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

CONTENTS

Annexes

SECTION A. General description of micro-scale project activity

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

>> WWF Meigu Panda Habitat Conservation Clean Cookstove Project

>> 12/06/2017, version01

A.2. Project participants:

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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)
Switzerland	WWF Switzerland	No
China(Host)	South Pole Carbon Asset Management Consulting (Beijing) Ltd. (Private entity)	No

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

The project activity is planned to construct 500 high efficient cook stoves for the households living in the Longwo Town and Shuwo Town of Meigu County (near to Dafengding Nature Reserve), Liangshan Yi Autonomous Prefecture, Sichuan Province, P.R. China.

The purpose of the project activity is to facilitate clean cooking practices and reduce health risk due to indoor air pollution along with household drudgery amongst the tribal household and families living in villages of Meigu County Dafengding Nature Reserve through dissemination of high efficient cook stoves. The high efficient cook stoves through replacement of inefficient traditional cook stove will contribute towards reduction of Green House Gases emission and by-products of incomplete combustion like black carbon, conservation of fuel wood and prevent forest degradation. Successful operation of the project activity will encourage rural residents to shift from traditional cook stoves usage to the project high efficient and modern cook stove.

In addition, the project activity profoundly contributes towards sustainable development of the region in terms of the following aspects:

Social benefits:

- Reduces drudgery of women and children of rural areas (due to reduced fuel wood use) by reducing time spent and distance travelled for fuel wood collection. Reduction in firewood requirement would help in spending more time in productive activities such as education, employment etc.
- Improves overall health (particularly diseases related to respiratory system) of women and children by reducing smoke in the kitchen.

Environmental benefits:

- Improves the local environment by reducing rate of forest degradation /deforestation in the project area. Conservation of forest will not only reduce non-renewable biomass demand and also reduce soil erosion and loss of biodiversity as a consequence of deforestation.
- Reduces emission of black carbon to the atmosphere.
- Reduces Greenhouse gas emissions.

Economic benefits:

- Employment opportunities for local communities involved in monitoring, training of users, undertaking periodic maintenance and post life time replacement.
- Reduces the expenditure involved in the pre project scenario for purchase of fuel wood.

Technological benefits:

- Introduction of new technology to the rural communities.

Knowledge transfer to trainers including technicians for pertaining training to users, maintenance of system.

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

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A.3.1.1. Host Country:

>> P.R.China

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

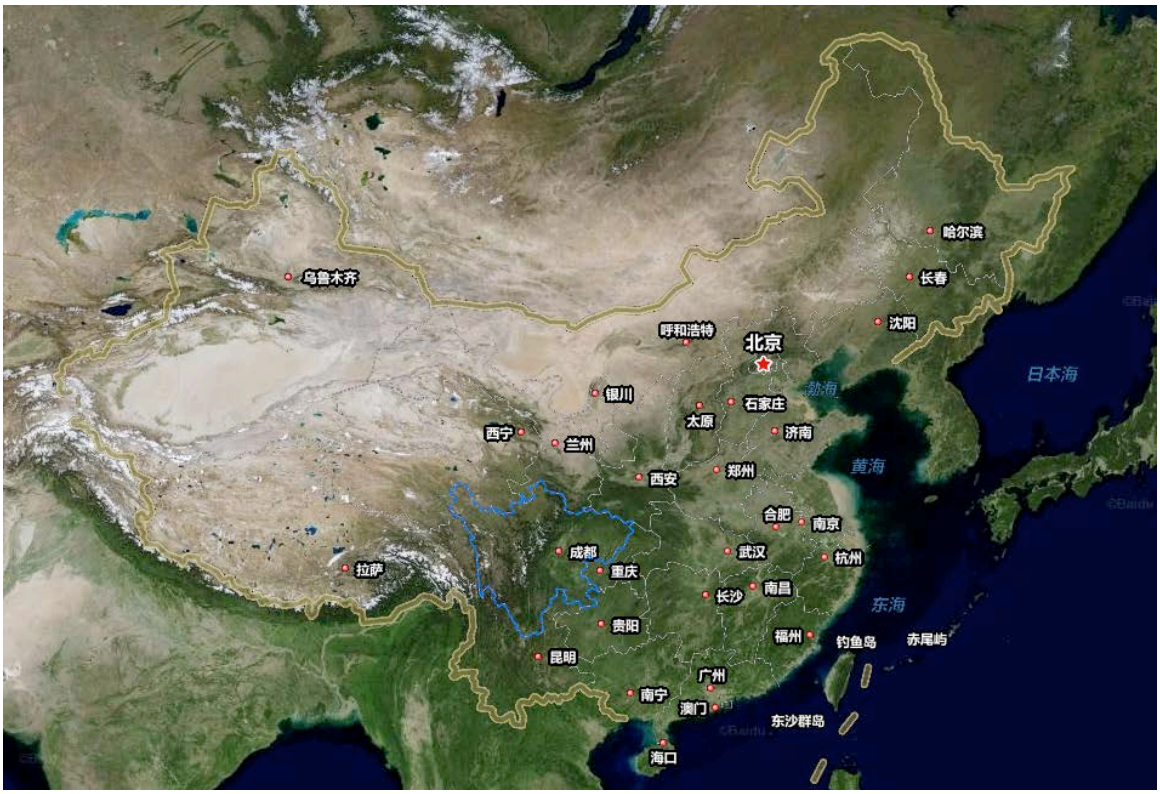
>> Sichuan Province

A.3.1.3. City/Town/Community etc:

