VOLUNTARY PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(VPoA-DD) Version 01

Qori Q'oncha – Improved Cookstoves Diffusion Programme in Peru

CONTENTS

Annexes

SECTION A. General description of programme of activities (PoA)

A.1 Title of the programme of activities:

Qori Q'oncha – Improved Cookstoves Diffusion Programme in Peru

Version: 9.
Date: 11.01.2011 (DD/MM/YYYY)
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A.2. Description of the programme of activities:

The PoA "Qori Q'oncha – Improved Cookstoves Diffusion Programme in Peru", a MICROSOL initiative, aims to coordinate various actions of cookstoves voluntary diffusion activities in Peru. The activities will be therefore presented through Voluntary Program Activities (VPAs) of improved cookstove diffusion in Peru.

The cookstoves diffusion activities will all follow the same framework described in this PoA, description is detailed below.

The improved stoves replace three stone or a terra cotta "fogón" constructed with local material by people themselves.
The target population are rural and urban beneficiaries.
The type of use of the improved cookstoves(ICS) can be domestic, commercial or institutional.
The main characteristics of the ICS disseminated as part of programme are that each sold new stove emits less GHGs than the replaced one (compare the new with the old technology) and it has a chimney.
The principal benefits of the programme are environmental care, health benefits, carbon incomes and economic savings due to reduce in fuel prices or collecting time.

The activities are coordinated by two entities:

- MICROSOL, a French social company working in Peru is the managing entity.
- myclimate – The Climate Protection Partnership, Swiss foundation based in Zürich.

Besides coordination activities implemented by MICROSOL, the proper cookstove diffusion activities will be implemented by various local actors (Local Project Participant, LPP):

- Peruvian branch of international NGOs;
- Peruvian NGOs;
- International institutions;
- Regional and local authorities (regional government, provincial municipalities, local municipalities);
- International and national companies;
- Peruvian inhabitants organized in communities or associations.

LPPs are in charge of implementing the cookstoves and ensure its follow-up.
Whenever a stove diffusion scheme is made by selling the stove, the issue of credit property transfer shall be clarified by a written statement. The transfer of credit ownership shall be demonstrated from the beneficiary to the LPP.
So that the property transfer scheme, defined for each arrow by contract, is as follows:
Beneficiary → LPP ➔ PP ➔ Final buyer

However, in Peru, lot of cookstove diffusion actions are made by donations in which LPPs manage to be considered as credit owners. In such a case, beneficiaries are informed of the carbon market certification process occurring and must not have any opposition to it as stove users or stove users representatives.
Corresponding evidences, on both cases of donation and selling shall be provided at verification stage as accepted by Gold Standard.

A.3. Coordinating/managing entity and participants of POA:

Two companies are involved in the coordination of the PoA:

1°) MICROSOL – managing entity/PoA account holder:

This French company has its central office in Nanterre, France and activities occurring in Latin America, those in Peru being centralized in Lima. MICROSOL develops and coordinates PoAs with very strong social impact.

MICROSOL's teams:
- Design the PoA.
- Define the program activities alongside with the Local Project Participants (LPPs) of each VPA;
- Adapt project activities to carbon markets rules, requisites and processes;
- Redact the PoA-DD, VPA-DDs, monitoring reports and other documents related to the carbon market processes including answers to DOE and Gold Standard;
- Coordinate locally the whole steps of carbon market processes (Gold Standard registration, stakeholder's consultation, validation, verification, VERs generation);
- Coordinate the monitoring activities and trains the LPPs of each VPA on monitoring processes and other carbon related activities.

MICROSOL is hence the entity which communicates with the Gold Standard.

2°) myclimate – final credit buyer:

This Swiss foundation has its central office in Zürich. myclimate develops and supports high quality carbon offset projects throughout the whole world.

myclimate carries on the carbon market related processes:
- Revision of the PoA-DD, VPA-DDs and other documents related to the carbon market

- Support in relation with the carbon market actors (Gold Standard, DOEs),
- Support in organization of the non-Peruvian side of each step of the carbon market process (Gold Standard registration, validation, verification, VERs generation);
- Final selling of credits.

A.4. Technical description of the programme of activities:

A.4.1. Location of the programme of activities:

A.4.1.1. Host Party(ies):

Peru.

A.4.1.2. Physical/ Geographical boundary:

The location of the programme of activities is the whole country of Peru.

Each VPA will be implemented in various locations of Peru. These locations will be described with precision in the corresponding VPA-DDs.

A.4.2. Description of a typical Voluntary Programme Activity (VPA)

A typical VPA will include one or more diffusion projects of improved cookstoves in defined regions of Peru, being implemented over a defined period of time. Each VPA will be divided in clusters. A cluster is the largest homogeneous group that can be defined by considering used fuel types, the stove type, the region, the LPP or other aspects. The clusters will be built on VPA Level depending on results from a Kitchen Survey described below.

The general framework of the diffusion of improved cookstoves can be described as follows. Each LPP in each VPA can refine this, taking into account the specific context it works in.

The LPP has to define a target population to which it will diffuse the stove and will then consider how. If a LPP often has a stove model in mind or even already developed, he might do some modifications of the model according to the place he will work in and the specificities of the target populations. The LPP defines the production scheme so as to be able to provide massively the corresponding zone taking the geographical and logistical context as well as the locally available capacities into consideration.
The adequate methodology having been defined, the diffusion team is chosen and trained and project participants start receiving project participation criteria and stove building, stove use and stove related consciousness rising sessions.
Follow up and monitoring activities will be held in the whole beneficiary population so as to ensure adequate long term use of the stove and accurate knowledge of the project situation in terms of results.

MICROSOL works closely with the LPPs in order to maximize the project results in the context of a Gold Standard carbon credit accreditation process.

A.4.2.1. Technology or measures to be employed by the VPA:

The technology being disseminated by the VPAs is the improved cookstoves. The specific models of stove that will be disseminated may vary in some details, due to:

- Taking into consideration the specific needs of the population.
- Taking into consideration the ability and experience of each LPP;
- Taking into consideration the presence and nature of local materials that are always preferred in the construction process;
-

Yet some points do not vary in the stove technology that is being disseminated:

- It respects basic physics rules in the technology design, in order to optimize internal combustion and practical use of the stove;
- Isolating materials are used, in order to optimize heat efficient use;
- The cookstove is at least partially closed and has a chimney that draws the toxic smokes outside the house.

Each VPA-DD will mention the type of improved cookstove disseminated by each project participant of the VPA. Photos will be presented in the VPA-DD.

A.4.2.2. Eligibility criteria for inclusion of a VPA in the PoA:

For the VPA activities to be eligible to the PoA, it must fit into several criteria as listed in the 'VPA LPP Eligibility Form' See Annex 3.

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a VPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

Apart from showing the reduction of greenhouse gas emissions, it is shown below that the PoA is additional to the baseline scenario. This is done by using the UNFCCC's "Tool for the demonstration and assessment of additionality". Version 5.2 is used.

The following steps show the additionality of a typical VPA:

⇨ **Step 0 (required by Gold Standard): Previous Announcement Check**

The Programme is a voluntary action of PP and has never been publicly announced to be implemented without carbon credits. Funding the program and its VPAs by carbon credits has been discussed within MICROSOL since 2007.

For each LPP, an assessment will be made by Microsol in order to demonstrate that it considered the carbon credits in the decision of VPA activities.

⇨ **Step 1. Identification of alternatives to the project activity consistent with current laws and regulations**

Sub-step 1a. Define alternatives to the project activity:

Three alternatives to the project activities do exist:

Alternative 1: Cooking with traditional cookstove

The most credible alternative to the project is a continuation of the baseline situation: a lack of funding and appropriate distribution channel for this technology, people having virtually no way of improving alone the quality of the stove. What is now used for domestic cooking is a three stone or a terra cotta "fogón" on the ground in which fire is made. This artifact is pierced with two or three holes to hold pans. Generally built by the users themselves, the "fogón" can also be bought from local markets yet this is very marginal, and has an average life span of a few months. No improved technology is largely available for the population. While various suitable alternative techniques have been invented in the country, the lack of financial resources (such technologies are more expensive), interest, understanding of the technology and appropriate distribution channel are current obstacles to their dissemination.

Alternative 2: Cooking with gas

As some urban families do, beneficiaries could use LPG for cooking instead of biomass, a perfectly legal scenario. Nevertheless, we will see that such a scenario would face significant barriers having to do with corresponding access, costs and supply.

Alternative 3: Project activity without carbon funding.

Improved cookstoves being diffused without carbon funding.

Sub-step 1b. Consistency with mandatory laws and regulations:

No mandatory policy/regulation does exist in Peru regarding stove dissemination, the proposed PoA is not a compulsory action, improved cookstove dissemination activities in Peru are all voluntary actions.
All three alternatives comply with all mandatory applicable legislation and regulations per sé as, there are currently no laws regulating the domestic cooking in Peru.

⇨ **Step 2: Analysis of the investment**

This step is not required as "barrier analysis" is used.

⇨ **Step 3: Barrier analysis**

Sub –step 3a: Barrier Identification

Investment barriers:

- *Excessive amount and change in spending for cooking device:*.
  For Improved cookstove
  In the baseline scenario, people construct themselves their stove with local material so the traditional stove can be considered as costless. In the unusual case where a stove is bought, people spend a maximum of 10[1] PEN (=2,5 EUR) every year[2].
  The improved stoves have material costs varying between 60 and 160[3] PEN (between 15 and 40 EUR) depending on the materials. This can be more if accessories (water heater, integrated oven…) are used.

  For gas
  A gas stove costs a minimum of 70[4] PEN, cylinder costs a minimum of 70[5] PEN so that the investment for being able to use gas is at least 140PEN also an unaffordable investment.

  As for comparison, average income in rural populations is 214,7[6]PEN and it drops to 64,9[7] PEN for the poorest population of the country. Buying an improved stove or a gas stove is therefore an important investment that most of the people cannot afford.

