wood only; charcoal + wood]) resulted in a high standard deviation (2,0 kg/hh/day). The 4 households using only charcoal in the baseline were excluded of the calculations.
- For rural cluster, no households were excluded of the analysis because all of them were using wood in the baseline scenario. 11 out of 45 households were using charcoal as a secondary fuel in the baseline, for an average saving of 1,0 kg/hh/day, but once more with a higher standard deviation (1,6 kg/hh/day).

The results are the following:

	Rural	Urban
Final sample size	44	35
Mean baseline consumption	9,76 kg/day/hh	8,11 kg/day/hh
Mean project consumption	4,98 kg/day/hh	3,78 kg/day/hh
Mean Savings	**4,78 kg/day/hh**	**4,32 kg/day/hh**
COV	0,66	0,42
Standard deviation	3,17	2,48
Lower Bound 90%	4,00 kg/day/hh	3,63 kg/day/hh
Higher bound 90 %	5,56 kg/day/hh	5,01 kg/day/hh

For both clusters, results show a mean value which satisfies the 90/30 (confidence/precision) rule required (i.e. the end-points of the 90% confidence interval lie within +/- 30% of the estimated mean) in case of paired sample. After excluding of outlier data, the mean daily saving of fuel wood were found to be respectively 4,78 and 4,32 kg per household. Since 90/30 precision was achieved, the mean values are used to calculate the mean annual wood saving, calculated as follows:

- 4,32 kg/day x 365 days= 1577 kg/year/household in urban zones
- 4,78 kg/day x 365 days= 1744 kg/year/household in rural zones

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered micro-scale project activity:

The project activity is located in Guinea, which is listed as a Least Developed Country (LDC).
According to the Gold Standard "Micro-scale Scheme Rules" in version 2.2 as of June 2012 (annex T), this argument is sufficient to prove additionnality.

Carbon revenue for the project was planned from the beginning, as a mean to ensure the activities stability and permanence on the long term. For the first years, proof of this consideration can be found in the projected budget of the pilot phase in Annex 4.

B.6 Emission reductions:

B.6.1. Explanation of methodological options or description of new proposed approach:

The project proponent should investigate the following potential sources of leakage.

According to the Gold Standard simplified methodology for efficient cookstoves written in February 2013, leakage related to non-renewable biomass saved by the project activity is not considered in micro-scales project activities.

B.6.2. Data and parameters that are available at validation:

Data / Parameter:	EF_{CO2}
Data unit:	$T_{CO_2}/T_{biomass}$
Description:	CO2 emission factor arising from use of wood-fuel
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2 and 1.4
Value applied:	1,747 (= 112.0 [T_{CO2}/TJ] * 0.0156 [TJ/ $T_{biomass}$])
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default IPCC values for wood / wood waste are applied
Any comment:	

Data / Parameter:	$EF_{non-CO2}$
Data unit:	$T_{CO_2e}/T_{biomass}$
Description:	Non-CO2 emission factor arising from use of wood-fuel
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 2.9 in Chapter 2: Energy and Table 1.2 in Chapter 1
Value applied:	0.4554 (= 21 [T_{CO2e}/ T_{CH4}] * 1.224 [T_{CH4} /TJ] * 0.0156 [TJ/ $T_{biomass}$] + 310 [T_{CO2e}/ T_{N2O}] * 0.01125 [T_{N2O} /TJ] * 0.0156 [TJ/ $T_{biomass}$])
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default IPCC values for CH4 and N20 emissions for wood / wood waste are applied The following GWP100 are applied: 21 for CH4, 310 for N20
Any comment:	Both defaults are within a range and the mean of the range is taken as the default. Technical references are from studies in developing country contexts and are more up-to-date than other default values.