>> Shuwo Town and Longwo Town, Meigu County, Liangshan Yi Autonomous Prefecture

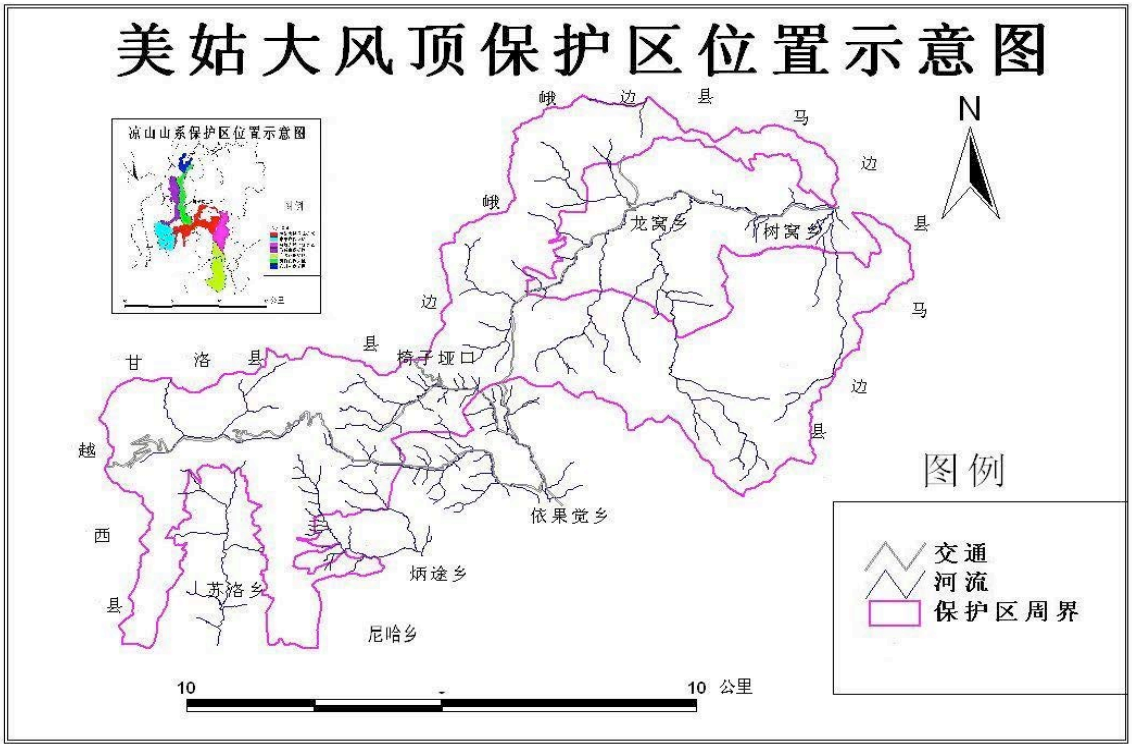
A.3.1.4. Details of physical location, including information allowing the unique identification of this micro-scale project activity:

>> The proposed project is planned to install 500 high efficient cook stoves in the Shuwo Town and Longwo Town of Meigu County around the Dafengding Nature Reserve in Liangshan Yi Autonomous Prefecture. The geographical coordinates of Dafengding Nature Reserve are 102° 52′ E - 103° 20′ E, 28° 30′ - 28° 50′ N. The following maps point out the location of the project.



Picture 1: Location of Sichuan Province

Picture 2: Location of Meigu County



Picture 3: Location of Longwo Township and Shuwo Township in Dafengding Nature Reserve

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

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The project activity is planned to construct 500 high efficient cook stoves for the households living in the Shuwo Town and Longwo Town of Meigu County (near to Dafengding Nature Reserve), Liangshan Yi Autonomous Prefecture, Sichuan Province, P. R. China during 2016 to 2018.

Baseline scenario:

The baseline scenario is the consumption of non-renewable firewood to meet thermal energy requirements for household cooking. The conventional cook stoves are used by households living in the Dafengding Nature Reserve in Sichuan province, P. R. China—with firewood-saving cook stoves. The Dafengding Nature Reserve is one of the important giant panda living area as well as many other wild animals and plants.

Picture 4: Conventional cook stove

Nowadays, firewood is still the primary fuel source for cooking and heating in the local communities within the deep mountains in Meigu County. Every year each household needs to collect a huge amount of wood from their forest area and store in their house. As a result, the forest has been degraded over years.

Project scenario:

Because Meigu County is a mountain and poor region with poor infrastructure and high electricity prices, there is no affordable alternative to replace wood as a source of heat and power. Without external financial support, such as a carbon subsidy or third party donation, the local people will not be able to afford to upgrade their stoves. To solve this challenge, WWF Switzerland acting as the Project Owner, invests all of high efficient cook stoves for the project activity in return for future GS VERs derived from the project. The project will construct 500 high efficient cook stove for local families for free within the span of one year. The project is expected to reduce GHG emissions by 8,728 tCO2e annually on average.