- *Unavailable credit financing:* The credit option is very unlikely since most of beneficiaries have simply no access to banking services and would anyway be considered as unsolvable. Furthermore such small credit size are unavailable in Peru where even microloans often do not consider such small loan because of high transaction costs and less if it is a credit for buying a consumer good and not for running a productive activity.

Technological barriers:

-
- Prevalence of traditional behaviors and low production volumes (bad design) implies that the needed economies of scale cannot be achieved[8].

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[1] Data collected on the field by MICROSOL and verified in cusco's markets.

[2] Data collected on the field, average life expectancy of 1,5 year.

[3] Reference is taken from the first VPA's LPP's spare parts costs.

[4] http://listado.mercadolibre.com.pe/cocinas-gas, copy of web site page provided to DOE.

[5] http://www.evisos.com.pe/compra-venta/avisos-varios/vendo-balones-de-gas-vaciacuteos-de-10-kg

[6] http://iinei.inei.gob.pe/san/fotonoticias/n15707c01.pdf

[7] Same ref. as 21.

[8] Declaration of a former Project coordinator, cited in http://www.heiferperu.org/04iniciativas/documentos/sistematizacioncocinas.pdf pp. 21-22.

- Lack of infrastructure in general in the country (few roads, in general bad shape, especially in remote poverty regions) leads to high transport costs (e.g. use of expensive 4x4 off-road cars for transporting material and bringing the stoves to the users, large transporting distances, slowness of transport)[9].
- As there is few knowledge of the technology, confidence in it is unlikely and eventual savings not credible. Existing technology remains less risky.

All this points lead to the fact, that addittional material cost and other costs related to technological barriers would have to be added for being able to market the product (human resources capacity building, transportation, operating costs).

Barrier due to prevailing practice:

In Peru a high number of families[10] are used to cook with non improved stoves and there are strong cultural significations related to this. The introduction of improved stoves has thus to be accompanied with a change in the fuel use, cooking habits and cooking methods and even believes of the populations. Therefore it is necessary to:

- Realize sound sensitization campaigns.
- Realize stove use capacity building courses.
- Market the product in local and regional spaces.
- Implement adequate close follow-up
- Periodically monitor stove use

All this implies of course important additional costs for a stove diffusion project to be feasible and moreover to be sustainable

Finally we see that due to investment, technological and cultural barriers, improved stoves remain unaffordable for most of the Peruvian population. That is why it is very unlikely that project activity would occur without carbon funding as it would not find sufficient demand. That is why prices have to be widely subsidized thanks to carbon funds. A moving to gas scenario is also not credible as investment barrier is also very high.

Sub-step 3 b. Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed program activity)

The three barriers do not affect the alternative scenario of current situation continuation because;

- No investment barrier: the households already own non improved stoves that are generally costless.
- No technological barrier: traditional stoves can easily be manufactured, the know-how is traditionally available, production is local, no transport costs. The 3-stone

[9] http://www.capeco.org/Downloads/RevistaCeI/2009/indices/rcei0909_222324.pdf

[10] 33% of the populations, more that 2M households use wood as first fuel. Look for "Censo Poblacion y de Vivienda 2007" in the INEI website www.inei.gob.pe entering the "Résultadoes Censales" window, selecting the "Bases de Datos REDATAM - Censos Nacionales 2007: XI de Población y VI de Vivienda" link and then select question H of "Hogar" section. Data has been provided to DOE.

method does not even need any manufacturing. Inefficiency is the normal situation and therefore not recognized as such.

- No barrier due to prevailing practice: the huge majority of the population knows the non improved stoves technology, and or cooks with non improved stoves or knows how to handle it as it is very simple to.

The only credible situation for the short and the long term is the use of biomass combustible. As all other alternatives face one or more barriers, the baseline of the project activity is Alternative 1 i.e. cooking with non improved cookstoves, i.e. current situation))

Overview of the barriers faced by the different alternatives:

	Alternative 1: cooking with non improved (traditional or 3 stone) cookstove (current situation)	Alternative 2: cooking with gas	Alternative 3: program activity without carbon credit funding
Investment barrier	n/a	X	X
Technological Barrier	n/a	X	X
Barrier of prevailing practice	n/a	X	X

⇨ **Step 4: Analysis of existing practices**

Some projects comparable to the activity of the project have been completed in Peru in the past, and will likely in the future, Yet, if these projects can be considered comparable to this programme (similar technology, identical conditions, comparable areas, facing (but not necessarily overcoming) the same technological barriers), they present differences with the project activity in terms of scale, financial flows, monitoring, diffusion methodology and sustainability.

As a matter of fact those projects have high proportions of grants funding and/or work on a small scale and/or do not consider appropriate sensitization, capacity building and have few interest in follow up activities that won't last, in the best case scenario, a few years after installation.

As for examples, the two following initiatives use grant money, have limited presence in time on the field and are mainly focused on health impacts of the improved cookstoves.
- Whole Peru, Heifer Peru: aprox. 250 stoves a year between 1997 and 2008, [11]
- Huancavelica Peru, Caritas: Aprox. 200 stoves a year between 2000 and 2004[12],

[11] http://www.heiferperu.org/04iniciativas/documentos/sistematizacioncocinas.pdf, p. 31.
[12] http://www.caritas.org.pe/nuevo/docments/huancavelica.pdf

Project activities present essential differences with existing practices:

(1) **Scale is bigger:** The projects mentioned above have volumes of diffusion of 200 and 250, so that, doubling the maximum of 250, one can conservatively define 500 as the threshold above which activities are considered to be different from existing practices of pilot project. As a matter of fact, one cannot pretend to face demand with a volume lower than 500. Related to this, financial needs are much more important and investment would therefore be more risky if additional return from carbon funding would not be available.

(2) **Funding is not restricted to grants and includes various funding strategies including for profit. This can be:**
Additional finance from the local NGOs (auto financed or grants from international NGOs) looking for social and environmental impact, international recognition related to independent certification process and the generation of own financial resources related to the carbon market that will allow both the sustainability of the considered project activities and the implementation of other social and/or environmental initiatives.
Private finance from local companies looking for increasing quality of life, contributing to sustainable development, generating carbon funds for further project and being able to communicate on the independently and professionally certified positive social and environmental impacts of the project activities they supported in the framework of the corporate responsibility strategy.
Private finance from MICROSOL aiming at refunding with carbon credits.
Finances the following activities: design and operate the PoA, counseling the LPPs on the design of the project, capacity-building on environmental aspects of the activities and evaluation processes.
Private finance from MYCLIMATE aiming at refunding with carbon credits. Financing the following activities: the certification process; paying additional costs linked to the whole process of the carbon market, general counseling on the whole project.
Public finance from regional and local authorities as the perspective of carbon credits allows finding partners such as local NGOs and private firms and thus reducing the level of investment of local and regional authorities for a good-quality and large scale project.

Such a number of diverse actors mainly motivated by the various benefits of carbon credits represent an essential difference with existing practices.

(3) **Specific focus is made on sensitization and capacity building.** Existing projects rarely consider health AND environmental impact in their sensitization[13]. Capacity building to stove use and stove construction and maintenance is usually scarce when it is central to project activity with corresponding additional costs. Multifacetic

[13] http://www.heiferperu.org/04iniciativas/documentos/sistematizacioncocinas.pdf pp. 21-22.

capacity building is on the contrary done at some point in the framework of the project activities.

(4) **Monitoring is considered as a central and long term necessity.** Current projects have a presence on site and implement follow-up activity for no more than, in the best case, a couple of years. Project activity work on a long term basis, Monitoring is implemented during at least 7 years and important additional cost are due to this particularity.

Such differences require a higher investment than for existing projects, which is made possible by carbon finance

The presence of similar projects is then noted, but essential distinctions strongly and immediately related to carbon finance do exist between these projects and the project considered here.

Conclusion

The barriers explained here above prevent the implementation of the program activity without carbon funds as well as the alternative scenarios. Therefore the baseline scenario is the continuation of the current situation (continued use of wood in non improved stoves in the next 7 years).

Gold Standard registration will give the program activity the needed funding and will help the PoA to overcome barriers so that revenues from carbon credits allow the LPPs to offer at large scale the locally produced stoves at subsidized prices compatible with local population's ability and willingness to pay for such a device with appropriate sound capacity building and follow-up. Without the support from carbon credits the stoves would not be marketable, and less in the adequate way they are in the project activity.

This project does not correspond to the baseline scenario. It is additional.

A.4.4. Operational, management and monitoring plan for the programme of activities:

A.4.4.1. Operational and management plan:

The LPPs of each VPA express their wish to be part of the PoA through any written agreement.

LPPs are in charge of the operations on the field leading to the installation of the improved stoves. LPPs are also in charge of creating the information for monitoring. MICROSOL acts as a supervisor of these activities: all information will be centralized, analyzed, controlled and archived by MICROSOL. After presentation, validation and verification of each VPA, every data will be kept electronically until 2 years after the final of the crediting period.

Double counting will be avoided through registry procedures of the cookstoves disseminated within each VPA of the PoA. Each VPA will provide a list of communities and of the specific beneficiaries in each community that received a cookstove.

A central registry of beneficiaries will be managed by MICROSOL and each LPP will be asked to provide initial data of beneficiaries with precision of who the surveys have been held with. Then during the whole crediting period, this central registry will be continuously updated with data from LPPs assessing how many stoves are still in use and with which beneficiaries the successive survey have been done. A part of this, MICROSOL will feed a global central database of all surveys realized by each LPP.

A.4.4.2. Monitoring plan:

The monitoring plan is based on the Gold Standard Cookstove Methodology: "Methodology for Improved Cookstoves and Kitchen Regimes – V.01", it shall be applied to each and every VPA. First, anticipated emission reduction are calculated thanks to the comparison between emission in project scenario and emissions in baseline. That for, homogenous groups named cluster are qualitatively identified and their specific profile of reduction is quantified and then each cluster result is aggregated so as to define total emission reductions anticipated.

