ANNEX AN – THE GOLD STANDARD MICRO-PROGRAMME OF ACTIVITIES DESIGN DOCUMENT TEMPLATE

Ecological Stoves for Better Living – Micro Scale PoA

CONTENTS

Annexes

NOTE: At the time of requesting registration, this form must be accompanied by a VPA-DD applying a real case.

SECTION A. General description of micro-scale programme of activities (PoA)

A.1. Title of the micro-scale programme of activities (PoA):

Ecological Stoves for Better Living – Micro Scale PoA

Version: 2.1

Date: 04.11.2013

A.2. Description of the micro-scale programme of activities (PoA):

A.2.1 General operating and implementing framework of PoA

PROGRAM DESCRIPTION

This Programme of Activities (PoA) includes the local production, promotion, education, distribution, installation and maintenance of improved cooking devices. Our ecological fuel-efficient stove program addresses the problems of deforestation, indoor air pollution, global warming and slow economic development in Bolivia and Paraguay.

Due to the current practices, an almost negligible voluntary uptake of improved cooking devices[1] and high number of households, institutions and business using inefficient technology[2] (almost all wood cook stoves currently in use in Bolivia and Paraguay are highly inefficient) the scale of change will be significant. The project will replace traditional stoves with efficient designs, in areas where the population is most in need, e.g. communities with wood as a primary fuel.

The integrated cooking programme focuses in general on combining three main technologies with improved resource management practices:

[1] According to the Global Alliance for Clean Cookstoves' (GACC) Adoption Indicators, the % of Population using improved biomass cookstoves in Paraguay (0.509) and Bolivia (0.687) is less than 1% in each country, which demonstrates that without this intervention improved cookstoves are NOT being taken up voluntarily by either population. http://www.cleancookstoves.org/countries/america/bolivia.html http://www.cleancookstoves.org/countries/america/paraguay.html

[2] [1)] In rural areas the supply of hydrocarbons is very low. The main energy source in these scattered and remote areas is biomass (especially wood), which on average covers 80% of the total rural energy demand (there are some areas where this resource covers up to 97% of this demand, a situation that has not changed in recent years). Instead, the use of Liquefied Petroleum Gas (LPG), widespread in urban, is only present in major rural centers. In the rest of the country there simply is no availability of the fuel, said the report. http://plataformaenergetica.org/content/3308

[2)] Bolivia, with a population of approximately 10.4 million inhabitants, is considered one of the poorest countries in Latin America. While urban areas such as La Paz and Santa Cruz are modern cities with a relatively good supply of modern energy services, the majority of Bolivia's rural areas are still experiencing a lack of most basic services, including reliable and affordable access to electricity and improved biomass cooking stoves. https://energypedia.info/wiki/Bolivia_Country_Situation

- High efficient improved cook stoves that are semi portable metal rocket stove of different sizes.
- Portable solar box stoves of different sizes
- Heat retention devices and practices

Efficient Metal Rocket Stove with chimney

Portable solar box stove

All beneficiaries are non-industrial cooks from three different sectors where wood is the primary fuel:

- Domestic families
- Institutions like schools
- Commercial partners like restaurants or SME canteens

This program is designed to generate GS VERs during a 28-year Gold Standard (GS) program life cycle by installing and monitoring up to 50'000 Ecological Stoves in Bolivia and Paraguay. Without carbon finance obtained in association with Foundation *myclimate* our beneficiaries would not be able to access the program and receive the education and cooking devices.

The starting point (baseline situation) is the traditional way of cooking, i.e. using a simple three-stone fire or similar rustic device placed in a closed environment, creating excessive smoke.[3] A substantial amount of energy is lost from burning the wood in the open air.

The environment-friendly and affordable alternative to this traditional way of cooking is the use of a solar cooker (on sunny days), which can also be used as a heat retention cooking device (RHC), also known as 'haybox', Thermal cooker, Retained Heat Cooker, or Fireless Cooker[4] during non-sunny days

[3] This "business as usual" scenario affects 53% of the Paraguayans and 34% of the Bolivian population involving fully more than 6 million people in over 1,400,000 homes with Household Air Pollution (HAP) for which the GACC attributes nearly 2,000 deaths a year. http://www.cleancookstoves.org/countries/america/bolivia.html http://www.cleancookstoves.org/countries/america/paraguay.html

[4] Heat-retention cooking Heat-retention cooking saves cooking fuel because after food has been heated to cooking temperature, it is placed into an insulated box where it will continue to cook until it is done. Retained-heat cooking is often introduced along with solar cooking since it further reduces the use of traditional fuels such as firewood, and the use of this method allows much more food to be cooked each day in a solar cooker. This method of cooking is also known as retained-heat cooking, fireless cooking, haybox cooking, or wonder box cooking.
http://solarcooking.wikia.com/wiki/Heat-retention_cooking Independent Engineers have documented through Controlled Cooking Tests Protocols that our RHC techniques reduce fuel consumption after Project Scenario interventions a further 40% on average bases. Independent Test Results are included in Annexes. In the present Emissions Calculations we do not calculate reductions through RHC techniques, however at the Verification and Monitoring Stages these reductions will be included in Fuel Reduction Measurements via Control Field Test.

(resulting in no fuel wood or gas consumption) and/or the use of an efficient wood stove, also in combination with a solar box or another type of RHC that would be used during cloudy or rainy days, resulting in up to a 60% reduction of fuel wood consumption. When the three technologies are used together it is not uncommon to achieve an 85% reduction in traditional fuels.

Every VPA includes the progressive implementation of Retain Heat Cooking (RHC) techniques and Solar Cookers parallel to the implementation of the Rocket Stoves. This implementation is directly proportional to the training performed with the Modular Educational Training (MET). Every person who obtains a Rocket Stove should implement the RHC techniques and devices, but not every person would choose to acquire a Solar Cooker along with the Rocket Stove.

During the Brigades first MET training, every person should construct their own RHC bag and be educated in its use. Through the periodic monitoring provide by the Innovative Leaders we will better understand the impact of RHC use. Through the Field Test before Verification and every two years any emissions reductions accomplished by combining RHC techniques and/or the Solar Cooker use would be measured.