Data / Parameter:	P_y
Data unit:	$T_{biomass}/year/unit$
Description:	Biomass savings generated by a project technology unit in year y
Source of data used:	Kitchen Performance Test
Value applied:	Urban Cluster: 1,58 Rural Cluster: 1,74
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	Ny
Data unit:	Number
Description:	Cumulative number of ICS in use included in the project database for project scenario p against baseline scenario b in year y
Source of data used:	2014 and estimated sales figures
Value applied:	Depends on the year
Justification of the choice of data or description of measurement methods and procedures actually applied:	Continuously updated
Any comment:	

B.6.3 Ex-ante calculation of emission reductions:

$$ER_y = ER_{y,rural} + ER_{y,urban} - LE_y$$

Where:

$ER_{y,rural}$: Emissions reduction in the rural cluster in year y [$T_{CO_2e}/year$]

$ER_{y,urban}$: Emissions reduction in the urban cluster in year y [$T_{CO_2e}/year$]

LE_y: Leakage in year y [$T_{CO_2e}/year$]

As biomass is the fuel used in baseline and project scenario and for both clusters,

$$ER_{y,rural} = N_{rural,y} * P_{rural,y} * U_y * (f_{NRB} * EF_{CO2} + EF_{non-CO2})$$
$$ER_{y,urban} = N_{urban,y} * P_{urban,y} * U_y * (f_{NRB} * EF_{CO2} + EF_{non-CO2})$$

Where:

N_y: Cumulative number of project technology included in the project database in year y *[units]*

P_y : Biomass savings generated by a project technology unit in year y, as derived from the statistical analysis of the data collected from the kitchen performance tests [$T_{biomass}/year/unit$]

U_y: Cumulative usage rate for technologies in project scenario p in year y, based on drop off rate revealed by usage surveys *[fraction]*

f_{NRB} : Fraction of biomass that can be established as non--renewable biomass *[fraction]*

EF_{CO_2} : CO_2 emission factor of woof fuel [$T_{CO_2}/T_{biomass}$]

EF_{non-CO_2} : CO_2 emission factor of woof fuel [$T_{CO_2e}/T_{biomass}$]

Replacing the variables in the formulas above by the values listed in section B.6.2., greenhouse gas emissions reductions for a single stove are estimated at:

For rural cluster:

$$ER_{y,unit,rural} = 1{,}74\ [T_{biomass}/year/unit] * (0{,}96 * 1{,}747\ [T_{CO_2}/T_{biomass}] + 0{,}455\ [T_{CO_2e}/T_{biomass}])$$

$$ER_{y,unit,rural} = 3{,}72\ T_{CO_2e}/year/unit$$

For urban cluster:

$$ER_{y,unit,urban} = 1{,}58\ [T_{biomass}/year/unit] * (0{,}96 * 1{,}747\ [T_{CO_2}/T_{biomass}] + 0{,}455\ [T_{CO_2e}/T_{biomass}])$$

$$ER_{y,unit,urban} = 3{,}36\ T_{CO_2e}/year/unit$$

Year	Annual sales projections	Sales projections per zone		Number of operational ICS		Estimated Emissions Reductions (TCO2e)		
		Rural	Urban	Rural	Urban	Rural	Urban	**Total**
2014	1400	280	1120	432	1520	1606	5116	**6722**
2015	1600	320	1280	555	2220	2062	7468	**9531**
2016	1230	246	984	629	2516	2337	8465	**10803**
2017	1300	260	1040	633	2530	2350	8513	**10863**
2018	1220	244	976	594	2376	2207	7995	**10202**
2019	1230	246	984	584	2334	2169	7855	**10023**
2020	1250	250	1000	583	2330	2165	7840	**10005**
2021	1300	260	1040	595	2380	2211	8007	**10218**
2022	1400	280	1120	625	2498	2321	8406	**10728**
2023	1250	250	1000	615	2460	2285	8277	**10563**
TOTAL	**13180**	**2636**	**10544**	**5843**	**23164**	**21714**	**77942**	**99656**

NB: 2014 sales figures are real, whereas from 2014 to 2023 sales figures are projected.

Finally, we get a total of 99656 VER over the 10 years.

B.6.4 Summary of the ex-ante estimation of emission reductions:

Year	Emissions (TCO2e/year)							
	Baseline		Project		Leakage	Reductions		
	Rural	Urban	Rural	Urban		Rural	Urban	Global
2014	3282	9592	1676	4476	0	1606	5116	6722
2015	4215	14003	2153	6534	0	2062	7468	9531
2016	4777	15872	2440	7407	0	2337	8465	10803
2017	4804	15961	2454	7448	0	2350	8513	10863
2018	4512	14989	2304	6995	0	2207	7995	10202
2019	4433	14727	2264	6872	0	2169	7855	10023
2020	4424	14699	2260	6859	0	2165	7840	10005
2021	4519	15012	2308	7005	0	2211	8007	10218
2022	4744	15762	2423	7355	0	2321	8406	10728
2023	4671	15519	2386	7242	0	2285	8277	10563
TOTAL	**44381**	**146136**	**22667**	**68194**	**0**	**21714**	**77942**	**99656**