During the whole duration of the project, the initial list of the families having received an improved stove is continuously updated and qualitative survey are realized so as to follow up eventual variations in cluster differentiation and emission reductions . Then, every two years at least, a general update of cluster differentiation and corresponding total emission reductions is carried out with basically the same methodology as that used for initial emission reductions measurement combining qualitative and quantitative surveys. A monitoring report will then be produced. A report than can be anticipated whenever continuous monitoring results require so. Finally, other aspects such as leakage, SD matrix, NRB and eventual DNH mitigation parameters analysis are also monitored bi-annually.

In case any activity of any VPA is implemented in the same community than a previous activity presented in another VPA, a crosscheck between beneficiaries lists shall be done to avoid double counting.
Besides whenever any other project of carbon offsetting with stoves shall be identified in the community, contact with corresponding entities shall be taken so as to be able to do the corresponding crosscheck between databases.

For site visit of the DOE, spot checks should be performed with the following sampling method:

- Do spot checks for each cluster with the following sample size:
- Cluster size <300: Sample size = 15
- Cluster size 300 to 1000: Minimum sample size= 5% of cluster size
- Cluster size > 1000: Minimum sample size= 50

The sample size defined is half the methodology monitoring sample size as for spot checks no such a high figure can be required and half of it is considered reasonable and corresponds to the CDM guidelines[14].

- For spot checks sample distribution:
- Select 2 provinces randomly but also taking into consideration logistical and representativeness principles Exclusion of communities is limited to a maximum 20% of the beneficiaries), after this exclusion you have the final universe.
- Then calculate sample sizes of each province proportionally to respective weights of provinces. That is, for example, in the case of two provinces finally selected for a cluster, if province 1 represents 40% of the total beneficiaries (before exlusion) of province 1 plus province 2, then sample size for province one should be 40% of total sample size). If a cluster has less than or equal 2 provinces, select all provinces. Note that representing all provinces is neither feasible nor necessary at this stage as what is done is spot-checks
- In each province, select one community randomly to do the spot checks, but also taking into consideration logistical and representativeness principles (exclusion of maximum 20% of the beneficiaries).
- In each community, select the households randomly.
- If required spot-checks number cannot be achieved in the selected community, then select another community randomly and complete spot checks.

Managing entity shall define VPAs for which issuance of credits is requested so that not necessarily all VPAs at a given time shall go for request of issuance of credits.

For 1-10 VPAs for which issuance of credits is requested, all clusters of 1 VPA selected randomly, will be verified
For 11-20 VPAs for which issuance of credits is requested, all clusters of 2 VPAs selected randomly, will be verified
For 21-30 VPAs for which issuance of credits is requested, all clusters of 3 VPAs selected randomly, will be verified
For every batch of up to 10 VPAs for which issuance of credits is requested, all clusters of 1 VPA selected randomly, will be verified.
This sampling procedure will be applied for each VPA-group corresponding to each version of PoA that will exist at any particular time.

A.4.5. Public funding of the programme of activities:

The PoA makes no use of public funding. Whenever a VPA would include activities partially or totally financed through public funding, then an assertion within the VPA will mention that fact.

[14] General guidelines for sampling and survey for small-scale CDM project activities", Version 01..

SECTION B. Duration of the programme of activities

B.1. Starting date of the programme of activities:

01.01.2008 (DD/MM/YYYY)

The first stove constructed by an LPP in the framework of the first VPA has been built during the month of January 2008 (See evidence of installation of LPPs in VPA 2008-2009).

B.2. Length of the programme of activities:

28 years.

SECTION C. Environmental Analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

The SD matrix has to be adapted for each project including the beneficiaries' comments done during the stakeholder consultation so that SD monitoring parameters will be defined at VPA level. Nevertheless, as a stakeholder consultation has been done at PoA level, the corresponding SD matrix (See PoA Passport), shall be used as a basis for assessment of the adapted matrix at VPA level. In particular parameters shall be defined at VPA level

DNH assessment is done at PoA level (See PoA Passport) as context is know by PP who was able to identify the main risk that is corruption which shall be monitored at VPA level. Yet, as not all LPPs are know at the moment of presenting the PoA, it is necessary they sign, at VPA level of for all activities they may implement in this PoA, a DNH declaration so as to ensure they are committed with the corresponding principles (See annex 04).

C.2. Documentation on the "No-Harm Assessment":

Requisites of the Gold Standard are followed for the No Harm Assessment.(See PoA Passport).

A Do Not Harm Declaration (Annex 4) has to be signed by each LPP. Whenever any connection with any abuse of the principles would be demonstrated, further information must be provided. If involvement or complicity is demonstrated, immediate counter arresting measures should be taken. If they would be considered insufficient, carbon credits benefits might be restrained from corresponding LPP.

A mitigation measure for criteria n°11 is described in section E.7.1. The related information will be joined to the Monitoring Report for each VPA and evidence will be kept by each LPP and made available for verification.

C.3. Documentation on the analysis of the environmental impacts, including transboundary impacts:

Requisites of the Gold Standard are followed here with the Sustainable Development Matrix.

See PoA Passport for the version of the Consolidated Sustainable Development Matrix obtained after PoA level SHC (stakeholder consultation) and FBR (feedback round).

All non neutral impacts, as a result of corresponding VPA level stake holder consultation, shall be documented and followed up in the framework of the VPA-DDs thanks to the biennial Monitoring Reports. See section E.7.1 for list of parameters, indicators and processes to be implemented.

C.4. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical VPA, included in the programme of activities (PoA),:

An environmental impact assessment is not required for a typical VPA included in the programme of activities. There are no laws/regulations in Peru that request environmental impact assessment for this type of activities.

SECTION D. Stakeholders' comments

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

The event done in August 21st of 2009 was meant to present the PoA, so all discussion and comments were referred to this level. Comments referring each VPA will be collected in local SHC events, being arranged for January 2010 with our current LPP. Local SHC shall be done at PoA and VPA level.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

Besides the comments received during the stakeholder consultation, all participants were asked by e-mail, thanks to the directions each assistant provided at the moment of signing up their attendance, to send us their comments. This was considered the best way to administrate comments because all the invitees have internet connection and e-mail accounts, so it was faster and straight forward to do (than, for example, calling them or sending mail letters). After a 1 month period of insisting in sending us back the comments, there were 4 persons who answered back. All comments can be read according to GS template in point B.3.ii in the SHC Report.

D.3. Summary of the comments received:

Comments on program activity:
General comments on the activity presented were as follows: even though one participant asked for the definition of the adequate stove model, the vast majority agreed in saying that there are different stove models and implementing implementation strategy adapted to different contexts so that not only one can be defined. In that sense, the program definition was considered adequate. Regarding the Program of Activities, the fast way in which projects are included in Qori Q'oncha was mentioned as well as the guarantee it provides for the sustainability of the projects through the carbon market.
In that sense, a question was made on how does the program ensure that the old stove is not used anymore.

Comment on indicators:
Regarding the Sustainable Development Indicators, the general evaluation of them was led to a consensus reflected in PoA Matrix. Some interesting comments were made regarding potential parameters that might used for monitoring indicators for example eye irritation for livelihood of the poor.

Comments on organisation:

As far as the organisation is concerned, the dynamic of requesting stakeholders participation in the event and the diversity and number of institutions present was appreciated. The dynamic expositions and good theoretical handling of the issue was also valued. Nevertheless, it was stressed that a greater participation in general and presence of direct beneficiaries would have been better. Also,
Finally, recommendation was made for a tighter control on indicators discussion time to as to ensure good quality discussion for each one of them and a group dynamic was suggest as debate between such a big group is considered difficult as well as the fact of sending in advance the indicators to be discussed for a better discussion.

D.4. Report on how due account was taken of any comments received:

Comment on program activity:

It was not the objective of the event to provide standards of an ideal cookstove model, but to explain the characteristics they have to follow in order to be included in the QQP, which follows the GS methodology, and the ways to monitor it. This is why we do not define a single, specified model but promote the idea that they must be adapted to each environmental, social, cultural and economic conditions.
Regarding the old stove issue, as discussed in part E.6.1 (L5), the destruction of the stove is not made compulsory nevertheless carbon market incomes act as incentive for it to be.

Comments on indicators:

The consolidated matrix at PoA level is presented in the PoA Passport, consideration has been taken of the comments and more indicators have been define as positive than it what initially thought. Recommendation on eye irritation as a parameter has been registered as well as the fact of reducing the time slot in the case of cought or cold and be careful on not confusing beneficiaries impact and logging impact about deforestation. Parameters are defined at VPA level.

Comments on organisation:

Concerning time periods, they were measured during the event but questions where, at times, not mainly focused on the indicators which provoked a distortion in the program. Anyway, we consider this information also relevant and will reinforce for VPA level strict considerations about how to direct the meeting.
Concerning, the previous sending of the indicators to be discussed, if the GS guidelines were followed and all invitees were sent a 1 page long non-technical summary about the POA and the VPA 1 that did not allow such precision. Nevertheless, recommendation is considered relevant and may be applied in other opportunities.
Concerning the beneficiaries' intervention, direct beneficiaries were not the main focus at this level and, their participation is directly targeted in each VPA SHC event, level at which their presence and intervention is highly promoted. At this PoA level, stakeholders

organizations with expertise in the cookstove field, implementing intervention as well as theoretically intervention were mainly invited as Qori Q'oncha has national range of activities and is dedicated to these actors in particular. Nevertheless, at VPA level beneficiaries' participation is mandatory.

SECTION E. Application of a baseline and monitoring methodology

E.1. Title and reference of the approved baseline and monitoring methodology applied to each VPA included in the PoA:

The approved baseline and monitoring methodology applied to each VPA is the Gold Standard approved: "Methodology for Improved Cookstoves and Kitchen Regimes – V.01".

It is available on the Gold Standard website:
http://www.cdmgoldstandard.org/fileadmin/editors/files/6_GS_technical_docs/manuals_and_methodolgies/GS_Methodology_Cookstove.pdf

E.2. Justification of the choice of the methodology and why it is applicable to each VPA:

The Gold Standard "Methodology for Improved Cookstoves and Kitchen Regimes – V.01" was chosen because it does exactly match to the project activity. The first paragraph of this methodology indeed clearly says:
"This methodology is applicable to programs or activities introducing improved cookstoves and practices to households and institutions within a distinct geographical area."