The PoA starts in Bolivia with a phased combination of the technologies mentioned above. During its lifetime, these technologies will be added in Paraguay. To keep the overview, every different technology applied in a specific country under this PoA shall form a separate Voluntary Programme Activity (VPA). When more than one technology is applied by a family, adaption factors will be introduced for the Emission Reduction (ER) calculation. A possible evolution of the PoA could look as follows (this list is neither closed nor definite):

Starting Year	VPA Nr.	VPA Name	Projected stove distribution
2012	VPA 1	Rocket Bolivia I	2500 domestic rocket stoves 200 institutional rocket stoves
2013	VPA 2	Solar Bolivia I	3158 domestic solar box stoves 80 institutional solar box stoves
2014	VPA 3	Rocket Bolivia II	3000 domestic rocket stoves 100 institutional rocket stoves
2014	VPA 4	Rocket Paraguay I	3000 domestic rocket stoves 100 institutional rocket stoves
2015	VPA 5	Rocket Bolivia III	3000 domestic rocket stoves 100 institutional rocket stoves
2016	VPA 6	Solar Bolivia II	3000 domestic solar box stoves 100 institutional solar box stoves
2017	VPA 7	Rocket Paraguay II	3000 domestic rocket stoves 100 institutional rocket stoves
2017	VPA 8	Rocket Bolivia IV	3000 domestic rocket stoves 100 institutional rocket stoves
2018	VPA 9	Rocket Bolivia V	3000 domestic rocket stoves 100 institutional rocket stoves

Every VPA will reduce emissions of close to 10'000 tCO_2e per year. Distributed stove quantities and VPA types can be adapted according to local demand.

A.2.2. Policy/measure or stated goal of the PoA –

GENERAL OBJECTIVE

The objective of this program is to improve the livelihood and the environment of qualified[5] populations in Bolivia and Paraguay, by placing more than 50'000 ecological stoves in households, institutions or commercial endeavors that primarily use wood fuel, reducing around half a million tons of CO_2 over the first 10 years.

Educational Component

Environmental and social education is an integral and indispensable factor of the programme. All the activities include a comprehensive education and monitoring program whereby end-users receive training on the usage and benefits (to end-users) of the new technologies and environmental and health information and training. *CEDESOL*'s cook stove program of activities includes an essential educational component called Modular Environment Training (MET).

The main objective of the program is *holistic environmental well-being*[6]. The concept of "holistic" is important since it reinforces MET's effort in bonding what's energetic (efficiency and renewable) with health, nutrition and environment. The concept of "well-being" illustrates CEDESOL's vision to improve quality of life and create social equality through attitude transformation. Our main objective is to equip beneficiaries with the necessary tools for their personal; community and sustainable development, thereby helping them achieve a better quality of life and social equity by means of the holistic use of the combination of cookers and knowledge.

MET's strategy starts from a co-participative training through learning/teaching groups made up of housewives called "Environmental Well-being Squads"(EWBS), which will be carried out by Innovating Leaders (IL), who are themselves housewives selected by their EWBS to receive specialized training from CEDESOL technicians. After this first step, the Innovating Leader will train the EWBS reinforcing the stove use and giving them the tools to improve their quality of lives such as auxiliary alternative technology. She will also be in charge of, and will identify her community's needs as well as monitor the outcomes of this training and technology uptake.

[5] Beneficiaries are *qualified* through a participative group diagnostic where it is established that wood fuel is their primary fuel, that the potential beneficiaries believe the intervention will improve their living standards, that the beneficiaries will become active members of the Environmental Well-being Squads (EWBS), will provide usage information, allow monitoring and will assign their rights to emissions reduction credits to CEDESOL in exchange for participation in the subsidized program and acquiring the improved cooking devices via subsidized prices. They must also accept paying a % of the cost of the devices (usually around 50%) and cannot receive the devices for free.

[6] Our program of *holistic well being* meets the "first of its kind" guideline, as described in EB 69 REPORT annex 7, GUIDELINES ON ADDITIONALITY OF FIRST-OF-ITS-KIND PROJECT ACTIVITIES (Version 02.0) for project activities and is actually a first of its kind in concept as well since we will work to give our beneficiaries educational as well as technological tools that they can use to continually make better decisions about their lives. We incorporate empowerment of women as part of our value chain and support that, by attitude change in conjunction with technological interventions we can achieve a "lasting impact", especially considering propagation of the better attitudes and knowledge through the "kitchen classroom" most children unconsciously learn in.

All the modules are practical and applicable, providing housewives with useful tools for their daily lives. The thematic milestones originating the educational modules are: Hygiene and Health, Environmental-friendly Practices, Economy and Clean Energy Stove Use; and also Nutrition and Food Security.

The program includes provision for replacement parts and after sales service. A supply chain is developed via the ILs, with a vision towards future activities in target areas.

Identification of potential beneficiary populations

The program aims to benefit populations most in need, e.g. communities with wood as a primary fuel and/or those who have difficult or no access to other sources of energy. Usually a social organization leader or the mayor of the community contacts us for the stoves. CEDESOL´s team travels to the community to demonstrate while performing a field assessment to confirm that they belong to our target group of beneficiaries (as defined in footnote iii above). At the same time, a diagnostic of their needs versus our program is carried out with the participants and they have the opportunity to feed back into the program and clarify its appropriateness for them.

Promotion, dissemination and signing of agreements for the use of the stoves

Dissemination would be carried out in conjunction with local government bodies, citizen organizations and other NGOs to insure broader technology transfer along with the human development skills leading to healthier environments and lives. Agreements are signed by the participants themselves, committing them to install and use their stoves within a week, affirming that they will cooperate to provide us with the information needed for the project (such as surveys, tests, fuel use information etc.), to participate in the Modular Environmental Training Program and most important to assign us the rights to the resulting emission reductions.