Technology description

High efficient cook stove (See picture 5 below) has been used for several decades in China. The technology is "mature." Compared with traditional cook stoves, high efficient cook stove has an additional air flowing system, which includes a chimney (See Picture 6). The chimney and grate allow the firewood to be combusted completely (typically in the kitchen area) and the smoke to escape the room. A fire-block-circle (See Picture 7) reduces the amount of thermal energy loss by keeping the hot smoke for a longer period of time under pots that run directly into the chimney. This allows the pots to absorb the thermal energy carried by the smoke. Experience shows that high efficient cook stove saves on wood consumption (thus less deforestation) and reduces cooking time. Typically, high efficient cook stove contains two pots with the diameter of 60cm and 90cm.

Picture 5: High Efficient Stove

Picture 6: Chimney

Picture 7: Detail of Fire-Block-Circle

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

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A crediting period of fixed 10 (ten) years is selected for the project activity and the designed lifetime of high efficient cook stove is 10-15 years. An estimation of emissions reductions expected over the crediting period is provided in the table below.

Year	Estimation of annual emission reductions in tonnes of CO2e
Year 1	9,041
Year 2	8,973

Year 3	8,905
Year 4	8,836
Year 5	8,766
Year 6	8,696
Year 7	8,625
Year 8	8,553
Year 9	8,480
Year 10	8,407
Total estimated reductions	87,282
Total number of crediting years	10
Annual average over the crediting period of estimated reductions	8,728

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

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No ODA support is involved in the project.

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:

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The project activity applies the GS Simplified Methodology for Efficient Cookstoves, issued in February 2013.

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

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The GS Simplified Methodology for Efficient Cookstoves comprises appliances involving the efficiency improvements in the thermal applications of non-renewable biomass. Examples of these technologies

and measures include the introduction of **high efficiency**[1] **biomass fired cook stoves**[2] or ovens or dryers and/or improvement of energy efficiency of existing biomass fired cook stoves or ovens or dryers.

The proposed project is a high efficiency biomass fired cook stove project with the specified efficiency around 25%. The new stoves will reduce the GHG emission by reducing the consumption of non-renewable biomass applied to national standard. The project also meets the requirement as dedicated in the methodology that non-renewable biomass has been used for a long time because the local people have been using the wood biomass as fuel. Since then, the forest has retreated gradually as the rise of the population.

The project involves the transfer of 500 high efficient cook stoves to local households. The project will reduce GHG emissions by 8,728 tCO2e annually, which meets the application of the scope of Gold Standard micro scale project.

B.3. Description of the project boundary:

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The boundary comprises a) the 500 households located in the Meigu County; b) and the firewood collection forest area.

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

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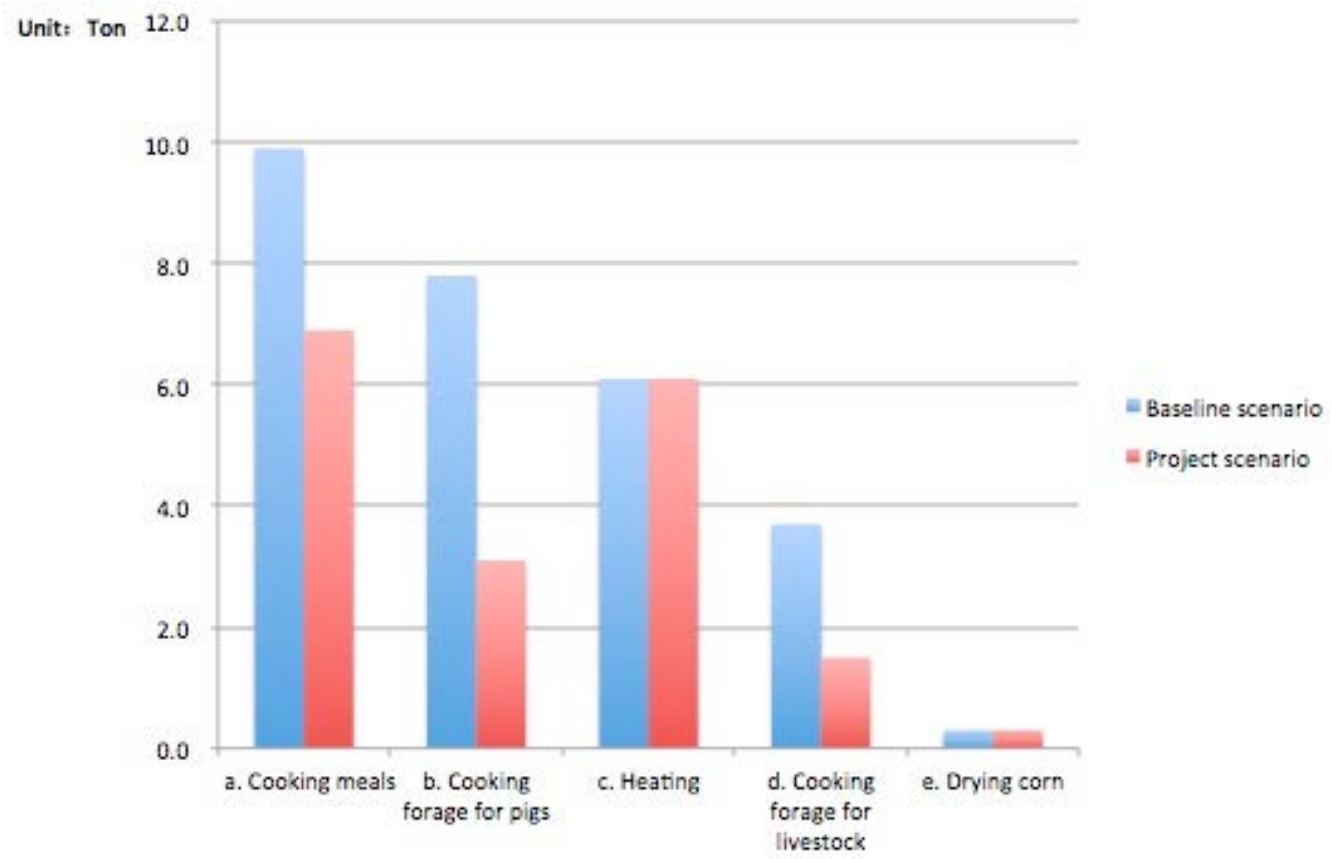
In order to give a clear and accurate description of the wood consumption in the baseline, wood consumption is divided into six categories (see below).