B.7 Application of a monitoring methodology and description of the monitoring plan as per the existing or new methodology applied to the micro-scale project activity:

B.7.1 Data and parameters monitored:

Data/Parameter	Up,y
Data Unit	Percentage
Description	Usage rate in project scenario p during year y
Source of data	Annual usage survey/Monitoring survey
Monitoring frequency	Annual
QA/QC procedures	Transparent data analysis and reporting
Any comment	A usage parameter is derived for each age group of project cookstove being credited

Data/Parameter	Np,y
Data Unit	Number of project cookstove credited (units)
Description	Cookstove in the project database for project scenario p through year y
Source of data	Total sale records
Monitoring frequency	Continuous
QA/QC procedures	Transparent data analysis and reporting
Any comment	The total sales record is divided based on project scenario to create the project database

Data/Parameter	DFn
Data Unit	Fraction
Description	Discount factor to account for efficiency loss of project cookstoves
Source of data	Default value : 0,99 i.e., 1% efficiency loss per year
Monitoring frequency	Annual
QA/QC procedures	Transparent data analysis and reporting
Any comment	This default values can be 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 the case of progressive installations ,stoves of age-group 0-1 shall also be physically verified each year through a random sampling approach. Please follow the survey format B (Annex A) to capture the required information. Minimum number of sample size shall be selected following the guidelines provided in section 4.2, option (b). 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 Annex B to carry out field studies

Data/Parameter	DFP,stove,y
Data Unit	Fraction
Description	Discount factor to account for the baseline stove use in project scenario p during the year y
Source of data	Monitoring surveys
Monitoring frequency	Annual
QA/QC procedures	Transparent data analysis and reporting
Any comment	The discount factor for baseline-stove use may be determined based on 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 each age-group of the project stove. The minimum number of sample sizes shall be selected following the guidelines provided in section 4.2, option (b). Please refer to the survey format B (Annex A) for sample questions to capture this information. The impact of seasonal variation on use of baseline stove should be considered as part of the monitoring survey.

B.7.2 Description of the monitoring plan:

The monitoring plan follows the process required by "The Gold Standard Simplified Methodology for Efficient Cookstoves".
It is implemented by the local project manager, while the reporting will be done under the supervision of BISS.
All data will be kept electronically for a period of 2 years after the end of the crediting period.

The monitoring plan includes:

1. The total sales record

This excel file is maintained continuously and contains the following data:

- Date of sale and of installation
- Geographic area of sale
- Model/type of project cookstoves sold
- Name, address and (if possible) telephone number of the end-user

Sales databases are cross checked with production records and other data to ensure consistency and accuracy. This data is collected when the ICS is sold through a sale form (filled in by the retailer), and are transmitted regularly to the project manager. All the sales cards are archived as a backup.

2. The project database

The project database is derived from the total sales record, but it is divided in two parts:
-rural users
-urban users

Also, ICS aged beyond their useful lifetime, as established in the usage survey, are removed from the project database.

3. Ongoing monitoring studies

3.1. Monitoring and usage survey

Monitoring shall consist of checking of a representative sample, once every year (annually) to ensure that project cookstoves are still operating by carrying out the usage survey as per the guidelines below. A usage survey must be conducted to estimate the drop off rates as project cookstove may not be adopted or may be disposed of and potentially replaced again by a baseline stove. Prior to the verification, a usage survey for each cookstove age-group is required.
Where replacements are made, monitoring shall also ensure that the efficiency of the new cookstove is similar to the appliances being replaced.
The project must also monitor the use of baseline stoves in the project activity.
The project must also monitor the physical conditions of the cookstoves.
Survey format B in Annex A of “The Gold Standard Simplified Methodology for Efficient Cookstoves” will be used for carrying out monitoring surveys.

The project survey should be carried out using representative and random sampling using the minimum sample size of 100 households among the targeted population (Kindia and Télimélé Prefectures). The project survey will be led by a team of 4 APEK interviewers, who will be overseen by 2 supervisors (the APEK area facilitator and BISS carbon volunteer) in May 2015. They will spend 5 days in each prefecture to visit households randomly chosen. As required by the methodology, the data collected will be the following ones:

- End-user profile: name, gender, contact details, etc.
- End user’s fuel consumption pattern post project implementation: cooking device, place for cooking, type of fuel used, etc.