Approximately fifty percent of the cost of the stoves should be subsidized through the income from Voluntary Emission Reductions and other donations. For example, a family that is looking to buy a 900 Bs stove will only pay 450 Bs for said stove. Also to be noted, should a stove have a very low price below 400 Bs, it should not be subsidized.

Base Line Studies

A sales record that collects basic demographic and fuel use of all beneficiaries, as well as a formal baseline/project scenario kitchen survey was designed to identify social, economic, health and environment impacts on the beneficiaries of any area in the project region, thus being useful in any of the activities. Furthermore, this survey performed with an appropriate sample of beneficiaries contains questions relevant to the determination of the current situation of families in terms of the customs and fuel use. Specific questions are made on the amount and frequency of use of fuel. The data collected serves as valuable information to determine our baseline and in turn become part of the monitoring since surveys are going to be conducted before and after the acquisition of ecological stoves.

Distribution of Stoves and Cooking Training

Distribution will be carried out with the help of local governments, citizen organizations and other NGO participants. In order to successfully transfer the technology in the use of the stoves, the MET program will be conducted in all target communities and every housewife who receives a cooker

should be part of it.

Project implementation methodology

1. Project request or dialogue with the municipal authority. The project is requested through the respected Municipality by letter or verbally with the pertinent authority.
2. Local Stakeholder Consultation (LSC) Diagnosis and Demonstration of the technology, and explanation of the project. Once a meeting is held with the interested community, CEDESOL conducts demonstrations on the ecological cookers based on a previous agreement-and on a proposed schedule that needs to be followed. After the demonstration is finished, the following steps are performed in order to cover all the needs of the beneficiaries.
3. Schedule to follow:

    3.1. List of participants. A list of the participants is made to keep in CEDESOL's database.

    3.2. Formation of the Environmental Well- being Brigades (EWB).This is one of the principle aspects of the Educational Component, which deals with a co-participatory training process of group learning and teaching along with the housewives within the Environmental Well-being Brigades.

    The EWB's will be guided by the "Innovative Leaders (IL's)", women who are chosen for their Brigade to be trained by experts from CEDESOL with the Modular Environmental Training Program (MET).

    This training program includes several modules of instruction. Within each module there are 3 sessions. Each session with the IL's will last approximately 3 hours, reaching a total of nine hours of intensive training.

    Once trained, they will in turn train their EWB, if they successfully learned the material in the 3 hour session, they will be able to replicate this knowledge with their EWB in 1 day. Therefore, each module conducted by a IL with her respective EWB will last 3 days. These sessions will be carried out once every month. Following this structure, each module will be completed after 3 months. During each term, CEDESOL will also identify the needs of the community. This training aims to equip the beneficiaries with the necessary tools for self-development, a sustainable community and achieving a better quality of life and social equity through the holistic use of the acquired cookers.

    3.3. Delivery of equipment / rrc general training

        3.3.1. Formation of the brigades. As mentioned above, the brigades are formed once CEDESOL establishes a meeting with the Community and the steps to follow are stated.

        3.3.2. Formation of lines of communication. These lines are formed with the objective of keeping in contact and strengthen ties with the communities.

        3.3.3. Set a specific work schedule. Depending on the needs and limitations of the beneficiary community, a list of jobs will be made.

        3.3.4. Sales record and surveys. This list is made into the baseline, which will be used later in all the documents that are evaluated.

4. First Innovative Leader (IL) Training (within 45 days of the general training). This training integrates different learning modules, which will guide and teach the best practices for taking care of one's

health and the environment. This project has two main components which are the provision of clean ecological cookers and a program that will teach, monitor and evaluate the use of the cookers. The duration of the Project Activities (PoA) is 28 years, with a period of evaluation through surveys every 2 years and the renovation phase completed every 7 years or within a fixed 10 year period that is determined in each VPA.

4.1. Session 1. Thermal Cooker (within 10 days). This training session focuses on, among other things, teaching how the cookers works, their assembly, use and maintenance.

4.2. Module 2. Rocket Stove (within 10 days). This training focuses on, among other things, teaching how the Rocket Stoves work, their assembly, use and maintenance.

4.3. Module 3. Solar Stove. (within 10 days). This training focuses on, among other things, teaching how the Solar Cookers work, their assembly, use and maintenance.

5. Follow up. The follow up on the use of the Ecological Cookers is done by the Innovative Leaders after they have received their training and are then able to transmit this knowledge to their Brigades. In this follow up, the leaders monitor and receive information on how they are cooking and problems that could have come up during their use. The follow ups are conducted between training sessions every 30 days, in which the Brigade makes a report of monitoring performed to CEDESOL.

6. Monitoring. Monitoring the development of the MET Program will be assessed every 30 days, 3 months and annually so as to learn their observations both early and later on in the process. That is the reason for dividing the project into two phases: the first phase (3 years) will serve as a pilot project so as to further improve and successfully reach sustainability in the second phase.

   Through this monitoring, CEDESOL will receive comments and reactions from the EWB's, then providing this valuable information to the trainers and the overall design of the MET. In addition, the monitoring every three months will be conducted by the Executive Team. Finally, the annual monitoring will be conducted nationally by a multidisciplinary team responsible for: one IL for each region, one representative of a EWB from each region, one or two representatives of CEDESOL, and one representative of an organization CEDESOL works with. The last meeting will serve to diversify the teaching material to obtain observations and exchange the various ideas from each region.

   It should be noted that during the four months of integration, the beneficiaries will learn to use and maintain themselves the ecological stoves that have been acquired by the Program. The purpose of the educational program is to ensure that the beneficiaries learn how to better handle their resources, both economically and naturally, so that in the future there is an exponential reduction of CO2 emissions. All this is described in further detail in the POA attached.

Monitoring and controlling the use of the Stoves or Cookers

Yearly ongoing monitoring and usage surveys and a biannual aging tests made by CEDESOL will ensure that the stoves are being used appropriately for the duration of the program and maintaining the established emission reductions.