According to baseline survey, the wood consumption of the local communities mainly consists of five portions in the project area (Graph 1): a) cooking meals; b) cooking forage for pigs; c) heating; d) cooking forage for livestock; e) drying corn.

[1] The efficiency of the project systems as certified by a national standards body or an appropriate certifying agent recognized by it. Alternatively manufacturers' specifications may be used.

[2] Single-pot or multi-pot, portable or in-situ cook stoves with specified efficiency of at least 20%



Graph 1: Annual consumption of firewood per household in the baseline and project scenario

a) Cooking meals

The annual firewood consumption on meal cooking is 9,919.5 kg in average. The maximum consumption is 27,010 kg and the minimum is 3,690 kg. The family number is the main reason that affects the firewood consumption.

b) Cooking forage for pigs

Almost every local family raises pigs, but without using fodder to feed pigs, the forage such as potato, corn and grass is being cooked for feeding pigs annually. According to the statistics, the firewood consumption on cooking forage per household is 7,653 kg annually in average. Among them, the maximum annual consumption is 32,850kg and the minimum is 900 kg. The main reasons, which could influence the firewood consumption on cooking forage, are the number of pigs and the time of pig-raising.

c) Heating

In the cold season, the three-stone fire is a widely used facility in the local communities for heating. According to research, the local heating time ranges from 20 days to 270 days. In terms of the statistics, the annual firewood consumption on heating per household is 6,112.6 kg in average. The maximum annual consumption is 19,200kg and the minimum is 375 kg. The number of family population, whether there are elder people and heating room size are three main factors that affect the firewood consumption on heating.

d) Cooking forage for livestock

In winter, it is hardly to grazing. The local communities need to provide hot water and forage to

livestock, such as horses, cattle and sheep. But not every household need to do it because of the geographical and livestock quantity conditions. According to the survey, only 81 households need to prepare hot water in totally 138 households. The annual firewood consumption on cooking forage for livestock is 3,664 kg in average. The maximum annual consumption is 18,000 kg.

e) Drying corn

Some local communities are restricted by geographical and living conditions; therefore, they have to dry corn. This situation is less in the survey area; most households are heating, drying corn and cooking forage for pigs at the same time. The drying time is generally from 6 days to 30 days. The firewood consumption on drying corn is 335 kg in average.

As the project is focused on the reduction of firewood on meal cooking, cooking forage for pigs and livestock, only **category a) & b) & d)** will be considered during GHG emission reduction calculation.

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 Meigu County is the poverty county in national wide no later than 2006[3]. The project is located in underdeveloped zone, and the project is engaged in benefiting the poor community.

In the absence of the project, three-stone fire as the conventional cook stoves is used by the households living in the Dafengding Nature Reserve. Local communities spent a lot of time on cutting wood every year, especially for the old people, cutting wood is a massive work. And they are also threatened by the bad sanitary condition. According to project, HSE could improve the quality of their life effectively, such as air condition.

At the same time, a high efficient cook stove helps to reduce the GHG emission of 17.46 ton CO2e/year which is much lower than 600tCO2e per household. Therefore it meets the additionally guideline of GS STANDALONE MICRO--SCALE SCHEME RULES[4]. So the project could be seen as additional, which means GHG emission won't be reduced in the absence of the registered micro-scale project activity. The timeline of the Project is summarized in the table below:

Table 1: Project Timeline

Date	Event
04/2013	Finished the baseline survey
06/2017	Local Stakeholder Consultation meeting in Meigu couty
06/2017	Consultancy agreement for developing the project as a GS VER project signed between WWF Switzerland and South Pole
12/2017	Project construction start

3 http://www.shaanxifpb.gov.cn/admin/pub_newsshow.asp?id=29007992&chid=100294

4 http://www.cdmgoldstandard.org/wp-content/uploads/2012/05/v2.2_ANNEX-T.pdf

In addition, with the success similar projects from WWF Switzerland, carbon revenue has been seriously considered in the decision to proceed with the project and was the key factor of the project operation.

B.6 Emission reductions:

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

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B 6.1.1. ER Calculation Method

The emission reduction (ER) is calculated according to GS Simplified Methodology for Efficient Cook stoves.