Then it states:
"The following conditions apply:

- *Low-emission cook-stoves and regimes replace relatively high-emission baseline scenarios.*
- *The project boundary can be clearly identified, and the stoves counted in the project are not included in another voluntary market or CDM project (i.e. no double-counting takes place).*
- *The project is located in a single country.*
- *The improved cook-stoves do not number more than ten per kitchen and each have continuous useful energy outputs of less than 50kW (defined as total energy delivered usefully from start to end of operation divided by time of operation).*

Each VPA will consider the introduction of low emission cookstoves and regimes within a clearly identified project boundary – described in each VPA - within the Peruvian territory with a limit number of ten stoves per household and a unitary energy output of less than 50kW. Hence this methodology is applicable to each VPA.

E.3. Description of the sources and gases included in the VPA boundary

The greenhouse gases included in the VPA boundary are the three gases considered by the Gold Standard Methodology for Improved Cook-stoves and Kitchen Regimes V.01: CO2, CH4 and N20 emissions. Each VPA will assess the gases to be considered depending on the specificity of the activities.

	Source	Gas	Included?	Justification / Explanation
Baseline	Cooking	CO2	Yes (for all VPAs)	Important source of emission. IPCC values have to be applied.
		CH4	Defined on VPA Level	Defined in VPA depending the used fuel and stove type.
		N2O	Defined on VPA Level	Defined in VPA depending the used fuel and stove type.
	Transport of fuel	CO2	No	To have a conservative approach, emissions from transport of fuel are excluded in the Baseline.
		CH4	No	
		N2O	No	
	Production of fuel	CO2	No	To have a conservative approach, emissions from production of fuel are excluded in the Baseline.
		CH4	No	
		N2O	No	
	Transport of raw material	CO2	No	To have a conservative approach, emissions from transport of raw material to build the old stoves are excluded in the Baseline.
		CH4	No	
		N2O	No	

	Source	Gas	Included?	Justification / Explanation
Project Scenario	Cooking	CO2	Yes (for all VPAs)	Important source of emission. IPCC values have to be applied.
		CH4	Defined on VPA Level	Defined in VPA depending the used fuel and stove type.
		N2O	Defined on VPA Level	Defined in VPA depending the used fuel and stove type.
	Transport of fuel	CO2	No	Excluded as in the Baseline. Conservative approach, because less fuel is used in the project scenario.
		CH4	No	
		N2O	No	
	Production of fuel	CO2	No	Excluded as in the Baseline. Conservative approach, because less fuel is used in the project scenario.
		CH4	No	
		N2O	No	

	Transport of raw material	CO2	Yes	See also Leakage L6. CO2 emissions for the transport of raw material to build the stoves have to be considered.
		CH4	Yes	
		N2O	Yes	

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

The baseline scenario is the current practice in terms of cooking habits and profile of the families. Throughout the whole Peru, and important part of the population, often the poorest do not have access to other cleaner stoves, gas stove or improved stove for example(See A.4.3) that would both, better their health and allow them to reduce the amount of wood used in the cooking process. As a proof of it, they keep using a traditional unimproved stove.

Therefore the expected baseline scenario is the current practice of the considered families: use of non renewable biomass in a cooking device that is almost an open fire. This device is:

- not insulating heat,
- not making possible a good-quality combustion,
- not including a chimney that creates an air flow that improves the combustion,
- therefore not driving the smokes out of the house, due to the lack of chimney.

The process to define the baseline emissions is based on the one specified in the Gold Standard “Methodology for Improved Cook-stoves and Kitchen Regimes – V.01”.

The step approach here presented is understood as methodological and indicative. As the very developers of the methodology (Climate Care, first use in the ‘Efficient Cooking with Ugastoves’, GS 447, Final PDD) explain and apply, sequence might be inversed or changed whenever it can be demonstrated that results are conservative and general objectives of the methodology is maintained, that is: determine homogeneous groups or treat heterogeneous groups with basis on less emission reduction behaviours and calculate corresponding emission reductions of a representative sample so as to be able to extrapolate conservatively results to all beneficiaries population.

Here is a summary of the approach suggested in the methodology and considered as the reference for this PoA:

1. Determine customer groups or “clusters” (Qualitative Kitchen Surveys)
   1.1. A sales record (list of all beneficiaries) must be established in all cases. Use this sales record, when finished, in order to identify the general population of the project and do the provisional assessment. In some cases at the moment of realizing the kitchen surveys KS, the final database is not available. In such cases the representativeness may be done with basis on the most accurate data.
   1.2. With basis on the knowledge of the reality of the population and, whenever necessary, surveys, determine if its general energetic profile, in particular fuel mix,

stove use and fuel handling behaviour allows separating different groups (clusters).

1.3. Analyze renewability fraction of wood fuels (See. Annex 2)

1.4. Divide the population in homogeneous groups (clusters) with basis on your previous analysis.

1.5. Carry out qualitative surveys:

1.5.1. Define the sample size n-KS of qualitative surveys (Kitchen Surveys, KS) in each major group considering minimum sample sizes according to the methodology trying to ad a 10% to 20% security margin or use n-KS=100 as a reference.

Cluster size <300: Minimum sample size n-KS = 30
Cluster size 300 to 1000: Minimum sample size n-KS = 10% of cluster size
Cluster size > 1000: Minimum sample size n-KS = 100

1.5.2. Use the following sampling methodology:

1.5.2.1. Define the target number of surveys respecting the following principle: % stoves in the province with respect to overall stove number = % survey to be done in the province. Try to represent all provinces in your sample.

1.5.2.2. For each province, define one or various communities taking into consideration logistical aspects.

1.5.2.3. In each community, apply random sampling on the field for the previously defined target sample size.

1.5.3. Carry out the surveys.

1.6. Analyse Kitchen Surveys statistically, if necessary, refine the division of homogeneous groups with basis on the analysis of these qualitative surveys.

2. <u>Calculate baseline emissions (quantitative Kitchen Tests):</u>

2.1. Define the sample size n-KT of the quantitative tests so as to have a 90% confidence level or use n-KT=100 as a reference. The larger the sample-size the better, leading to narrower bounds of the 90% confidence range. Make a trade-off for each VPA cluster between precision and testing effort.

2.2. Define the unit of fuel consumption: can be kilograms per year, kilograms per stove etc., in accordance with the specificity of the project.

2.3. Carry out quantitative surveys:

2.3.1. Define if paired or unpaired sampling will be applied for each VPA cluster, preferring always paired samples whenever possible.

2.3.2. Use the following sampling methodology:

2.3.2.1. Define the target number of surveys respecting the following principle: % stoves in the province with respect to overall stove number = % surveys to be done in the province. Try to represent all province in your sample.

2.3.2.2. For each province, define one or various communities where to do the surveys taking into consideration logistical aspects.

2.3.2.3. In each community, apply random sampling on the field for the previously defined target sample size.

2.3.3. Carry out the surveys.

2.4. Analyse Kitchen Tests statistically with the test adequate to paired or unpaired samples, defining the 90% confidence interval for emission reduction. The lower

limit of this interval is the appropriate value for fuel reduction (conservative approach).

Then, calculate emissions applying the results of quantitative test to the equation corresponding to the approach adequate to the project.

More precisions on the application and eventual adaptation to context of this methodology will be provided at VPA level.

In the case of a new activity to be integrated in a new VPA that has the same stove and diffusion model and is implemented in the very same region as an activity already presented in a previous VPA, it is allowed to use this previous activity's baseline and emission reduction for estimating the emission reduction of the new activity for a new VPA.
If the new activity does not have the same model, the use of results of laboratory tests is allowed to derive the emissions reductions for this activity.
If the new activity is not implemented in the same region, it is allowed to use the previous activity's emission reduction (as a portion of baseline) but local baseline should be assessed qualitatively so as to make adjustments whenever it is necessary.
In any case, the monitoring of the new activity proposed must involve new KTs on baseline and project stoves before the start of verification.
I

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the VPA being included as registered PoA (assessment and demonstration of additionality of VPA):

E.5.1. Assessment and demonstration of additionality for a typical VPA:

The demonstration of additionality of a typical VPA will be done with basis on compliance of each LPP taking part to this VPA with eligibility criteria's defined in accordance with the demonstration of additionality at PoA level that is in section A.4.3 and for early carbon funding consideration, a timeline will be provided at VPA level.

E.5.2. Key criteria and data for assessing additionality of a VPA:

Key criteria for assessing additionality are directly derived from the "typical VPA" additionality assessment provided in section E.5.:

There is evidence carbon funding was considered in decision before project activities implementation.
Alternative 2 (cooking with gas) and Alternative 3 (project activity without carbon funding) should not be credible:
Beneficiaries cook with an unimproved stove.
Stoves are distributed for free or at subsidized costs.
District of implementation should pertain to the two last quintile of population or evidence should be provided that cookstoves are distributed to the poorest in selected district (evidence should be provided with basis on official data)
Difference with common practice is demonstrated

The use of carbon funding for project activities should be demonstrated.
The volume of diffusion should be higher than 500 stoves.
Project activity includes multi thematic capacity building.

The eligible VPAs activities - that is each LPPs activities - must fulfil these criteria.

E.6. Estimation of Emission reductions of a VPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical VPA:

A typical VPA will follow the requirements of the Gold Standard "Methodology for Improved Cook-stove and Kitchen Regimes – V.01". The methodological choices are therefore directly derived from the requirements of this methodology. The proposed information breakdown that follows is identical to the one of the considered methodology.

1] Project Boundary:

- ⇨ The Project Boundary (place where the project activities are implemented; e.g. specific towns in a specific region of Peru) will be defined for each VPA.
- ⇨ The Target Area (the outer border of the project; e.g. Peru, or the whole region where is implemented the project activities) will be defined for each VPA.
- ⇨ The Fuel Collection Area ("the area within which this biomass is produced and supplied, or could reasonably be expected to be produced and supplied, whichever is the greater") will be defined for each VPA.
- ⇨ The green-house gases occurring during production, use and transport of combustible will be defined for each VPA.