On the other hand the educational component is also essential to the monitoring plan as it incorporates community members as health/environmental innovators in a 2 way learning and information exchange, this can also be applied in any of the activities. Consequently, it is believed that this monitoring will help create and strengthen partnerships between beneficiaries and CEDESOL.

Gold Standard Monitoring, e.g. performing monitoring surveys, will be integrated into the MET program whenever practically feasible,

Contribution to sustainable development

Currently, deforestation is a major problem worldwide, in Bolivia and in Paraguay; most forest exploitation is done in an unsustainable manner. In households where the traditional practice of burning wood for cooking continues, this is one of the main reasons for the depletion of forests in all regions. It is of utmost urgency to introduce alternative technologies to achieve reduced fuel consumption making it become a sustainable activity. The use of integrated cooking through ecological stoves that use little or no fuel is established as a direct solution to this important problem thus helping influence progress towards sustainable development.

However, integrated cooking has additional positive impacts more than just preventing deforestation. By reducing the amount of firewood used there is also a reduction in indoor and outdoor pollutions. Consequently it has effect on health by preventing diseases and illnesses caused by particles emitted by incomplete combustion. Burn injuries are also prevented by avoiding fire at a ground level.

In conclusion, the program contributes to Sustainable Development in a wider sense, such as:

- Avoidance of deforestation, thereby reducing erosion and loss of fertile soil.
- Reduction of airborne emissions due to combustion of wood.
- Transfer of solar cooking technology to different regions of Bolivia and Paraguay.
- New jobs for the production and dissemination of stoves.
- Local manufacturing of technology
- Significant reduction of time-intensive search for firewood.
- Reduction of illness and death due to sickness related to breathing particles from incomplete combustion and from water borne disease from drinking water that is not pasteurized.
- Reduction of burn injuries, especially to children.

SPECIFIC OBJECTIVE – SUSTAINABLE DEVELOPMENT

To improve the livelihood of families

These climate-friendly stoves will save the local population the purchase and/or the tiresome gathering of firewood or it will allow them to avoid the expenses as well as the inconveniences involved in acquiring cooking gas (LPG).[7]

With regards to livelihood; by cutting down on the amount of wood fuel used and introducing stove ventilation, there will be a reduction in exposure to unhealthy air particles created when using traditional wood stoves in the kitchen. Additionally, the use of more efficient ecological cookers frees up time which can be utilized for other activities (*social, economic, educational, etc.*) and improve quality of life.

To improve the eating habits of families

[7] The majority of Bolivia's rural areas are still experiencing a lack of most basic services, including reliable and affordable access to electricity and improved biomass cooking stoves. https://energypedia.info/wiki/Bolivia_Country_Situation

One of the themes within the MET program will be nutrition. The housewives will be taught about good nutrition for their children and for themselves especially during the pregnancy and for the newborns. Easy recipes will be provided to achieve a balance diet in the benefited families.

To improve the health of the families

CEDESOL is mindful of the fact that a good education, especially basic education, is a most crucial tool to open opportunities for people including the capacity to stay healthy (*because good health allows people the ability to pursue the necessary education to excel*). Education and health are clearly inseparable issues. They are mutually reinforcing and create multiplying positive benefits. Hence, the educational component of our program is dealing with issues closely related to health and its improvement.

On the other hand reduction in exposure to unhealthy air particles created when using traditional wood stoves in the kitchen will achieve a reduction in pulmonary illness mainly in women and children. Burn injuries are another big problem in rural areas, because of the type of open fire stoves that they use, to which children are exposed. Since the ecological stoves are much safer, a dramatic reduction in this type of accidents is also expected.

To improve the use of people's time

Time may be viewed as the fundamentally scarce resource in the economy. Households' decisions with regard to time are of special relevance as they ultimately determine the distribution of income. The use of more efficient ecological stoves frees up time which can be utilized for other activities (*social, economic, education etc,*) therefore improving quality of life.[8]

To improve the environment

The program will lead to reductions in *GHG* emissions, air pollution from wood fires, and deforestation. By reducing the stress on forests for wood harvesting the program will work to combat the quickly advancing deforestation in both countries, protecting an important source of absorption of CO_2. The use of ecological cookers will also directly reduce the amount of fuel (wood fire or LPG) that is being burned therefore avoiding the release of *GHG* that would have otherwise been emitted.

To improve the preservation of forests and ecosystems

Forests both influence and are influenced by climate change. For example, they play an important role in the global carbon cycle, and their management or destruction could significantly affect the course of global warming. Land degradation, floods, fires and droughts are expected to reduce crop yields and worsen food deficits in many countries like Bolivia and Paraguay, around the tropics and sub-tropics, where widespread poverty undermines people's capacity to cope with change.

Current levels of wood harvesting far exceed forest growth in many parts of the country, and wood-fuel cooking remains a significant contributor to greenhouse gas emissions.

By reducing the stress on forests for wood harvesting we:

[8] Close to 89 man-hours per family annually are employed to supply fuel wood and with an estimated 600,000 rural families this translates into a total of 53.4 million hours per year. http://www.opinion.com.bo/opinion/articulos/2011/0620/noticias.php?id=146

- combat the quickly advancing deforestation in Bolivia and Paraguay.
- reduce desertification and protect flora and fauna,
- improve the productivity and sustainability of natural richness

Locals collecting rare firewood in their surrounding

Sustainability and expansion of the Program to other areas of Bolivia

The reduction of carbon emissions position us for *myclimate* funding which ultimately would permit, on behalf of our beneficiaries, subsidies for the cost of the ecological stoves as well as help finance the cost of the MET program. Furthermore, it is expected that over the next seven years the design of the program will guarantee its sustainability and expansion to other areas of Bolivia and Paraguay, not only benefiting families but also institutions and industries/business from rural regions.

To enhance human capacity in the communities

As part of the program, the beneficiaries are trained in basic climate change information, environmental care, healthy kitchen practices, as well as the correct use, maintenance and installation of their new appliance. The "Environmental well-being Squads" (EWBS) will be developed in every community as part of a revolutionary vision where the people will be trained to successfully better hygiene and sanitation within their homes, as well as with the initiative to elect a leader inside the community who will receive more extensive training and be charged with overseeing the correct use of the stoves and become a key component in the "supply chain" within her community. The training modules will be conducted every three months in the case of the innovators, for 18 months, translating into once a month in the communities.