3.2. Leakage assessment

Leakage related to non-renewable biomass saved by the project activity is not considered for micro-scale project activities.

3.3. Non-renewable biomass assessment update

The project activity may choose to update the fraction of non-renewable biomass during the crediting period.

4. Sustainability monitoring plan

To monitor the impacts of the project, various parameters (detailed in the Section F of the Sustainable Development Validation Appraisal Report) will be measured every year.

The main indicators are the following ones:
1 – Quality of employment
2 – Livelihood of the poor
3 – Access to affordable and clean energy services
4 – Human and institutional capacity
5 – Quantitative employment and income generation
6 – Technology transfer and technological self-reliance

B.8 Date of completion of the application of the existing or new baseline and monitoring methodology and name of the responsible person(s)/entity(ies)

Date of completion of the final draft of this baseline section: March 2015 **(**March 2012 for the version 1)

Name of person/entity determining the baseline: Jeanne Metayer, BISS

SECTION C. Duration of the project activity / crediting period

C.1 Duration of the project activity:

C.1.1. Starting date of the project activity:

1/10/2013 (first stoves sales)

C.1.2. Expected operational lifetime of the project activity:

10 years

C.2 Choice of the crediting period and related information:

C.2.1. Renewable crediting period

C.2.1.1. Starting date of the first crediting period:

C.2.1.2. Length of the first crediting period:

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

Date of registration (first quarter of 2015)

C.2.2.2. Length:

10 years

SECTION D. Stakeholders' comments

See Local Stakeholders Consultation Report for details.

D.1. Brief description how comments by local stakeholders have been invited and compiled:

As required by the Gold Standard process, an initial Local Stakeholder Consultation took place on the 10th May 2010 in Kindia, Guinea. 97 persons participated to this event.
During this meeting, a presentation of the association and of the project was done. The stakeholders were asked to participate to a blind sustainable development exercise and make all their comments.
After this meeting, a report was redacted, as required by the Gold Standard requirements, in which the comments are compiled.
Overall, 2 regional forum per year are organized. The last regional forum gathering project proponents, national and local authorities (national department of renewable energy, national department of Water and Forests), production and sales stakeholders (women ambassadors, craftsmen of the SMEs, ICS owners...) took place in Kindia in January 2015. The grievance mechanism had been discussed and approved by all the participants during this event.
Moreover, a framework agreement with Télimélé municipality has been launched about the professional craft training center in order to provide toolboxes to the apprentices.

Last but not least, local authorities in Kindia and Télimélé (Prefecture officers, mayors) had been informed of the project development and Gold Standard procedure during interviews in March 2015.

D.2. Summary of the comments received:

The Local Stakeholder Consultation met a very approval by all participants, especially women. It seems that everybody wants to go ahead as soon as possible with the project.
All the participants of each category have strongly encouraged the progress of the project.
Most of the participants' concerns dealt with the project length and the ICS price: many of them expressed their fear that the project might end before they get equipped with a "kolpot fotonkante", and that its price would be too high.
The initiators of the project will not provide the new ICS for free and will reduce the price as far as it possible to make it accessible to everyone depending on carbon credit funding.
More generally, presentation and relevant clarifications given by the project team lead to global satisfaction of participants.
Some of the project promotional materials will be translated into Susu for less literate populations in order to facilitate their access to information. Nevertheless, effort will be emphasized on the implementation of visual understandable materials accessible of everybody and especially for women.

Stakeholder comment	Comment taken into account?	Explanation (Why? How?)
Numerous concerns about the program stability	Y	We understand this concern, (as a lot of NGOs projects do not last) and reassured them about the long-term planning of the project
Various concerns about the price of the efficient ICS (will it be affordable for local population?)	Y	We are fully conscious of the importance of this point; ensuring at all times an affordable price is already a priority of the project
Necessity to carry comparative studies and to lead demonstration exercises	Y	Demonstration exercise already makes part of the introduction phase ("atelier cuisson"), and comparative studies (additional to those previously lead) already are planned within the GS process
General appreciation of the participative aspect within the project	Y	This positive comments reinforce our will to keep on this way of functioning
Suggestion to extend the project farther away from Kindia Prefecture as there is a strong demand for this kind of ICSs in Conakry for example	N	For the first phase of the project, we prefer to implement the program within a limited geographical area, mainly to be able to ensure a continued monitoring of the ICSs use
Suggestion to enable the sale of more than 1 ICS per household as they usually count more than 1 housewife	Y	From now on, we will authorize the sale of 2 ICS per household