2] Choice of the most plausible scenario:

Energetic profiles of the families participating in the project activities are very stable for two reasons:

- o They usually meet their needs in terms of energy for cooking.
- o A clear upgrade for them would be to use gas, because of its easier and faster utilization. Another reason is that using gas is socially considered as a proof of financial wealth. Unfortunately, as showed in section A.4.3 step 2, the people considered in the project activities are very unlikely to be able to upgrade their energetic behaviour on the medium term.

As conditions are very stable in energetic profiles of the considered families**, it is very likely that a fixed baseline should be preferred** to an *evolving baseline*. Yet each VPA will assess the pertinence of this choice for the considered Project Boundary.

As monitoring activities of all VPAs do include an evaluation of the evolution of energetic needs of the considered families, monitoring data will eventually show that the basic needs have evolved. If so, the baseline should be re-evaluated in order to reflect the changes.

3] Additionality

As required in the Gold Standard "Methodology for Improved Cook-stoves and Kitchen Regimes – V.01", and as described in section A.4.3 of this PoA, the UNFCCC "Tool for the Demonstration and Assessment of Additionality" is applied.

Details of the additionality assessment for a typical VPA are presented in section E.5.1. Details of criteria that a VPA should respect in order to be additional are presented in section E.5.2.

4] Baseline emissions

The PoA describes in section E.6.2 the calculation mode of the baseline emission. Each VPA-PDD will provide specific figures about baseline emissions.

The process to define the baseline emissions is the one specified in the Gold Standard "Methodology for Improved Cook-stoves and Kitchen Regimes – V.01" as described in section E.4.

5] Project emissions

Project emissions will be calculated on basis of result of Project Scenario Kitchen Test (PSKT). These PSKT are implemented in the same way as the BLKT one (described in section E.4 – step 2). An additional recommendation is considered for the PSKT:

⇨ *The PSKT second step of measurements should preferably always take place at least one to two weeks after the construction, in order to let the customer get used to his new technology. This time is also consistent with the necessary time of drying for clay, a material very much used in the project activities of this PoA.*

The equation used for the two purposes is presented in section E.6.2.

For each VPA, the VPA-DD will provide data for calculation of emission reduction. Conservative hypothesis will be preferred.

6] Leakage

As specified in the Gold Standard "Methodology for Improved Cook-stoves and Kitchen Regimes – V.01", six types of leakage have to be considered. This is done as mentioned below:

⇨ L1: Increasing consumption of GHG emitting fuels by the project population, consecutively to the project activities (rebound effect).

- This potential leakage source is intrinsically included in KTs as KTs consider general house fuel consumption. Whenever a necessity would occur because of project activity its corresponding fuel use will then be included into KTs. Thus, no specific monitoring of the leakage is done and this leakage can be considered as:
  - L1=0

⇨ L2: Increasing use of GHG emitting fuels outside the project boundary

- An increased use of GHG emitting fuels outside of project boundary due to project activity could be thought to as a result of a decrease in prices provoked by a decrease in demand due to fuel savings stoves. Nevertheless, this is very unlikely in the Peruvian context as stove fuel savings are very likely to be un-significant in the wood market[15]".
  - L2=0

⇨ L3: Purchase of the improved stove by population whose baseline is less GHG emitting than the emissions linked to the use of the improved stove.

- In the Peruvian context cleaner stoves than the improved stove would be LGP stoves that have been demonstrated to represent high costs and refer then to a certain sector of population. Unless gas prices would increase very significantly (should be more than the simple opportunity cost as switching back form gas to wood can be considered as very uncomfortable). Whenever this would occur, it should be considered as an evolving baseline and not leakage. Therefore:
  - L3=0

⇨ L4: Adoption of a new device specifically dedicated to heating, or adoption of a new practice specifically dedicated to heating, consequently to the project activities (ex: due to lack of heating ability of the disseminated stoves).

- When doing KTs, the use of a cooking device for eating is assessed and, if it is demonstrated it is due to project, the corresponding fuel use is included in the KTs so that this leakage is intrinsically included into KTs and, as well as L1 can be considered as:
  - L4=0

⇨ L5: Reuse of the old stoves inside or outside the boundary, and more important use of these unimproved stoves than in the baseline situation:

- The traditional unimproved stoves cannot usually be moved from a house to another and have to be rebuilt. So that reuse is very unlikely and considered null outside the project boundary. As far as the inside project boundary is

[15] Indeed, official data show fuel wood is three times industrial wood (http://faostat.fao.org/site/626/DesktopDefault.aspx?PageID=626#ancor, Wood fuel vs. Industrial wood, 2006 latest data available) but knowing that wood savings count for 30%, that fuel here counted includes industrial fuel wood and that industrial wood is largely sub-estimated as illegal logging is known to be at least 80% illegal (http://www.wwf.de/fileadmin/fm-wwf/pdf-alt/waelder/Scale_of_illegal_logging_around_the_world.pdf), then weigth of savings in the overall wood market, one can easily consider that savings are very unlikely to have a significant impact on wood price inducing a significant leakage that is, as a consequence, very unlikely to account for more than 1% of ERs

concerned, even if old stove destruction is strongly recommended, beneficiaries can keep using their old stove. Thus, no leakage has to be considered here as KTs do take this into account: wood consumption in project scenario corresponds to general consumption including eventual remaining stoves or other stove use[16].

- The LPP is asked for the old stove to be replaced but cannot make it compulsory. The carbon mechanism is per se an incentive as, because the kitchen test are made with all wood consumption of the house, whenever the old stove is still used, wood consumption will be higher and then emission reduction lower. So whenever old stove is still in use, carbon incomes will be lower but when it is no more in use, carbon incomes will be higher. Whenever data show that less than 80% of the old stoves have been removed from inside the kitchen after two years of project, the LPP will be asked for to implement a direct incentive scheme so as to ensure removal of old stoves up to 80% by the fourth year. After this date restrictive actions shall be taken against corresponding LPP including reduction of ERs.
  - L5=0

⇨ L6: Significant emissions linked to stove transport or fuel transport:

- Calculations have been made with basis on the first VPA and it has been demonstrated that emission reduction are inferior to 1% of total emission reduction so that it can be considered as not significant. In this respect, it has been agreed with GS to considerer that
  - L6=0

7] Emission reductions

The emission reductions through this project are the baseline emissions minus the project emissions minus leakage. As explained in points 4] and 5] of this same section, project emissions calculation is simultaneous with baseline emissions calculations. The equation provided in the Gold Standard "Methodology for Improved Cookstoves and Kitchen Regimes – V.01" for calculating emission reductions is therefore modified as explained in section E.6.2.

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a VPA:

The equations presented in this section are all derived from requisites of the Gold Standard "Methodology for Improved Cookstoves and Kitchen Regimes – V.01".

➔ Baseline:

[16] Also, corresponding health impact of subsistence of traditional cookstove shall be taken into account in the monitoring.

Approaches 1 or 3 described in the Gold Standard Methodology can be used. Both approaches correspond to the same equations as follows.

Three equations describe the baseline:

$$\begin{cases} \boldsymbol{BE_y} = X_{NRB,bl,y} * B_{bl,y} * EF_{bl,bio,CO2} + \sum(AF_{bl,i,y} * EF_{af,CO2,i}) \\ \quad + \sum(Non-CO2\ emissions\ during\ cooking) \\ \quad + \sum(GHG\ emissions\ during\ production\ of\ the\ fuels) \\ \\ \boldsymbol{Non-CO2\ emissions\ during\ cooking} = \sum(B_{bl,y} * EF_{bl.bio,non-co2,i}) \\ \quad + \sum(AF_{bl,i,y} * EF_{af.i,non-co2\,gas\,i}) \\ \boldsymbol{GHG\ emissions\ during\ production\ of\ the\ fuels} = X_{NRB} * B_{bl,y} * EF_{bio,prod.CO2} \\ \quad + \sum(AF_{bl,i,y} * EF_{af,prod.CO2,i}) + \sum(B_{bl,y} * EF_{bio,prod.non-co2\,gas\,i}) \\ \quad + \sum(AF_{bl,i,y} * EF_{af,i,prod.non-co2\,gas\,i}) \end{cases}$$

Where:

- BE_y is the baseline emissions in year y (in tonnes CO2e per year) specific to each representative unit (stove).
- $X_{nrb,bl,y}$ is the fraction of consumed biomass in the baseline scenario that can be considered as non-renewable
- $B_{bl,y}$ is the mass of woody biomass consumed during cooking in the baseline in year y (tons/year) per cluster
- $EF_{bl.bio,CO2}$ is the CO2 emission factor for use of the biomass fuel in the baseline scenario in tons CO2 per ton fuel
- $AF_{bl,i,y}$ is the mass of alternative fuel i in the baseline in year y, in tons
- $EF_{af,CO2,i}$ is the CO2 emission factor for use of the alternative fuel i in the baseline in tons of CO2 per ton fuel
- $EF_{bl.bio,non-co2,i}$ is the emission factor for GHG gas i in the baseline scenario in units of tones gas per ton wood-fuel

- $EF_{af,i,non-co2\,gas\,i}$ is the non-CO2 emission factor during cooking for alternative fuel i for GHG gas i in tons gas per ton fuel

- $EF_{bio,prod,co2}$ is the CO2 Emission factor for wood-fuel during production in tons gas per ton fuel

- $EF_{af,prod,co2,i}$ is the CO2 Emission factor for fuel i during production in tons gas per tons fuel

- $EF_{bio,prod,non-co2\,gas\,i}$ is the non-CO2 Emission factor for wood-fuel during production in tons gas per ton fuel

- $EF_{af,i,prod,non-CO2\,gas\,i}$ is the non-CO2 Emission factor alternative fuel i for GHG gas i during production in tons gas per ton fuel

GHG emission during production of the fuel isn't considered in this PoA. This is a conservative assumption because the same production processes or cleaner processes are used in the baseline and the project scenario. The project leads to less production efforts, therefore:

GHG emissions during production of the fuels = 0

The simplified formula can then be used:

$$\boldsymbol{BE_y} = X_{NRB,bl,y} * B_{bl,y} * EF_{bl,bio,CO2} + \sum(AF_{bl,i,y} * EF_{af,CO2,i}) + \sum(B_{bl,y} * EF_{bl.bio,non-co2,i}) + \sum(AF_{bl,i,y} * EF_{af.i,non-co2\,gas\,i})$$

➔ **Project emissions**:

Approaches 1 or 3 described in the Gold Standard Methodology can be used. Both approaches correspond to the same equations as follows.

$$\begin{cases} \boldsymbol{PE_y} = X_{NRB,pj,y} * B_{pj,y} * EF_{pj,bio,CO2} + \sum(AF_{pj,i,y} * EF_{af,CO2,i}) \\ \quad + \sum(Non-CO2\ emissions\ during\ cooking) \\ \quad + \sum(GHG\ emissions\ during\ production\ of\ the\ fuels) \\ \\ \boldsymbol{Non-CO2\ emissions\ during\ cooking} = \sum(B_{pj,y} * EF_{pj.bio,non-co2,i}) \\ \quad + \sum(AF_{pj,i,y} * EF_{af.i,non-co2\,gas\,i}) \\ \boldsymbol{GHG\ emissions\ during\ production\ of\ the\ fuels} = X_{NRB} * B_{pj,y} * EF_{bio,prod.CO2} \\ \quad + \sum(AF_{pj,i,y} * EF_{af,prod.CO2,i}) + \sum(B_{pj,y} * EF_{bio,prod.non-co2\,gas\,i}) \\ \quad + \sum(AF_{pj,i,y} * EF_{af,i,prod.non-co2\,gas\,i}) \end{cases}$$

Where:

- PE_y is the project emissions in year y (in tons CO2e per year) specific to cluster

- $X_{nrb,pj,y}$ is the fraction of consumed biomass in the project scenario that can be considered as non-renewable

- $B_{pj,y}$ is the mass of woody biomass consumed during cooking in the project scenario in year y (tons/year)

- $EF_{pj.bio,CO2}$ is the CO2 emission factor for use of the biomass fuel in the project scenario in tones CO2 per ton fuel

- $AF_{pj,i,y}$ is the mass of alternative fuel i in the project scenario in year y, in tons

- $EF_{af,CO2,i}$ is the CO2 emission factor for use of the alternative fuel i in the project scenario in tons of CO2 per ton fuel

- $EF_{pj.bio,non-co2,i}$ is the emission factor for GHG gas i in the project scenario in units of tones gas per ton wood-fuel

- $EF_{pj,i,non-co2\,gas\,i}$ is the non-CO2 emission factor during cooking for alternative fuel i for GHG gas i in tons gas per ton fuel, in the project scenario

As for the Baseline, the simplified formula can be used for Project Emissions:

$$\boldsymbol{PE_y} = X_{NRB,pj,y} * B_{pj,y} * EF_{pj,bio,CO2} + \sum(AF_{pj,i,y} * EF_{af,CO2,i}) + \sum(B_{pj,y} * EF_{pj,bio,non-co2,i}) + \sum(AF_{pj,i,y} * EF_{af,i,non-co2\,gas\,i})$$

➔ **Leakage**:

See also E.6.1.F.

$$LE_{i,y} = L1_{i,y} + L2_{i,y} + L3_{i,y} + L4_{i,y} + L5_{i,y} + L6_{i,y}$$

L1 i,y=0
L2 i,y=0
L3 i,y=0
L4 i,y=0
L5 i,y=0
L6 i,y=0

➔ **Emission reductions:**

Within each cluster the emissions are calculated as follows:

$$BE_{i,y} = N_{i,y} * BE_y$$
$$PE_{i,y} = N_{i,y} * PE_y$$

Where BE_y and PE_y are calculated as set out in equations above, and $N_{i,y}$ is the number of Units (stoves) in cluster i.

The overall reductions of GHG induced by the project are calculated as follows:

$$ER_y = \sum BE_{i,y} - \sum PE_{i,y} - \sum LE_{i,y}$$

Where:

- ER_y is the emission reduction in total program population in year y (tCO2e/yr)
- $BE_{i,y}$ is the baseline emissions of cluster i in year y (tCO2e/yr)
- $PE_{i,y}$ is the project emissions of cluster i in year y (tCO2e/yr)
- $LE_{i,y}$ is the leakage of cluster i in year y (tCO2e/yr)

E.6.3. Fixed data and parameters that are to be reported in VPA-DD form:

Following parameters will be fixed for the entire duration of the project activities, unless clear evidence (gathered through Continuously Monitoring Kitchen Surveys) shows the opposite.

Data / Parameter:	EFbl.bio,co2
Data unit:	tCO2/t_biomass
Description:	CO2 emission factor arising from use of wood-fuel in baseline scenario
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/1.4
Value applied:	1,7472 tCO2/t wood (=112.0 tCO2/TJ * 0.0156 TJ/ t)
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:	EFpj.bio,co2
Data unit:	tCO2/t_biomass
Description:	CO2 emission factor arising from use of wood-fuel in project scenario
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/1.4
Value applied:	1,7472 tCO2/t wood (=112.0 tCO2/TJ * 0.0156 TJ/ t)
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:	**EFaf,CO2**
Data unit:	t CO2 / t_fuel
Description:	Co2 emission factor arising from use of alternative fuel like char coal or LPG
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/1.4/2.5
Value applied:	Charcoal: **3.304 tCO2/t charcoal**(=112.0 tCO2/TJ * 0.0295 TJ/ t) LPG: **2.98463 tCO2/t LPG**(=63.1 tCO2/TJ * 0.0473 TJ/ t)
Justification of the choice of data or description of measurement methods and procedures actually applied :	If the VPA takes into consideration alternative fuels, IPCC default values as above have to be used.

Data / Parameter:	**EFbl.bio,non-co2**
Data unit:	Data unit: tCO2/t_wood
Description:	Non-CO2 emission factor arising from use of wood-fuel in baseline scenario

Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol.2 Energy, Chapter 2, Stationary Combustion, Table 2.5
Value applied:	**0.11762 tCO2eq/t wood** = (0.09828tCO2eq/t wood (CH4 emission) + 0.01934tCO2eq/t wood (N2O emission))
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 NCV wood = 0.0156TJ/t_wood EF_wood_CH4= 0.3tCH4/TJ EF_wood_N2O = 0.004tN2O/TJ

Data / Parameter:	**EFpj.bio,non-co2**
Data unit:	Data unit: tCO2/t_wood
Description:	Non-CO2 emission factor arising from use of wood-fuel in baseline scenario
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol.2 Energy, Chapter 2, Stationary Combustion, Table 2.5
Value applied:	**0.11762 tCO2eq/t wood** = (0.09828tCO2eq/t wood (CH4 emission) + 0.01934tCO2eq/t wood (N2O emission))
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 NCV wood = 0.0156TJ/t_wood EF_wood_CH4= 0.3tCH4/TJ EF_wood_N2O = 0.004tN2O/TJ

Data / Parameter:	**EFaf,non-CO2**
Data unit:	t CO2eq / t_fuel
Description:	Non-co2 emission factor from use of alternative fuel
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol.2 Energy, Chapter 2, Stationary Combustion, Table 2.5
Value applied:	**Charcoal: 0.133 tCO2eq/t charcoal** = 0.124tCO2eq/t_charcoal (CH4 emission) + 0.009tCO2eq/t_charcoal (N2O emission) **LPG: 0.006 tCO2eq/t LPG** = 0.005tCO2eq/t_charcoal (CH4 emission) + 0.001tCO2eq/t_charcoal (N2O emission)
Justification of the choice of data or description of measurement methods and procedures actually applied :	If the VPA considers alternative fuels, default IPCC values for CH4 and N20 emissions for charcoal and LPG are applied The following GWP100 are applied: 21 for CH4, 310 for N20 NCV charcoal = 0.0295TJ/t_charcoal EF_charcoal_CH4= 0.2tCH4/TJ EF_charcoal_N2O = 0.001tN2O/TJ NCV LPG = 0.0473TJ/t_LPG EF_LPG_CH4= 0.005tCH4/TJ EF_LPG_N2O = 0.0001tN2O/TJ

E.7. Application of the monitoring methodology and description of the monitoring plan:

E.7.1. Data and parameters to be monitored by each VPA:

Hereunder the list of parameters being monitored throughout the lifetime of the VPA:

➔ **Parameters being reported in the VPA-DD and in the Monitoring Report**

Data / Parameter:	$X_{NRB,bl,y}$
Data unit:	Fraction
Description:	Non-renewability status of woody biomass fuel in year y in baseline scenario
Source of data to be used:	See Annex 2
Description of measurement methods and procedures to be applied:	See the details of measurements processes in Annex 2
Monitoring frequency	A biennial monitoring will only be performed, independently from the results of KS.
QA/QC procedures to be applied:	See the details of QA/QC procedures to be applied in Annex 2

Data / Parameter:	$B_{bl,y}$
Data unit:	t_biomass/unit-year
Description:	Mass of woody biomass combusted per stove in the baseline in year y
Source of data to be used:	Measurements of sample of cluster population (KT).
Monitoring frequency	The evolving baseline approach is established by default. Thus, a fixed baseline can de chosen at VPA level. In this case a biennial monitoring will be performed.
Description of measurement methods and procedures to be applied:	The procedure should respect appropriate methodology (mentioned above) sp each VPA should implement the following procedures: 1°) The mass of the considered non renewable biomass can be measured with one of the two following option: - Option 1: on a weekly basis, in order to reflect precisely the intra-week variations of cooking habits. - Option 2: on a 3-day basis, excluded Sunday when specific occasion may increase the consumption. The proportional extrapolation of results to the whole year will therefore be conservative as it will not consider Sunday's higher consumptions. 2°) The measurement should be made directly with the considered customers, the balance used for the weighting must have a precision of no less than 50g, 3°) Information shall be presented in a monitoring report
QA/QC procedures to be applied:	1°) Monitored beneficiaries will be clearly identified for allowing further verifications. 2°) Sound capacity building will me made with surveys responsible including ethic dimensions of the process and adequate techniques for ensuring confidence of results.