A.2.3. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity:

CEDESOL as the managing entity confirms that this programme is fully a voluntary action. There is no government agency in Bolivia or Paraguay that forces or requires a person to uptake this technology. Additionally, beneficiaries must pay a percentage of the program cost which underscores their

participation as a voluntary action. Each beneficiary will chose the technology they uptake.

CEDESOL has identified that the indicated technologies alleviate conditions causing poverty and climate change and have voluntarily chosen to apply for GS emissions verifications utilizing the GS proven methodology.

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

CEDESOL is the managing entity; it is a social and non-profit organization responsible for developing and disseminating new alternative technologies that reduce environmental and health impacts of people caused by the use of traditional inefficient stoves.

Sobre la Roca it is a small enterprise with 12 years of manufacturing and training experience in the use of ecological stoves, it has become a leader in production of this type of stoves in Bolivia and will be the main production facility.

myclimate is project participant and project developer. It supports the Gold Standard development and buys 100% of issued credits. myclimate is a not for profit foundation based in Zürich, Switzerland, founded in 2002.

This PoA is also open for other NGOs or organizations distributing ecological stoves, e.g. as a separate VPA. Any programme activity has to fulfil this PoA's eligibility criteria (see also A.4.2). CEDESOL is in charge of the main control, responsibility, management and supervision of the PoA's implementation and monitoring.

A.4. Technical description of the micro-scale programme of activities:

A.4.1. Location of the micro-scale programme of activities:

Bolivia and Paraguay: both land locked developing countries.

A.4.1.1. Host Party(ies):

Bolivia, Paraguay.

A.4.1.2. Physical/ Geographical boundary:

The physical/ geographical boundary of this programme is the border line of Bolivia and Paraguay.

Bolivia and Paraguay (google maps, 2012)

A.4.2. Description of typical micro-scale programme activity(ies):

A typical micro-scale programme activity contains the distribution of ecological kitchen devices as described below in the framework of the programme and described above in a specific project region inside the programme boundary.

Emission Reductions (ER) rights are transferred on a voluntary base from the beneficiaries to CEDESOL when signing the sales form (see annex 3). This is explained to the Beneficiaries when filling out the form. A signed Emission Reduction Purchase Agreement between CEDESOL and myclimate guarantees the transfer of the ER rights to myclimate. myclimate itself retires the credits for its clients.

All distributed devices must fulfill the following eligibility criteria:

- The project activity is inside the PoA boundary of Bolivia and Paraguay.
- The distribution is a voluntary action managed by CEDESOL.
- The distribution has to be accompanied with CEDESOLs' education programme.
- Beneficiaries cook with an unimproved stove and whose primary fuel is wood fuel, before participation in the project, proved with sales record[9].
- Distributed devices must reduce fuel consumption more than 35%, proved with field tests or lab test.
- Distributed devices must reduce indoor air pollution. More than 75% of the beneficiaries must confirm within field survey to have air quality improved.
- At least 90% of the whole production of the devices must be in Bolivia or Paraguay, proved with production papers (the aim is that this project also improves local economy).
- Devices must be sold to beneficiaries and cannot be distributed for free; however they can be subsidised if not affordable for the beneficiaries, proved with sales record.
- Beneficiaries assign their emission reduction rights to CEDESOL, proved with sales record.
- The activities correspond to sustainable development proved on stakeholder consultations and Gold Standard internal Validation.
- Each distributed stove or equipment has a thermal output below 150 kW per unit proved by Lab tests.
- All implementing project partners have signed the Gold Standard 'Do Not Harm Declaration' Form.
- All implementing project partners have signed the Gold Standard ODA Declaration Form.
- All implementing project partners shall implement the same monitoring plan as described in this document if not performed by CEDESOL.
- The devices utilized, such as Rocket and Solar must be certified and tested in the Test Center recognized as the authority for this purpose in La Paz Centro de Pruebas de Cocinas (CPC) or other similar authority acceptable to CEDESOL.
- The devices utilized, such as Rocket and Solar must not be transferred from other PoA's or Carbon Activities, proved by sales records. The devices shall be accounted for via sales records containing devices with unique serial numbers assigned to specific beneficiaries in clearly identified locations, cross checked with field surveys to prevent and assure against double counting in each VPA. This is further defined in A.4.4.1.
- The PoA is open to all people living in the project boundary (when cooking with an unimproved stove and using wood as primary fuel before joining the project, see above). The target population is not limited to any social, economic or demographic criteria.
- The start date of a VPA can be checked by documentary evidence (e.g. sales document indicating the date for delivery and/or installation of the first stove belonging to the VPA).

[9] A copy of the sales record form is included in annexes. This form helps us establish the existing baseline condition and the principal qualifier, which is that the beneficiary's pre-acquisition condition, is as a primary wood fuel user.

A.4.2.1. First technology or practice to be employed in the PoA and the eligibility criteria for inclusion of the technology or practice in the PoA:

Rocket Stove

The rocket stove is a variety of biomass cooking stoves. This design provides for efficient combustion coupled with efficient heat transfer to the pot. Wood, carbon, sticks, or dung can be used with this cooker. Rocket stoves operate roughly twice as efficiently, and substantially more cleanly, than the open fire cooking methods still used in many areas of the world.

Rocket stove

Furthermore, the design of the stove requires small diameter lengths of wood, which can generally be satisfied with small branches. As such, sufficient fuel for cooking tasks can be gathered in less time, without the use of tools, and ideally without the destruction of forested areas. This feature is what makes this stove eligible since it contributes directly to sustainable development achieving better management of forests.

The rocket stoves bring the following benefits:

- Eliminate smoke, creating a healthier kitchen environment.
- Cook faster and retain heat for long periods.
- Save over 70% of firewood compared to a traditional three stone cooking fire.
- Prevent accidents from fires.