D.3. Report on how due account was taken of any comments received and on measures taken to address concerns raised:

The main alteration of the project design resulting from the stakeholder comments consisted in authorizing the sale of 2 ICS per household instead of 1, as there is generally more than 1 housewife per household (Guinea is a country where polygamy is common). This demand is also due to the fact that women usually cook two meals at the same time: the rice and the sauce (typical dish eaten in every meal).

D.4. Report on the Continuous input / grievance mechanism:

Discuss the Continuous input / grievance mechanism expression method and details, as discussed with local stakeholders.

The grievance mechanism had been discussed and chosen by local stakeholders during the regional forum held in Kindia from 27th to 29th January 2015. Almost 60 participants (project proponents, national and local authorities, production and sales stakeholders) attended this conference.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	3 books are available for local stakeholders : > first book is located in CAG44 office, Quartier Féréfou, Kindia (contact : +224 631 44 44 50) > second book is located in APEK-Agriculture office, Kindia (contact : +224 655 31 67 11) > third book is located in the Ministry of Energy and Hydraulic, Renewable energy Department, Conakry (Alpha Ibrahima Diallo : + 224 622 91 24 87 ; Mamadou Samba Camara : +224 622 10 66 08)	These books are kept by 2 of the project participants in Kindia, where the project initially started in 2010. These 2 places are well known by local stakeholders. Besides, the Ministry of Energy and Hydraulic is located in Conakry (the capital city of Guinea) where all administrative institutions are present.
Telephone access	Telephone numbers of APEK staff have been communicated to all local	Telephone access is the most relevant mean of communication in

	stakeholders in Lower Guinea : *Faustin Guilavogui (project manager) : +224 622 62 91 61* *Ibrahima Sory Camara (Boké/Boffa area) : + 224 657 91 31 47* *Nancira Camara (Coyah/Forécariah area) : + 224 669 31 48 66* *Aminata Mamadou Diallo (Kindia/Télimélé area) : + 224 620 84 58 42* *Maférin Camara (Dubreka/Fria area) : + 224 622 53 13 88* *Gassimou Keita (Conakry area) : + 224 622 12 67 68*	Guinea since everybody owns a mobile phone. APEK facilitators work almost all the time on the field and have been taught to deal with this procedure.
Internet/email access	2 contacts in CA Guinée 44 staff have been communicated : Kollet KEITA, project manager, CA Guinée 44 : Kollet.keita@cooperation-atlantique.org Selly KEITA, executive manager, CA Guinée 44 : Selly.keita@cooperation-atlantique.org	Internet access is not easy and common in Guinea. Nevertheless, these contacts allow stakeholders to address modifications or suggest improvements to the main project participant.
Nominated Independent Mediator (optional)	Not used	

All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place that should be added to the monitoring plan.

D.5. Report on stakeholder consultation feedback round:

During the Stakeholder Feedback Round, the LSC report, draft PDD and draft Passport will be published on the BISS and CAG44 websites as well as on the Gold Standard registry. Additionally, the

reports will be available as printed version at the offices of all the project partners: BISS, CAG44, and APEK.

All stakeholders, invited to the consultation meetings, including those who were unable to attend the physical meeting (and especially the supporters NGOs), will be invited to take part in the feedback round. They will be informed by email, phone, letters and verbal description about the Feedback Round. They will be encouraged to give comments and suggestions on the Local Stakeholder Consultation report.

In rural areas, facilitators will encourage stakeholders to comment on the project during their presence in villages (users' follow-up and public demonstrations).

The feedback round will last for 2 months as soon as the project achieves 'listing' status in the Gold Standard Registry.