	3°) Any survey suspected to be biased or of low quality will be systematically removed. 4°) MICROSOL will realize quality control test in digitations of the surveys. 5°) A conservative approach and expert statistics guidelines will systematically followed.

Data / Parameter:	$AF_{bl,i,y}$
Data unit:	t_fuel/unit-year
Description:	Mass of alternative fuel i combusted in the baseline in year y
Source of data to be used:	Measurements of sample of cluster population
Monitoring frequency	Biennial
Description of measurement methods and procedures to be applied:	See Description of measurement methods for the $B_{bl,y}$ parameter.
QA/QC procedures to be applied:	See Description of QA/QC procedures for the $B_{bl,y}$ parameter.

Data / Parameter:	$X_{NRB,pj,y}$
Data unit:	Fraction
Description:	Non-renewability status of woody biomass fuel in year y in project scenario
Source of data to be used:	Study See Annex 2
Monitoring frequency	Biennially
Description of measurement methods and procedures to be applied:	See the details of measurements processes in Annex 2
QA/QC procedures to be applied:	See the details of QA/QC procedures to be applied in Annex 2

Data / Parameter:	$B_{pj,y}$
Data unit:	t_biomass/unit-year
Description:	Mass of woody biomass combusted in the project in year y
Source of data to be used:	Measurements of sample of cluster population
Monitoring frequency	Before validation B_{pj} will be defined for each cluster and biennially redefined in the 'Aging-Stove KT'.
Description of measurement methods and procedures to be applied:	See Description of measurement methods for the $B_{bl,y}$ parameter.

QA/QC procedures to be applied:	See Description of QA/QC procedures for the $B_{bl,y}$ parameter.

Data / Parameter:	$AF_{pj,i,y}$
Data unit:	t_fuel/unit-year
Description:	Mass of alternative fuel i combusted in the project in year y
Source of data to be used:	Measurements of sample of cluster population
Monitoring frequency	If alternative fuel is considered in the baseline study before validation: See Description of monitoring frequency for the $B_{pj,y}$ parameter.
Description of measurement methods and procedures to be applied:	See Description of measurement methods for the $B_{bl,y}$ parameter.
QA/QC procedures to be applied:	See Description of QA/QC procedures for the $B_{bl,y}$ parameter.

Data / Parameter:	I
Data unit:	Stoves installed
Description:	Represents the number of stoves installed by each LPP fo which effective installation and date of installation can be evidenced. Date of installation shall be used for calculating each stove crediting period.
Source of data to be used:	Documents provided by LPPs at VPA level.
Monitoring frequency	Continuous.
Description of measurement methods and procedures to be applied:	Signed documents by community representative preferably with list of final beneficiaries. Whenever possible documents signed by each beneficiary should be preferred.
QA/QC procedures to be applied:	Data are collected by LPP and then verified, when possible and cost effective, with other means by MICROSOL.

Data / Parameter:	$U_{i,y}$
Data unit:	Fraction (%)
Description:	Represents the drop-off rate in stove usage by each cluster each year.
Source of data to be used:	Data included in kitchen surveys.
Monitoring frequency	Biennial
Description of measurement methods and procedures to be applied:	Surveys with beneficiaries
QA/QC procedures to be applied:	1°) Monitored beneficiaries will be clearly identified for allowing further verifications. 2°) Sound capacity building will be made with surveys responsible including ethic

	dimensions of the process and adequate techniques for ensuring confidence of results. 3°) Any survey suspected to be biased or of low quality will be systematically removed. 4°) MICROSOL will realize quality control test in digitations of the surveys. 5°) A conservative approach and expert statistics guidelines will systematically be followed.

Data / Parameter:	$O_{i,y}$
Data unit:	Fraction (%)
Description:	Represents the removal rate of old stove by each cluster each year.
Source of data to be used:	Data included in kitchen surveys.
Monitoring frequency	Biennial
Description of measurement methods and procedures to be applied:	Surveys with beneficiaries
QA/QC procedures to be applied:	1°) Monitored beneficiaries will be clearly identified for allowing further verifications. 2°) Sound capacity building will be made with surveys responsible including ethic dimensions of the process and adequate techniques for ensuring confidence of results. 3°) Any survey suspected to be biased or of low quality will be systematically removed. 4°) MICROSOL will realize quality control test in digitations of the surveys. 5°) A conservative approach and expert statistics guidelines will systematically be followed.

SD Matrix indicators scoring and parameters being defined at VPA level, corresponding monitoring process cannot be described here.

➔ **Parameters being reported only in the Monitoring Report**

Data / Parameter:	DNH parameter – Corruption
Data unit:	% of carbon incomes subject to corruption or suspicion of corruption
Description:	As corruption influence of the project has been defined Carbon revenues
Source of data to be used:	Carbon revenues use report by LPPs, one year after receiving carbon revenues
Monitoring frequency	Biennial
Description of measurement methods and procedures to be applied:	LPPs provide a detailed report on how they use carbon revenues with references to evidences available for consultation.
QA/QC procedures to be applied:	MICROSOL revises LPPs reports and correspondance with evidences as well as the validity of those.

E.7.2. Description of the monitoring plan for a VPA:

The monitoring plan applicable for a VPA is based on the "Methodology for Improved Cookstoves and Kitchen Regimes – V.01".

First of all, a final list (sales record) of the families having received an improved stove is compiled by each LPPs and centralized by MICROSOL. LPPs are due to frequently update this list and communicate changes to MICROSOL. This list will help in identifying stove owners for applying monitoring surveys and will serve as a basis for total population emission reductions calculation.

Every two year at least, a general update of cluster differentiation and corresponding total emission reductions will be carried out with basically the same methodology as that used for initial emission reductions measurement combining qualitative and quantitative surveys described in E.4. A monitoring report will then be produced.

During the two year period, the cluster evolution will anyway be continuously monitored every three month thanks to adapted qualitative surveys (Kitchen Surveys - KS). The same sampling method as described in E.4 1.6 will be applied for each VPA cluster, however the reference sample size is smaller that is n-KS = 25.
At that point, whenever any major change would be identified, the general update will have to be anticipated in relation with the normal two year period and quantitative surveys (Kitchen Test) will be held so as to determine, as soon as identified, the influence of this new cluster differentiation on total emission reductions.

Finally, other aspects such as leakage, SD matrix, NRB and eventual DNH mitigation parameters analysis will be monitored in the bi-annual general update so as to take into account the influence of its eventual evolution on total emission reductions. Corresponding assessment will be presented in the monitoring report produced in this occasion.

Quality control and analysis will happen both by MICROSOL in Lima as well as by myclimate threw its revision in Europe. All data generated will be centralized by MICROSOL in general comprehensive databases so as to be easily accessible and for analysis to be more accurate. MICROSOL's leadership of the process, its permanent control of data and its capacity building to LPP act as a guarantee for data quality. Nevertheless, whenever possible, independent analysis could be considered so as to reinforce confidence in data.
All data will be kept electronically for a period of 2 years after the end of the crediting period.

So, for monitoring reports

- LPPs perform KS and KT according to Monitoring Plan under supervision of MICROSOL
- MICROSOL compiles a report for each cluster at least bi-annually.
- Myclimate revises all reports.
- MICROSOL or Myclimate submits the report to the DOE for verification.

Responsible Person: Monitoring manager MICROSOL (data) and myclimate (review of report)

E.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

01.10.2009 (DD/MM/YYYY)

The responsible entity for completing this work is MICROSOL.

Annex 1:
Add KT and KS in English

In this example of KT and KS to be used, the KS corresponds to a format that collects at the same time baseline and project scenario information in a paired sampling mode. The KT format is the same to be used for baseline and for project scenario.

Qori Q'oncha – Typical Initial Kitchen Survey for Baseline and Project Scenario

N°		Inst./ Project		Pollster		D/H	___/___/___ __h__	Season	Dry / Wet

Department		Province		District		Community		Setting	U/R

¿Have you received an improved cookstove?	Y/N	Name		Address		Phone Number	

Do you use your improved cookstove?	Y/N	¿What about your old stove?	Destroyed/ daily use/ *specific use:* _____/ somebody else use it
Has your cook stove got a chimney?	Y/N	If somebody else uses it, ¿what kind of stove this person use to have?	Not / improved cookstove / traditional stove

Other than the main stove, ¿Do you use any other stove?	WITH IC (other stove than the IC)	No/ *type:* _____	Does it have a commercial or institutional daily use during any season?	WITH IC	Y/ N
	BEFORE IC (other additional stove)	No/ *type:* _____		BEFORE IC	Y/ N

SEASON		ACTUAL	OTHER
Do you use heating? If yes, with which device?	WITH	No/IC/traditional/ *other:*_____	No/IC/traditional/ *other:*_____
	BEFORE	No/IC/traditional/ *other:*_____	No/IC/traditional/ *other:*_____

Do you sterilize your drinking water?	WITH	No/ with IC/ with traditional stove/ with another device: _____
	BEFORE	No/ with IC/ with traditional stove/ with another device: _____

FUEL	IC	Actual Season		IC	Other Season		BEFORE IC	Actual Season	
	Type		Kg/week	Type		Kg/week	Type		Kg/week
1er									
2º									
3er									
Ignite									

1st wood species		What is the price of gas at home transport included?		S/.
2nd wood species		If you collect firewood, How long does it take in total to collect? (round trip)		Min
3rd wood species		How many times a week do you collect firewood? (average)		

SEASON		ACTUAL	IC	OTHER	IC	ACTUAL	BEFORE*
How many meals do you daily cook at home?							
How many people eat daily at your home?	Children <10					*BEFORE = Before having an IC	
	Adults						