The eligibility criteria for inclusion of a rocket stove in the PoA are:

- all criteria described above under A.4.2.
- must have a chimney installed if used indoor.

A detailed technical description is available as a separate confidential document.

A.4.2.2. Second technology or practice to be employed in the PoA and the eligibility criteria for inclusion of the technology or practice in the PoA:

Institutional Rocket Stove

Within the rocket stoves technology a model was designed for the institutional use. This stove is called Institutional Rocket stove and it can be used with 60, 80 or 100 liters pots. It works under the same principle as the standard rocket stove described above and it is made out of a metal barrel as shown in the next picture.

The eligibility criteria for inclusion of an institutional rocket stove in the PoA are:

- all criteria described above under A.4.2.
- must have a chimney installed if used indoor.

Improved Institutional Rocket Stove

A detailed technical description is available as a separate confidential document.

A.4.2.3. Third technology or practice to be employed in the PoA and the eligibility criteria for inclusion of the technology or practice in the PoA:

Solar Box and Retain Heat Cooking Practice

In solar box cookers (SBC or solar ovens) the pot is placed inside a closed container, thermally isolated by insulation, the interior of which is heated by solar radiation. Double-glazing traps the solar energy and the interior is covered with reflective material to increase and focus the solar radiation on the pot. Box cookers do not have to be realigned with the position of the sun very often, making them easy to use in everyday life. As there is no fuel consumption, solar cookers emit no harmful GHG or pollute the environment in any way. Therefore these cookers use completely clean energy coinciding with the criteria of sustainable development within our project boundary. [10]

The maximum temperature reached by a solar box cooker is roughly 180°C. The food prepared in the SBCs has a higher nutritional value (as no oil is required and the juices from the food are retained) and food can be cooked unattended, freeing time for other activities. [11]

Solar Box model for households (left) and for institutions (right)

A detailed technical description is available as a separate confidential document. The eligibility criteria for inclusion of a solar stove or RHC in the PoA are

[10] Solar box cookers are much easier to construct than parabolic cookers and are frequently made from local materials by local artisans after they have been trained (Download: Solarbox.pdf). Box cookers are less powerful than parabolic cookers and do not reach temperatures above 180 °C. Stir-frying is not possible, which makes them unsuitable for countries where this type of cooking is common. However, they are easy to handle, orientation to the sun is not as important as for parabolic cookers, and if the sun is temporarily covered by clouds, the temperature does not drop as fast as in parabolic cookers. During cloudy weather, a box cooker can serve as a retained heat cooker. Box cookers have been successfully disseminated in Bolivia.
https://energypedia.info/wiki/Cooking_with_Sun / https://energypedia.info/wiki/File:Cedesol-lasting_impacts.pdf

[11] Lasting Impacts of a Solar Cooker Project in Bolivia http://stoves.bioenergylists.org/cedesolstudy2006 Under the auspices of the French NGO Bolivia Inti, alternative energy experts David and Ruth Whitfield introduced solar cooking to many villages in Bolivia between 2000 and 2003. After demonstrating solar cookers in public forums, they then trained those people expressing interest in how to make and use solar cookers. Lasting Impacts of a Solar Cooker Project in Bolivia (pdf) by Melanie Szulczewski, Ph. D., Solar Household Energy, Inc. April 2006 Photos and editing by David Whitfield x Director - CEDESOL Foundation info@cedesol.org
http://stoves.bioenergylists.org/stovesdoc/Whitfield/Cedesol_Study_2006.pdf

- all criteria described above under A.4.2.

Retained Heat Cooking - RHC

A common concern among the beneficiaries is that the use of the solar cooker depends on the weather; however we also demonstrate another way of use. When the weather is cloudy or rainy the SBC can be used as a *Thermal Cooker (RHC):* the beneficiaries can heat their food, bringing it to a boil (aprox. 5 min.) with their traditional fuels (or with their rocket stove), then wrap the container with a blanket and put it in the solar cooker where the food will keep on cooking with the conserved heat. In this way there will still be a reduction in fuel consumption.[12]

Solar box used as retained heat cooker (RHC)

Thermal cooking can be accomplished without the solar cooker as well using insulated containers to finish the cooking after the food is brought to a boil with another heat device such as the rocket stove. This technology and its use is taught and reinforced through MET modules and its uptake monitored. These insulated container devices (RHCs) will be artisanally made by the beneficiaries using materials common to their households during MET modules.[13]

[12] "The fact that the solar box cooker can be used as a retained heat cooker, when there is no sun has been a real boost to our efforts here in Bolivia. We believe that this is one of the reasons we have had such success getting people to develop the habit of using the solar cookers. We have folks that cook at night for their husbands who work the graveyard shift using the solar cooker in rhc mode! They bring the food to boil, put the pots inside the solar cooker and let their husbands take the food out at midnight when they are leaving for work. Those ladies are so happy not to have to cook at 11 at night! In the case of the solar cookers, since discovering their double utility the number of users who use the solar cooker 5 to 7 days a week increased from 77% to 89%. For us this is very significant. The solar cooker/rhc users report a yearly average of 65% fuel savings." http://stoves.bioenergylists.org/cedintegrhc

[13] Fireless Cook Books! Use for Thermal Cooker Recipes May 10, 2012 — thermalcooker - http://thermalcooker.wordpress.com/2008/07/15/haybox-retained-heat-or-fireless-cookers / Thermal cookers are not new and were known as Fireless Cookers a 100 years ago here in the USA. Many old recipe books from that era are available online for free or have been republished and can be bought in book form. http://stoves.bioenergylists.org/node/75, http://stoves.bioenergylists.org/apro1996, http://stoves.bioenergylists.org/content/bibliography-hayboxe, http://www.pciaonline.org/atf/cf/%7B3F7B64BF-ADAD-479B-B81F-AB7C6A5426B8%7D/Retained-Heat-Cookers_FINAL_7.11.2007.pdf

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

This Programme proves the Additionality on PoA Level only since we can give convincing arguments why additionality is given for all VPAs inside this PoA (see A.4.3.1 and following below).