Equation 1

$$ER_y = \sum N_{P,y} * P_y * U_{P,y} * (f_{NRB,y} * EF_{b,fuel,CO2} + EF_{b,fuel,non\_CO2}) * (1 - DF_{b,Stove,y})$$

Where:

ER_y	Emission reductions during year *y* in t CO_2e
$N_{P,y}$	Number of project cookstoves of each age group operational in the year y
P_y	Quantity of firewood that is saved in the year y
$U_{P,y}$	Usage rate for project cookstoves in year y, based on adoption rate and drop off rate revealed by usage surveys
$f_{NRB,b,y}$	Fraction of biomass, used in year y for baseline scenario, which can be established as non-renewable. The project proponents shall estimate project specific national regional value or apply the default f_{NRB} value provided by the CDM Executive Board and endorsed by the host country DNA
$EF_{b,fuel,CO2}$	CO2 emission factor of firewood that is substituted or reduced. (Default value for wood fuel 1.747 tCO2/ton of wood)
$EF_{b,fuel,non\_CO2}$	Non-CO2 emission factor of firewood that is substituted or reduced. (Default value for wood fuel 0.455 tCO2/ton of wood)
$DF_{b,Stove,y}$	Usage of baseline cookstove during the year y in project scenario

B.6.1.2. Number of project cookstoves ($N_{P,y}$)

The project is designed to construct 500 high efficient cook stoves, therefore $N_{P,y}$ = 500 for the ex-ante calculation of emission reduction. This parameter will be monitored ex-post.

B.6.1.3 Wood Reduction (P_y)

Quantity of firewood that is saved (P_y) is estimated as Equation 2

Equation 2

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

Where:

$B_{b,y}$	Quantity of firewood consumed in baseline scenario during year y (tonnes per household per year)
$\eta_{p,y}$	Efficiency of project cookstove in year y
η_b	Efficiency of the baseline cookstove being replaced. 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

$B_{b,y}$ is derived from the baseline survey of local usage as option (b). As per the baseline survey report, the annual quantity of firewood consumed in baseline scenario is 16.5 tones per household in average.

The quantity of the firewood consumption is obtained by face-to-face interview and onsite measure. Since the local people have no clear idea about the weight of the wood is, number of wood bundles is used as a proxy measure. The mass of the wood bundle was weighted by the surveyor later on.

According to the sample guideline in the methodology, when the project proponent chooses to inspect annually, a 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters.

The wood consumption of each family follows a normal distribution; the variance is unknown at the time of survey, so the following equation applies:

Equation 3

$$\frac{\overline{X} - \mu}{S/\sqrt{n}} \sim t(n-1)$$

Where

$\overline{X}$	=	Even weight of wood consumption from the survey date
μ	=	Wood consumption of each device

S	=	Standard deviation of the sample
n	=	Sample quantity, 138 in this project
t (n-1)	=	Student Distribution with the degree of freedom (137)

The 90/10 confidence/precision is calculated below:

Equation 4

$$\left(\overline{X} \pm \frac{S}{\sqrt{n}} t_{\alpha/2}(n-1)\right) \sim \left(16.417 \pm \frac{8.83}{\sqrt{138}} * 1.645\right) \sim \left(16.417 \pm 1.237\right)$$

Where α=1-90%=10%

After the analysis of the survey data, the 90% confident interval is $\left(16.417 \pm 1.237\right)$ with the margin of error is 7.53%, which is lower than required 10%, so the sample accuracy meets the requirement of the methodology.

B.6.1.4. Stove efficiency ($\eta_{p,y}$)

Efficiency of project cookstove in year y ($\eta_{p,y}$) is estimated as Equation 5:

Equation 5

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

Where

$\eta_{p,y}$	Efficiency of project cookstove in year y
η_p	Efficiency of project cookstove determined at the start of the project activity. In the situation where project stove efficiency is determined using WBT, this is the value determined annually as a result of the test
DF_η	Discount factor to account for efficiency loss of project cookstove per year of operation. The default value for this parameter is 0.99 i.e. 1% efficiency loss/year
0.94	Adjustment factor to account for uncertainty related to project cookstove efficiency test

Thermal Efficiencies of the Stoves in the baseline and project scenario are illustrated in the table below:

Item	Efficiency of baseline cook stove (η_b)	Efficiency of project cook stove determined at the start of the project activity (η_p)	Efficiency of project cook stove in year y ($\eta_{p,y}$)
Value	10%	25%	$\eta_{p,y} = \eta_p * (DF\eta)^{y-1} * 0.94$
Data source	Default value (GS Simplified Methodology	Conservative value as similar report	GS Simplified Methodology for Efficient

	for Efficient Cook stoves)		Cook stoves

Baseline cook stove, which has neither chimney nor grate, is made by mud in a rough way. There is no air supply inlet in the stove. So the default thermal efficient of 10% is applicable to baseline cook stove, as indicated in the methodology as the follows:

As indicated in the methodology, a default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e. without a grate or a chimney;

Given that the performance of the high efficient cook stove depends largely on the skills of those who construct it, and given that the finial effect of the high efficient cook stove of the proposed project needs to be proved, we take the most conservative value of 25% in our project, which meets the requirement in the methodology. The actual thermal efficiency of the high efficient cook stove will be determined by Water-Boiling-Test after construction.

By substituting the above input values, the efficiency of project cookstove in year y is calculated in the table below:

Year	Efficiency of project cookstove in year y ($\eta_{p,y}$)
1	23.5%
2	23.3%
3	23.0%
4	22.8%
5	22.6%
6	22.3%
7	22.1%
8	21.9%
9	21.7%
10	21.5%

Further, the quantity of firewood that is saved in the year y (P_y) is calculated in the table below:

Year	Quantity of firewood that is saved in the year y (P_y): tonnes per household
1	9.48
2	9.41
3	9.34
4	9.26
5	9.19
6	9.12
7	9.04
8	8.97
9	8.89
10	8.81

B.6.1.5. Usage rate for project cookstoves ($U_{P,y}$)

As per the baseline survey, the usage rate of project cook stoves is 100%, which is used for the ex-ante calculation of emission reductions. However, it will be monitored ex-post during the crediting period.