¿Do you cook much more than before? ¿Why?	Not/ I want to/ I need to (needed)/ I have more needs (families, etc.)
Is Smoke good or bad? (for your health)	Good/bad/the same
Did you or any of your family participate on the improved cookstove construction?	Y/N
Would somebody of your family or community be able to construct the same improved cookstove again?	Y/N
Would you say there is less smoke with the improved cookstove than with the traditional one?	Y/N
When the IC was installed, have you or any member of your family been sick of a respiratory disease in the last three months?	Y/N
¿Are you satisfied with your improved cookstove?	Y/N
If there's any firewood saving allowed by the IC, Do you think it implies any time or money savings for your family?	Y/N

Comments - *(Record based on information sheet "Key Points qualitative part")*	

Qori Q'oncha – Kitchen Test for Baseline or Project Scenario

N°		Inst./ Project		Pollster		D/H	___/___/___ __h__	Season	Dry / Wet
Department		Province		District		Community		Setting	U/R
¿Dou you have an improved cookstove?	Y/N	Name		Address		Phone Number			

Fuel used in actual season	1er	2o	3er	Ignite
Type				
Kg *(what isn't going to be weight Ex. gas)*				

FUEL WEIGHT – Stage1 (Weight everything)		Wood samples collected	Y/N
Type/Size	**Measures Kg (Gradually writing)**		**Sum of the fuel present at the beginning**
A.	N°__ bag/rope:_____		
B.	N°__ bag/rope:_____		

C.	N°__ bag/rope:_____	

FUEL WEIGHT – Stage2 (Weight the firewood that is left)		
Type/Size	**Measures Kg**	**Sum of what is left**
A.	N°__ bag/rope:_____	
B.	N°__ bag/rope:_____	
C.	N°__ bag/blanket/rope:_____	

Number of days between the 2 stages		**Total consumption in kg (what was at the beginning less what is left)**	1st Type of fuel	
			2nd Type of fuel	
Stove used during the test	Traditional /IC		3rd Type of fuel	
			To Start fire (if ≠ other fuel)	

Comments	Record based on information sheet "Key Points quantitative part"

Annex 2

Methodology for calculation of renewability of biomass fuels

In order to assess renewability of biomass fuels, the exact requisites of the Gold Standard "Methodology for Improved Cook-Stoves and Kitchen Regimes – V.01" are applied. The following steps should be followed.

The following steps describe the framework methodology, these steps, beginning for the most accurate, are: the quantitative approach, the qualitative approach, and the field based estimation. Each one of these approaches can present options to determine the results.

1. Quantitative approach

The first mean to assess renewability of biomass is to quantify this renewable or non-renewable nature. It is necessary to:

⇨ **1.a.** Specify the geographic area from which woody biomass fuel is or could be reasonably be expected to be collected by or for the project population, and adopt whichever is the larger. This is termed the Fuel Collection Area or Reachable Collection Area (A).

A Option: Fieldwork

- Data from GPS points

  Fieldwork to delimitate the recollection area, with a Technician to operate the GPS and guided by a beneficiary of the project.
  Materials:GPS

- Data from Local Map

  In the Field with the help of a Beneficiary of the project and a local map (most recent and detailed as possible) delimitate the recollection area.
  Materials: Local Map, scaler,

B Option: Estimation based on Field Survey

It assumes a circular collection area within a radius of collection, which generates data very conservative. It assumes the value of the distance as the linear radius; the information is gathered through surveys.

- Distance

This data may be inaccurate because many people have no notion of distance in the official units (meters, miles, yards, etc.).
Data Source: Field Surveys

- Velocity and collection time

  Usually people does measure the time it takes to collect firewood unlike distance, this data added to a field test to approximate firewood collection speed , can give us the data we need: traveled distance (including return time).
  Field Surveys Content: Firewood collection time, Firewood collection speed (Calculations Above)

⇨ **1.b.** Use credible information sources, field surveys, or both, to ascertain the amount of woody biomass that is re-generating each year in this area. This is the Mean Annual Increment (MAI).

Data developed by State agencies and other research agencies that work in: forest inventory, forest biomass studies, among others. Some of the agencies to be consulted are:

- AGRORURAL - Rural agrarian productive development program
- INRENA - Natural Resources National Institute
- Local Universities, Research Centers, Thesis, etc.

⇨ **1.c.** Quantify the amount of non-renewable biomass (NRB) drawn from the fuel collection area (A) as follows:

$$NRB = H - MAI$$

Where:

NRB	is the 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;
H	is the annual harvest of woody biomass, including forest clearance, timber extraction, consumption of wood-fuels, drawn from fuel collection area A;
MAI	is the sum of mean annual increments of the wood species, or “re=growth” in area A.

⇨ **1.d.** Ascertain the fraction of extracted woody biomass that is non-renewable, denoted Xnrb. If a quantity of woody biomass supplied from fuel collection area A is used as a fuel in cookstoves, the fraction Xnrb is assumed to be non-renewable with CO2 emissions that are not reabsorbed by re-growth:

$$X_{NRB} = \left(\frac{NRB}{H}\right)$$

If for a VPA it not possible to take a quantitative approach for all areas – this must be demonstrated in the related VPA-DD – a qualitative approach may be undertaken.

2. Qualitative approach

Satellite imagery, combined with field surveys, pertinent literature reviews, and expert consultations can also provide sufficient evidence of non-renewability and lead to an acceptable conservative estimate of the NRB fraction.

Satellite imagery can be used to link population centres where there exists a demand for biomass fuel, with their associated reachable biomass harvesting areas (software doing this is under development and already in use to ascertain non-renewability in this way).

A qualitative assessment should conclude with an estimate of NRB fraction, using a combination of the above sources of information to substantiate the conclusion. Conservative hypothesis shall always be preferred.

3. Sample-based estimation

If for a specific VPA, it is impossible to assess all collection areas either with the quantitative way or with the qualitative way, it is possible to extend the results of a single collection area to the whole wood-fuel collection area, if this extension is demonstrated conservative.

The information collected during the whole process will be produced by the LPPs and then treated and centralized by MICROSOL. In some cases MICROSOL could assist the LPPs in the process.

Annex 3

Qori Q'oncha - VPA LPP Eligibility Form

This form is used to show the eligibility to implement the activity that involves the distribution of improved cookstoves to low-income households and institutions within the geographical boundary of Peru of the following LPP in the following VPA in the framework of the PoA ‚Qori Q'oncha - Improved Cookstoves Diffusion Programme in Peru' and has to be filled out by the managing entity 'MICROSOL' together with the local project participant (LPP). All points under step 1 to 4 have to be answered with yes to make the LPPs activity eligible. Step 5 is optional.

Name of VPA: _____
Name of LPP: _____

1. General Framework and Technology

The VPA is developed under the general framework described in section A.4.2 of the PoA-DD. Technology of improved cookstove must then follow these guidelines:

1.1 Has a chimney;

1.2 Favours local materials for the cookstove (isolating clay – *barro* – and traditional *adobe* in particular)

Sustainability assessment:

1.3 LPP's activity corresponds to Sustainable development assessment validated through corresponding stakeholder consultation.

2. Additionality

Must assess clearly its additionality with the complete list of criteria provided in section E.5.2.of the PoA-DD. If any of the following steps needs more clarification it will be analysed in more detail inside the VPA-DD.

2.1 There is evidence that carbon funding was considered in the decision before project activities implementation.

Alternative 2 (cooking with gas) and Alternative 3 (project activity without carbon funding) are not credible:

2.2 Beneficiaries cook with an unimproved stove.

2.3 Stoves are distributed for free or at subsidized costs.

2.4 District of implementation pertain to the two poorest quintiles of population or evidence is provided that cookstoves are distributed to the poorest in selected district (evidence should be provided with basis on official data)

Difference with common practice is demonstrated:

2.5 The use of carbon funding for project activity is demonstrated.

2.6 The volume of diffusion should be higher than 500 stoves.

2.7 Project activity includes multi thematic capacity building.

3. Sustainability and no harm assessment

No Harm Assessment:

3.1 The LPPs have signed the “Do Not Harm Declaration”

3.2 The LPPs will provide information in order to avoid corruption.

Official Development Assistance:

3.3 The LPPs have signed the “Official Development Assistance Declaration”

4. Miscellaneous

The project activity:

4.1 is a voluntary action decided and implemented by the project participants;

4.2 Is coordinated by MICROSOL in Peru.

4.3 Is not registered as an individual voluntary project activity nor is part of another registered PoA and is not a de-bundled component of a larger project and has not been already presented in any VPA of this PoA.

4.4 The LPP shall implement a monitoring as stated in the PoA-DD that is following the step-wise approach of applied methodology to calculate emission reductions.

5. Similarities to a previous registered LPPs activity

5.1 Whenever there is a similarity between the activity of this LPP and a previous activity of any VPA registered under the PoA ‘Qori Q’oncha – Improved Cookstoves Diffusion Programme in Peru’, please clarify which one:

VPA:_____

LPP:_____

Observations:_____

_____

_____

MICROSOL: Date, Name

_____

Local Project Participant: Date, Organization, Name

_____

Annex 4

Do Not Harm Declaration Form

This form is used to show that any LPP is committed to respect the underlying principles of Dot Not Harm Matrix.
It has to be signer by the representative of the LPP.

Name of LPP: _____

Signing entity declares that its project respects the following principles:

1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicity in Human Rights abuses.
2. The project does not involve and is not complicit in involuntary resettlement.
3. The project does not involve and is not complicity in the alteration, damage or removal of any critical cultural heritage.

Labour standards
4. The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights
5. The project does not involve and is not complicit in any form of forced or compulsory labor.
6. The project does not employ and is not complicit in any form of child labor.
7. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.
8. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments

Environmental protection
9. The project takes a precautionary approach in regard to environmental challenges and is not complicity in practices contrary to the precautionary principle. This principle can be defined as "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."
10. The project does not involve and is not complicity in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognized as protected by traditional local communities.

Anti-corruption
11. The project does not involve and is not complicit in corruption.

Local Project Participant representative: Date, Responsibility in Organization, Name

Annex 5

CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES

Organization:	MICROSOL S.A.R.L.
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Salutation:	Herr
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Department:	Carbon Offset Projects