Additionality at the VPA Level is defined as part of the eligibility criteria (meeting two criteria for given additionality according GS Micro-Programme Rules):

- The project activity is inside the PoA boundary of Bolivia and Paraguay.

(Both countries belong to the group of Land Locked Developing Countries (LLDC)[14])

- Each distributed stove or equipment has a thermal output below 150 kW per unit proved by Lab tests.

(The project activity is an emission reduction project in which each of the independent sub-systems installed capacity is less than 1500 kW for households/ SMEs or communities.)

A.4.3.1 Introduction on assessment and demonstration of additionality for the PoA

The use of ecological cookers and practices will directly reduce the amount of fuel (wood fire or LPG) that is being burned therefore avoiding the release of *GHG* that are being emitted due to current practices.

In both countries, there is a noted lack of national/local policies being instituted to promote a shift to other fuels. Additionally, there is limited economical and technical capacity to change the common practice as evidenced by:

Table 1-A.4.3[15]

INDICATOR	BOLIVIA	PARAGUAY
Population size	9,009,045	5,793,045
Number of people affected by HAP*	3,099,111	3,058,149
Number of households affected by HAP	737,884	664,815
% of population using solid fuels for cooking	34%	53%
% of Rural population using solid fuels	75.4 %	81.2%
% of Urban population using solid fuels	6%	33.4%
Percentage of Rural population	33.5%	38.5%
Cook stove adoption indicators: Population using improved biomass cook stoves	0.687%	0.509%

[14] http://www.un.org/special-rep/ohrlls/lldc/list.htm

[15] This table was developed from information obtained from the Global Alliance for Clean Cookstoves, in which they cited as their Source: Food and Agriculture Organization, United Nations Development Programme, World Bank World Economic Forum, and World Health Organization - http://www.cleancookstoves.org/countries/america/bolivia.html and http://www.cleancookstoves.org/countries/america/paraguay.html

* HAP is the new designation for Indoor Air pollution (IAP), meaning Household Air Pollution as defined by the Global alliance for Clean Cookstoves.

Table 1-A.4.3 documents the existing common practice scenario as well as reveals how extremely important programs such as that described in this PoA are in our project boundary, where fully more than 1.4 million households use solid fuels for cooking. We can safely state then that the demand or need for the PoA intervention is much greater than this PoA can accomplish, however we project that one of the results of the impact of the EWBS as the program is implemented, will be a *ripple effect* beyond the scope of our PoA and thus conditions for a future demand for improved commercialization of these devices can come about. In Bolivia 34% of the population (3,099,111 people) still use solid fuels for cooking while in Paraguay the percentage is fully 53% (3,058,149).

It is interesting to note that although the economic situation in Paraguay is better than in Bolivia;[16] more people in that country's urban area continue to use solid fuels for cooking (33.4% in Paraguay vs 6% in Bolivia). We can determine from this that it is probable that our interventions will be more in the rural area in Bolivian and more evenly distributed between rural and urban in Paraguay.

In our opinion, the most significant fact gleaned from the table above is that ***less than one percent of the population within our project boundary are using improved biomass cook stoves*** (0.687% in Bolivia, 0.509% in Paraguay)

Since it is documented that *less that 1% of the population uses improved biomass cook stoves* (solid fuels) we can calculate that more than 2,940,000 tonnes of wood fuel for cooking are burned per year within our project boundary.[17] And that the less than 1% business as usual condition in both countries justifies the implementation of this PoA.

In the document "Health consequences of IAP" [18] we see that

> *"The health consequences of solid fuel use have been well documented. In a global assessment of avoidable health risks published in 2002, the World Health Organization (WHO) reported that in the year 2000 about 1.6 million people had died from indoor air pollution. In a subsequent 2009 report, the WHO raised the estimate to 2.0 million deaths. …indoor smoke from solid fuels is the 10th leading cause of avoidable deaths worldwide. It is the second most important environmental cause of disease after contaminated waterborne diseases (WHO, 2012)."*

And that concerning the "non health burden",

> *"Collecting biomass takes time. For those who do the collecting – the majority being women and children— the time can be considerable. This takes children away from productive activities such as attending school and studying at home. The time of parents could otherwise be spent on childcare and potentially income generating activities. Where biomass is not harvested*

[16] Country wide monthly income averages for Bolivia (232$us) and Paraguay ($ 464.83). Further on the study shows significant differences between country averages and income for agriculture in rural areas, which is a significant part of our project boundary. Furthermore, the estimated over all beneficiary costs of $264 would still put stove acquisition and implementation of the EWBS program way beyond the reach of beneficiaries through normal commercialization means. http://www.ine.gob.bo/pdf/EH/EH_2011.pdf http://www.dgeec.gov.py/Publicaciones/Biblioteca/EPH2011/Boletin%20de%20Pobreza%20e%20Ingresos%202011.pdf

[17] Family consumption average of 2.1 tons / year - http://www.opinion.com.bo/opinion/articulos/2011/0620/noticias.php?id=146

[18] The Health Consequences of Indoor Air Pollution: A Review of the Solutions and Challenges; by Daniel Polsky and Caroline Ly; June 13, 2012 http://www.cleancookstoves.org/resources_files/the-health-consequences-of-IAP.pdf pages 4,5

sustainably, its use can lead to degradation or loss of tree resources. While expansion of agriculture, not use of woodfuels (firewood and charcoal), remains the primary driver of deforestation globally, concentrated consumption of woodfuels—typically in urban areas by residential users as well as by industry—can lead to loss of forest cover (FAO 2009; PREDAS 2009).

A.4.3.2. Confirmation of voluntary action of the PoA

CEDESOL as the managing entity confirms that this programme is fully a voluntary action.

There is no government agency or law in Bolivia or Paraguay which forces or requires a person to uptake this technology. Additionally, beneficiaries must pay an important percentage of the program cost which underscores their participation as a voluntary action. Each beneficiary choses the technology they acquire.

A.4.3.3. Previous Announcement Check of the PoA

The Programme is a voluntary action 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 CEDESOL since 2009.