B 6.1.6. Non-renewable Biomass Ratio ($f_{NRB,y}$)

As per "Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 2.0", the quantify the amount of non-renewable biomass (NRB) drawn from the fuel collection area is calculated by the following equation:

Equation 6

$NRB = H - MAI$

$f_{NRB,y} = (NRB/H)$

Where:

H	Annual harvest of woody biomass, including forest clearance, timber extraction, consumption of wood fuels, drawn from fuel collection area A
MAI	Sum of mean annual increments of the wood species, or "re-growth" in area A
NRB	non-renewing biomass or excess harvest over and above re-growth, which is the amount of woody biomass removed with attendant CO2 emissions which are not absorbed by re-growth

As per baseline survey report, the annual harvest of firewood (H) in the Dafengding Nature Reserve is 38,258.11 tons and the sum of mean annual increments of firewood (MAI) in the Dafengding Nature Reserve is 4,245.83 tons, therefore the $f_{NRB,y}$ is calculated as follows:

$f_{NRB,y}$ = (H – MAI) / H = (38,258.11 - 4,245.83)/ 38,258.11 = 88.9%, which shall be fixed for the whole crediting period.

B 6.1.7. Usage of baseline cookstove in project scenario ($DF_{b,Stove,y}$)

Baseline stoves that continue to be used would be excluded in the calculation. As per baseline survey report, the $DF_{b,Stove,y}$ is assumed as zero for the ex-ante calculation of emission reductions, and it will be monitored ex-post during the operation period.

B.6.1.8. Leakage

$B_{b,y}$ is multiplied a leakage factor of 95% in this project to avoid leakage survey as the methodology.

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

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Data / Parameter:	$EF_{b,fuel}$, CO_2
Data unit:	tCO2/tonne of firewood
Description:	CO2 emission factor arising from use of firewood in baseline scenario
Source of data used:	IPCC default values, table 1.4 of chapter 1 of Vol.2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value applied:	1.747 tCO2/ton
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

Data / Parameter:	$EF_{b,fuel,non\_CO2}$
Data unit:	tCO2/tonne of firewood
Description:	Non-CO2 emission factor arising from use of firewood in

	baseline scenario
Source of data used:	IPCC default values, table 2.9 of chapter 2 of Vol.2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value applied:	0.455 tCO2/ton
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

Data / Parameter:	η_b
Data unit:	Fraction
Description:	Efficiency of the cookstove being used in the baseline scenario
Source of data used:	The applied methodology
Value applied:	10%
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

Data / Parameter:	η_p
Data unit:	Fraction
Description:	Efficiency of the cookstove being used in the project scenario
Source of data used:	Conservative value as similar report
Value applied:	25%
Justification of the choice of data or description of measurement methods and	Not applicable

procedures actually applied	
Any comment:	N/A

Data / Parameter:	DF_n
Data unit:	N/A
Description:	Discount factor to account for efficiency loss of project cookstoves
Source of data used:	Default value: 0.99 i.e., 1% efficiency loss per year
Value applied:	0.99
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

Data / Parameter:	$f_{NRB,y}$
Data unit:	Fractional non-renewablility
Description:	Non-renewability status of wood fuel during year y
Source of data used:	Baseline survey report
Value applied:	88.9%
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

Data / Parameter:	$B_{b,y}$
Data unit:	Tonnes firewood per household per year

Description:	Firewood consumption for cooking in the baseline
Source of data used:	Baseline survey report
Value applied:	16.5
Justification of the choice of data or description of measurement methods and procedures actually applied	Not applicable
Any comment:	N/A

B.6.3 Ex-ante calculation of emission reductions:

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Emission Reduction (ER_y)

The ER_y is calculated by the following equation:

Equation 10

$$ER_y = N_{P,y} * P_y * U_{P,y} * (f_{NRB,y} * EF_{b,fuel,CO2} + EF_{b,fuel,non\_CO2}) * (1 - DF_{b,Stove,y})$$

As per relevant description in the section B.6.1, the relevant input values and ER calculations are shown in the table below (detailed calculation will be available in the ER calculation EXCEL sheet):

Year	$N_{P,y}$	P_y	$U_{P,y}$	$f_{NRB,y}$	$EF_{b,fuel,CO2}$	$EF_{b,fuel,CO2}$	$DF_{b,Stove,y}$	Leakage	ERs
1	500	9.48	100%	88.9%	1.747	0.455	0	5%	9,041
2		9.41							8,973
3		9.34							8,905
4		9.26							8,836
5		9.19							8,766
6		9.12							8,696
7		9.04							8,625
8		8.97							8,553

9		8.89							8,480
10		8.81							8,407

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

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Year	Estimation of project activity emission (tCO_2)	Estimation of baseline emissions (tCO_2)	Estimation of leakage (tCO_2)	Estimation of overall emission reductions (tCO_2)
Year 1	0	9,517	476	9,041
Year 2	0	9,445	472	8,973
Year 3	0	9,374	469	8,905
Year 4	0	9,301	465	8,836
Year 5	0	9,227	461	8,766
Year 6	0	9,154	458	8,696
Year 7	0	9,079	454	8,625
Year 8	0	9,003	450	8,553
Year 9	0	8,926	446	8,480
Year 10	0	8,849	442	8,407
Total (tCO2)	0	91,875	4,593	87,282