These documents will be shared prior to validation and any comments will be incorporated in the final PDD and final Passport based on this feedback round.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Bolivia Inti Sud Soleil (BISS)
Street/P.O.Box:	8 rue Saint Domingue
Building:	Le Solilab
City:	Nantes
State/Region:	
Postfix/ZIP:	44200
Country:	France
Telephone:	+33 (0)2 51 86 04 04
FAX:	
E-Mail:	soleil@boliviainti.org
URL:	www.boliviainti-sudsoleil.org
Represented by:	
Title:	Manager
Salutation:	Mr
Last Name:	Dulong
First Name:	Vincent
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	Vincent.dulong@sud-soleil.org

Organization:	Coopération Atlantique-Guinée 44
Street/P.O.Box:	8 rue Saint Domingue
Building:	Le Solilab
City:	Nantes
State/Region:	
Postfix/ZIP:	44200
Country:	France
Telephone:	+33 (0)2 40 35 59 80
FAX:	
E-Mail:	elsa.cardinal@cooperation-atlantique.org
URL:	www.cooperation-atlantique.org
Represented by:	
Title:	Manager
Salutation:	Mrs
Last Name:	Cardinal
Middle Name:	
First Name:	Elsa
Department:	
Mobile:	+33 (0)6 30 88 30 30
Direct FAX:	
Direct tel:	
Personal E-Mail:	elsa.cardinal@cooperation-atlantique.org

Organization:	APEK-Agriculture (Association pour la promotion économique de Kindia)
Street/P.O.Box:	
Building:	
City:	Kindia
State/Region:	
Postfix/ZIP:	BP71
Country:	Guinea
Telephone:	
FAX:	
E-Mail:	apek@apek-agriculture-kindia.org
URL:	www.apek-agriculture-kindia.org
Represented by:	
Title:	Manager
Salutation:	Mr
Last Name:	Barry
Middle Name:	Rouma
First Name:	Amadou
Department:	
Mobile:	
Direct FAX:	
Direct tel:	+224 655 31 67 11
Personal E-Mail:	roumabarry@yahoo.fr

Annex 2 - **Information regarding Public Funding**

Bolivia Inti Sud Soleil

18 Rue Gaëtan Rondeau,

44200 Nantes - FRANCE

Date: 07/09/2011

Project reference: GS880

To: Gold Standard Foundation

Declaration of Non-Use of Official Development Assistance by Project Owner

[*Project Owner:* ***Bolivia Inti Sud Soleil***]

As Project Owner of the above-referenced project, acting on behalf of all project participants, I now make the following representations:

[*Authorised Representative*: ***Patrick Fourrier***]

I hereby declare that I am duly and fully authorized by the project owner of the above-referenced project, acting on behalf of all project participants, to make the following representations on Project Proponent's behalf:

I. Gold Standard Documentation

I am familiar with the provisions of Gold Standard Documentation relevant to Official Development Assistance (ODA). I understand that the above-referenced project is not eligible for Gold Standard registration if the project receives or benefits from Official Development Assistance under the condition that some or all credits coming out of the project are transferred to the ODA donor country. I now expressly declare that no financing provided in connection with the above-referenced project has come from or will come from ODA that has been or will be provided under the condition, whether express or implied, that any or all of the credits [CERs, ERUs or VERs] issued as a result of the project's operation will be transferred directly or indirectly to the country of origin of the ODA.

II. Duty to Notify Upon Discovery

If I learn or if I am given any reason to believe at any stage of project design or implementation that ODA has been used to support the development or implementation of the project, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the credits generated from the project as a condition of investment, I will make this known to the Gold Standard immediately.

III. Sanctions

I am fully aware that under Section 10 of the Gold Standard Terms and Conditions sanctions and damages may be incurred for the provision of false information related to Projects and/or Gold Standard credits.

Signed: 

Name: Patrick Fourrier

Title: Head of African Projects Office

On behalf of: Bolivia Inti Sud Soleil

Annex 3: baseline survey and kitchen performance test questionnaires

QUESTIONNAIRE D'ENQUETE RELATIF A LA DEMANDE, L'OFFRE ET L'APPROVISIONNEMENT EN COMBUSTIBLES DES MENAGES

I) DONNEES D'ORDRE GENERAL

Questionnaire n°		**Date**		**Enquêteur**		**superviseur**	

NOM, Prénom de personne interrogée		**NOM, Prénom du chef du ménage**	
Contact et adresse postale			
Collectivité locale		**Quartier**	
Profession/ activité			
age		**Niveau d'instruction**	