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:

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Data / Parameter:	$U_{P,y}$
Data unit:	Percentage
Description:	Usage rate in project scenario p during year y
Source of data to be used:	Annual usage survey/Monitoring survey
Value of data	100%
Description of measurement methods and procedures to be applied, inc. frequency:	Annual usage survey/Monitoring survey will be conducted.
QA/QC procedures to be applied:	Transparent data analysis and reporting
Any comment:	A usage parameter is derived for each age group of project cookstove being credited

Data / Parameter:	$N_{P,y}$
Data unit:	Number of project cookstove credited
Description:	Cookstove in the project database for project scenario p through year y
Source of data to be used:	Total sales record
Value of data	500
Description of measurement methods and procedures to be applied, inc. frequency:	Continuous
QA/QC procedures to be applied:	Transparent data analysis and reporting. The project has not been registered or to be registered either as CDM project activity or as a CPA of another PoA or under any other voluntary carbon crediting scheme. Each involved household has a unique ID with high efficient cookstove, and the monitoring team will conduct monitoring based on the unique IDs to avoid double counting within the project itself.
Any comment:	The total sales record is divided based on project scenario to create the project database

Data / Parameter:	$\eta_{p,y}$
Data unit:	%
Description:	Efficiency of project cookstove in year y (fraction)
Source of data to be used:	On-site measurements
Value of data	25% (used for ex-ante calculation only)
Description of measurement methods and procedures to be applied, inc. frequency:	The project cookstove efficiency will be determined annually following the WBT protocol. To determine the project cookstove efficiency, three sample runs shall be carried out on at least three randomly selected project cookstoves. The average of the nine results shall be taken as the efficiency for the project cookstove.
QA/QC procedures to be applied:	Transparent data analysis and reporting
Any comment:	N/A

Data / Parameter:	$DF_{b,Stove,y}$
Data unit:	Fraction
Description:	Discount factor to account for the baseline stove use in project scenario p during the year y
Source of data to be used:	Monitoring surveys (annual)
Value of data	0
Description of measurement methods and procedures to be applied, inc. frequency:	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. The minimum number of sample size shall be selected following the guidelines provided in section 4.2, option (b) of the applied methodology. The survey format B (Annex A in the applied methodology) 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.
QA/QC procedures to be	Transparent data analysis and reporting

applied:	
Any comment:	N/A

B.7.2 Description of the monitoring plan:

B.7.2.1. Project implementation structure

The project implementation Structure is shown in the table below:

Content	Responsible part
Stove construction management	WWF China Programme Office
Carbon development	South Pole Carbon Asset Management (Beijing) Ltd.
Monitoring plan implementation	Dafengding Nature Reserve

B.7.2.2. Monitoring procedure

The project participant will maintain and update project database continuously. The record shall be backed up electronically.

The project database will include:

- Data of installation;
- Geographic area of installation;
- Model/type of project cookstove;
- Name and telephone number (if available), address

Monitoring shall consist of checking of a representative sample, once every year to ensure that project cookstoves are still operating by carrying out the usage survey as per the guidelines specified in the applied methodology.

Where replacements are made, monitoring shall also ensure that the efficiency of the new cookstove is similar to the appliances being replaced.

B. 7.2.3. The parameters to be monitored

Parameter	Description	Frequency
$U_{P,y}$	Usage rate in project scenario p during year y	Annual
$N_{P,y}$	Cookstove in the project database for project scenario p through year y	Annual
DF_{η}	Discount factor to account for efficiency loss of project cookstoves	Annual
$DF_{b,Stove,y}$	Discount factor to account for the baseline stove use in project scenario p during the year y	Annual

B.7.2.4. Quality assurance and quality control procedures

The monitoring team designated by Dafengding Nature Reserve will organize the relevant investigators and supervisors to receive relevant trainings on GS monitoring and sampling investigation method.

The quality assurance and quality control procedures include recording, maintaining and archiving data. It will be sustained improved as part of this project activity according to the real practice in terms of the need for verification of the emission reductions.

B.7.2.5. Data management

The local management team and Dafengding Nature Reserve shall establish a data archive (electronic database) once construction starts. The database will include the identification of the stove user, and the dates when the high efficient cook stove is constructed and put into usage. The monitoring information shall be recorded in the database.

All the monitoring data of the project activity was kept as electronic form and paper version in the Local energy office and all the date must be kept in the whole crediting period and the next 2 years, as well regular verification.

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)

>>

Not applicable.

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:

>>

05/12/2017 (when the first high efficient cook stove construction started could be seen as the start date of the project implementation)

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

>>

15 years

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

Fixed

C.2.1. Renewable crediting period

N/A

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

>>

N/A

C.2.1.2. Length of the first crediting period:

>>

N/A

C.2.2. Fixed crediting period:

01/06/2018-31/05/2028

C.2.2.1. Starting date:

>>

01/06/2018 or the expected GS registration date, whichever is later.

C.2.2.2. Length:

>>

10 years

SECTION D. Stakeholders' comments

>> Please note that the blind scoring exercise during stakeholder consultation need not be carried out.

The stakeholders' comments are described in the following sub-sections.

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

>> Please describe the agenda of physical meeting, Non-technical summary, Invitation tracking table, Text of invitations sent, any other consultation method used

In terms of the area environmental impacted by the project, local villagers, village cadres and staff worked in Dafengding Nature Reserve affected by the project are identified as the stakeholders of the project.

Given the approach of receiving information from the stakeholders of the project, on 22/04/2017, the project owner, by means of posting a public notice, invited local villagers, village cadres and those staff worked in Dafengding Nature Reserve interested in the project. A total of 86 people attend the meeting. During the meeting, the deputy director of Administration Bureau of the Nature Reserve discussed some questions with villagers refer to the project.

The questions mainly focus on the following issues:

How to prepare the construction material of high efficiency cook stove?

How about the daily food and drinks for technician during the construction of cook stove?

What is the attitude of the stakeholders on the construction of the project?

What might be the positive impacts as a result of the implementation of the project?

What might be the negative impacts as a result of the implementation of the project?

D.2. Summary of the comments received:

>> Please describe the outcome of the meeting, assessment of stakeholders comment, list of participants.

The survey shows that most of the stakeholders at the project site consider that the implementation of the project could generate a lot of positive effects.

The questions and comments are shown below:

Stakeholder comment	Explanation
How to prepare the construction material of high efficiency cook stove?	Most construction material should be provided in free, include 500 red brick, 2 ceramic tile, 6 bags of cement, 1500 tons of silver sand and 2

	check bridge.
Is there any other material need to prepare by them?	Clay and mortar have to be prepared by villagers.
How about the daily food and drinks for technician during the construction of cook stove?	If it is possible, the villagers could be responsible for the food and drinks of technician.
All the villages agree to care technician's life during the construction of cook stove, but they still worried that whether the bad living environment could affect the quality of cook stove	There is no hesitation about this problem. The villagers just need to provide enough food to technician. And it will not affect the quality of cook stove.
Villagers agree to buy 2 pots.	They reach a consensus in the size of pots, the diameter of one pot that used to cook forage is 90cm and another for cooking is 60cm.

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

>> Please discuss how the stakeholder's comments have been addressed and include the changes to the design of the programme based on their feedback.

All the stakeholders are satisfied with the project; there are no negative comments indeed. Local residents are all very supportive to the implementation of the project. Therefore, it is not necessary to modify the project design based on the stakeholders' comments.

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 following input/grievance method was published in the meeting.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	The book is kept in the office of Meigu Dafengding Nature	Participants of the LSC meeting is invited to contact the Nature reserve for comments or grievances via phone or book.

	Reserve.	
Telephone access	13980997669	Hexin, the project manager of the Meigu Dafengding Nature Reserve
Internet/email access	xhe@wwfchina.org	Hexin, the project manager fo the Meigu Dafengding Nature Reserve
Nominated Independent Mediator (optional)	n/a	n/a

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:

>>

The information will be added later.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Swiss Carbon Value Ltd.
Street/P.O.Box:	Technoparkstrasse 1
Building:	
City:	Zürich
State/Region:	
Postfix/ZIP:	8005
Country:	Switzerland
Telephone:	+41 43 501 35 50
FAX:	+41 43 501 35 99
E-Mail:	registration@southpolecarbon.com
URL:	http://www.southpolecarbon.com
Represented by:	Renat Heuberger
Title:	
Salutation:	Mr.
Last Name:	Heuberger
Middle Name:	
First Name:	Renat
Department:	Implementation
Mobile:	
Direct FAX:	+41 43 501 35 99
Direct tel:	+41 43 501 35 50
Personal E-Mail:	

Annex 2 - **Information regarding Public Funding**

The Gold Standard®
Premium quality carbon credits

The Gold Standard reserves the right to conduct an investigation into any project it reasonably believes may be receiving ODA with the condition that some or all of the carbon credits from the project will be transferred to the ODA donor country.

IV. Sanctions

I am fully aware that the sanctions identified in The Gold Standard Terms and Conditions may be applied to me or the above-referenced project in the event that any of the information provided above is false or I fail to notify The Gold Standard of any changes to ODA in a timely manner.

I swear that all of the statements contained herein are true to the best of my knowledge.

Signed: _____

Name: Damian Oettli

Title: Head of Business & Consumption

On behalf of: WWF Switzerland

Place: Zurich

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The Gold Standard®
Premium quality carbon credits

ANNEX D - OFFICIAL DEVELOPMENT ASSISTANCE DECLARATION

Date: [*21/06/2017*]

The Gold Standard Foundation

79 Avenue Louis Casai

Geneva Cointrin, CH-1216

Switzerland

RE: Declaration of Non-Use of Official Development Assistance by Project Owner of [GS 5842]

[WWF Switzerland]

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

[*Bella Roscher*]

I hereby declare that I am duly and fully authorized by the Project Owner of the above-referenced project to act on behalf of all Project Participants and make the following representations:

I. The Gold Standard Documentation

I am familiar with the provisions of The 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 with the condition that some, or all, of the carbon credits [CERs, ERUs, or VERs] coming out of the project are transferred to the ODA donor country. I hereby 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 of implied, that any or all of the carbon credits 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 carbon credits generated from the project as a condition of investment, I will notify The Gold Standard immediately using the Amended ODA Declaration Form provided below.

III. Investigation

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