Ménage N°		**Zone rurale**		**Zone urbaine**	

II) IDENTIFICATION DES HABITUDES DE CUISSON EN MILIEU DOMESTIQUE

2.1 Pour quelles tâches employez-vous le bois ou le charbon que vous utilisez ?

Préparer des aliments	**Stérilisation de l'eau de table**	**Se chauffer**	**Chauffer de l'eau pour la laver le linge**	**Préparer le fourrage du bétail**	**Séchage pour la conservation des graines**

2.2 Pour combien de personne cuisinez-vous ?

	Usage		Tranche d'âge			
	Commercial	**Familial**	**1 – 18**	**18 – 35**	**35 – 60**	**60 et +**
Femmes						
Hommes						
Totaux						

2.3 Quel combustible employez-vous pour cuisiner ?

Bois de chauffe	
Charbon de bois	
Gaz	
Electricité	
Pétrole	
Autre	

2.5 Si vous utilisez du bois ou du charbon, qu'est-ce qui motive leur utilisation ?

Prix abordable	
Facilité d'approvisionnement	
Fumée contre certains parasites	
Autres :	

2.4 Avec quoi cuisiniez-vous il y a 5 ans ?

Bois de chauffe	
Charbon de bois	
Gaz	
Electricité	
Pétrole	
Autre	

2.6 Si vous utilisez un autre combustible qu'il y a 5 ans, qu'est ce qui explique le passage d'un combustible ?

confort	
statut social	
sécurité	
santé	
Autre :	

2.5

2.6 Consommation journalière de combustibles utilisés pour la cuisine et le chauffage

Quels types de repas cuisiné le + couramment ?	Taille de la marmite (Kg)	Durée cuisson	Fréquence			Type et nombre de foyers utilisés						Quantité de combustible utilisé				
			M	J	N	3P	FA	CP	RG	RE	RP	BC	CB	G	E	P
Riz																
Fonio																
Ragoût																
Sauces																
Eau chaude																
Riz endormi																
Bouillie																
Lafidi																
Riz gras																
Grillades																
Tot																
Tubercules cuits																
Autres																
NB 3P = 3 pierres ; FA = Foyer amélioré ; CP = Coolpot ; RG = Réchaud gaz ; RE = Réchaud électrique ; RP = Réchaud pétrole (voir typologie des foyers en annexe) BC = Bois de chauffe ; CB = Charbon de bois ; G = Gaz ; E = Electricité ; P = Pétrole												TOTAL				

III - APPROVISIONNEMENT DU MENAGE EN BOIS DE CHAUFFE

Types de bois énergie	Mode d'accès		Lieux d'appro.	Distance avec l'habitat	Fréquence	Quantité	Temps de stockage	Essences forestières couramment utilisées
	Ramassé	Acheté						
Bois de chauffe								
Charbon de bois								

3.1 A qui/où achetez-vous votre bois de chauffe ?

Commerce	
Particuliers	
Commerces et particuliers	
Autre :	

3.2 Combien payez-vous votre bois ?

3.3 Qui va chercher du bois le plus souvent ?

Homme	
Femme	
Enfants	

3.4 A qui appartiennent les terrains d'où vous rapportez votre bois, ou quel est leur régime de propriété ?

Particuliers	
Coopérative	
Usufruit	
Terrains domaniaux	
Autre :	

3.5 Sur quel type de terrain allez-vous chercher votre bois ?

Terrain boisé	
Terrain de végétation dense	
Haies	
Pâturages	
Autre :	

3.6 Par quel moyen transportez-vous le bois ?

Voiture	
Cheval	
Charrette	

A la main	
Bicyclette	
Autre :	

3.7 Avez-vous des difficultés à obtenir du bois ? Si oui, de quel ordre ?

Solutions envisagées :

QUESTIONNAIRE D'ENQUETE TERRAIN
« KITCHEN PERFORMANCE TEST »

RENSEIGNEMENTS GENERAUX			
N° Questionnaire	**N° CBE**	**Date d'achat CBE**	**Zone**
			□ Rurale □ Urbaine
Date enquête	**Enquêteur**		**Superviseur**
Nom utilisatrice		**Nom chef de ménage**	
Contact	**Activité utilisatrice**		
Collectivité	**Quartier**	**Adresse**	

QUESTIONS A POSER A L'UTILISATRICE	
Utilisez-vous votre CBE ?	□ Oui □ Non
Acceptez-vous de participer à l'enquête ?	□ Oui □ Non
A quelle heure peut-on vous visiter ?	
Quel combustible consommez-vous ?	□ Bois □ Charbon
Combien de personnes comptent votre foyer ?	
Quelle quantité de bois consommez-vous en 7 jours ?	kg/semaine
Combien coûte cette quantité de bois ?	FG

		CONSOMMATION DE COMBUSTIBLE			
		BOIS		CHARBON	
Jour	Date	Poids du stock (kg)	Poids ajouté (kg)	Poids du stock (kg)	Poids ajouté (kg)
1					
2					
3					
4					
5					
6					
7					

SANS CBE

AVEC CBE

NOMBRE DE PERSONNES AYANT MANGE CHAQUE JOUR							
Jour	**J1**	**J2**	**J3**	**J4**	**J5**	**J6**	**J7**
Enfants - 14 ans							
Femmes + 15 ans							
Hommes 15-59 ans							
Hommes + 60 ans							

	PLATS PREPARES		
Jour	Matin	Midi	Soir
1			
2			
3			
4			
5			
6			
7			

1. Depuis combien de mois utilisez-vous votre CBE ?	mois

2. Utilisez-vous votre CBE pour préparer des produits que vous vendez ? □ Oui □ Non	Si oui, lesquels ?

3. Etes-vous satisfaite de votre CBE ? □ Oui □ Non	Si non, pourquoi ?

4. Est-ce que le CBE vous fait gagner du temps ? □ Oui □ Non	Si oui, combien de temps ? A quoi consacrez-vous ce temps ?

5. Est-ce que le CBE vous fait économiser de l'argent ? □ Oui □ Non	Si oui, combien ? A quoi consacrez-vous cet argent ?

6. Est-ce que vous vous trouvez en meilleure santé depuis que vous utilisez le CBE ?	□ Oui □ Non

7. Qu'est-ce vous préférez dans l'utilisation du CBE ? (classer de 1 à 5 ou 6 par ordre de préférence)	□ Moins de temps passé à ramasser le bois □ Discrétion □ Budget réduit pour le bois □ Moins de fumées □ Plus d'hygiène □ Autre :

8. Quelles améliorations sur le CBE souhaiteriez-vous?	

9. Rencontrez-vous ces problèmes avec le CBE ?	Oui	Non	Remarques/précisions
Grille gâtée			
Plots enfoncés ou mal espacés			
Problèmes avec le tuyau coudé			
Autre : préciser			

10. Problèmes généraux liés à l'utilisation d'un foyer : cocher oui ou non suivant l'existence ou non du problème avec l'utilisation du CBE, et préciser si le CBE a rendu la situation meilleure (+), pire (-) ou pareille qu'avant (=).

Type de problèmes	Oui	Non	+	=	-	Remarques/précisions
Instabilité des marmites						
Brûlures						
Le feu noircit les marmites						
Beaucoup de fumées						
Le foyer met longtemps à chauffer						
Difficultés à allumer le feu						
Le feu s'éteint facilement						
Difficultés à contrôler la température						
Difficultés à cuisiner certains plats (les lister)						
Le bois habituellement utilisé ne rentre pas						

11. Avez-vous des difficultés à obtenir le bois ? □ Oui □ Non	Si oui, lesquelles ?
12. La consommation de combustible varie-t-elle suivant les périodes de l'année ? □ Oui □ Non	Si oui, quelle est la période où la consommation est la plus forte ? Période où la consommation est la plus faible : Différence entre les deux :

13. Comment vous approvisionnez-vous en combustible ? Remplir le tableau suivant :

	Distance au lieu d'approvisionnement (m)	Période entre 2 approvisionnements (jrs)	Prix (FG)	Quantité (kg)
Bois acheté				
Bois ramassé				
Charbon				

14. A quelle fréquence utilisez-vous chaque foyer ? (cocher une seule case)					15. Quelles tâches effectuez-vous habituellement avec chaque foyer ? (cocher)										
Type de foyer	≥ 1 fois /jr	≥ 1 fois /sem	≥ 1 fois /mois	≤ 1 fois /mois	Pour le ménage			Chauffage de l'eau	Pour vendre		Etuvage du riz	Repas de cérémonie	Séchage des graines	Médicaments	Grillage d'arachide
					Riz	Sauce	Boissons		Boissons	Aliments					
CBE															
3 pierres															
A Charbon															
A copeaux															
Autre :															