CEDESOL introduced and promoted the improved rocket stove as well as solar cookers in a pilot project in the period 2005-2009 on the basis of a diminishing subsidy scheme from the German Technical Cooperation Agency (GTZ).

In December 2009, CEDESOL again looked to carbon finance as a way to move the stoves forward, since it was clear at that time that the pilot would not otherwise survive and transition into a large-scale project. As programmed in the GTZ diminishing subsidy program initially supporting the pilot; the $26 USD subsidy per stove was reduced to $15 USD in December 2007 and limited to three years and to 1000 stoves; a very small number compared to the market potential. Prior to discussions regarding carbon finance, CEDESOL had secured a grant from Partnership for Clean Indoor Air (PCIA) which commenced September 2007 and expired August 30, 2009, having the specific purpose of transitioning manufacturing from hand-crafting to quality-controlled machine production to allow for manufacture of high-quality improved stoves. This transition was successful and currently permits a greater quality control and precision in their fabrication.

Although the continuing 2-year reduced GTZ subsidy and the two-year PCIA grant were both essential inputs, they were insufficient to effect a successful project launch, as the price of the stove was still clearly too high to be affordable to the market segment it was designed for, and the cost of distribution and marketing was still far in excess of resources.

Finance to underpin a suitable price subsidy together with support for distribution and marketing, was missing. The short duration of the two grants was also a major problem, as the project would clearly require support for marketing, price subsidy, and distribution in the longer term. Plus factoring in the desired educational components make it clear that the technology is beyond the reach of its intended

users.

Accordingly the additionality argument is found to be strong, leading to a decision to advance carbon finance to secure the transition from a pilot to a large-scale project with a crediting period starting January 1, 2012. The carbon finance then assists with the cost of the educational program and a larger scale market transformation becomes feasible.

A.4.3.4. UNFCCC Tool for the demonstration and assessment 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 following UNFCCC's Tools.

1. Clean Development Mechanism TOOL01 – Methodological tool: Tool for the demonstration and assessment of additionality Version 07.0.0
2. EB 69 Report Annex 7 – GUIDELINES ON ADDITIONALITY OF FIRST –OF-ITS-KIND PROJECT ACTIVITES (Version 02.0 - 13 September 2012)
3. EB 69 Report Annex 8 GUIDELINES ON COMMON PRACTICE

Step 0: Demonstration whether the proposed project activity is the first – of-its-kind

This programme is the first in its region promoting such a wide range of improved cooking including an educational component. Understandably it can be defined as a 'first-of-its-kind'. However, since other improved cook stove activities have been implemented in Bolivia and Paraguay before, we further prove additionality with a barrier analyses below.

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 could be identified:

- Alternative 1: Cooking with traditional cook stove, Baseline Scenario
  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. No improved technology is largely available for the population. While various suitable alternative techniques have been invented in the countries, 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 (LPG)
  As many urban families do, also rural beneficiaries could use LPG for cooking instead of biomass, a

perfectly legal scenario. Nevertheless, such a scenario faces significant barriers having to do with corresponding access, costs and supply.

- Alternative 3: Project activity without carbon funding.
  Improved cooking devices being diffused without carbon funding.

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

No mandatory policy/regulation exists in Bolivia or Paraguay regarding improved cooking dissemination. The proposed PoA is not a compulsory action; improved cook stove dissemination activities in Bolivia or Paraguay are all voluntary actions. All three alternatives comply with all mandatory applicable legislation and regulations as there are currently no laws regulating the domestic cooking neither in Bolivia nor in Paraguay.

Step 2: Investment analysis

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

Step 3: Barrier analysis

Sub-step 3a: Identify barriers that would prevent the implementation of the proposed project activity

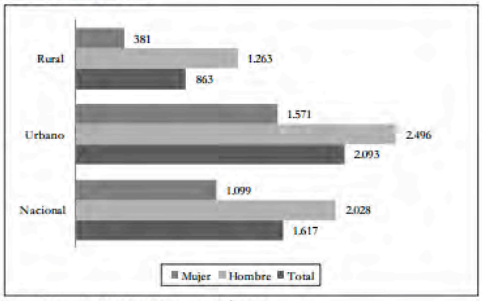
Three barriers to the project activities could be identified:

1. FINANCIAL BARRIERS:

The pre-subsidy market price of $100 USD for a box solar cooker and $145 USD for a two-burner chimney equipped rocket stove is a high investment in urban and rural Bolivia, and Paraguay.

In 2011, according to the INE (Bolivian National Statistic Institute) the national monthly income is about Bs. 1.617 or $US 232 (Figure 5.6), while in the rural area is Bs. 863 approx $US 125 as higher income and 627 Bs. **approx $ 90** as average income in activities such as agriculture, hunting, forestry and fishing as shown in Figure 5.7[19]

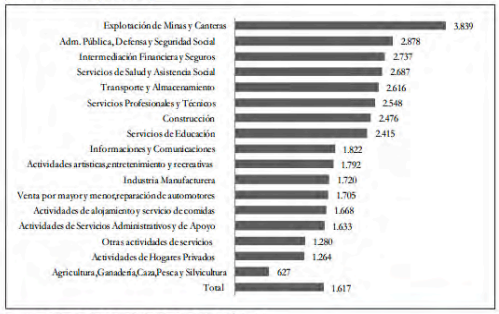
Gráfico Nº 5.6
BOLIVIA: INGRESO PROMEDIO MENSUAL EN LA OCUPACION PRINCIPAL, POR SEXO, SEGÚN ÁREA GEOGRÁFICA, ENCUESTA DE HOGARES 2011.
(En bolivianos por mes)



Fuente: INSTITUTO NACIONAL DE ESTADÍSTICA

Caption

Gráfico Nº 5.7
BOLIVIA: INGRESO PROMEDIO MENSUAL EN LA OCUPACION PRINCIPAL, SEGÚN ACTIVIDAD ECONOMICA, ENCUESTA DE HOGARES 2011.
(En bolivianos por mes)

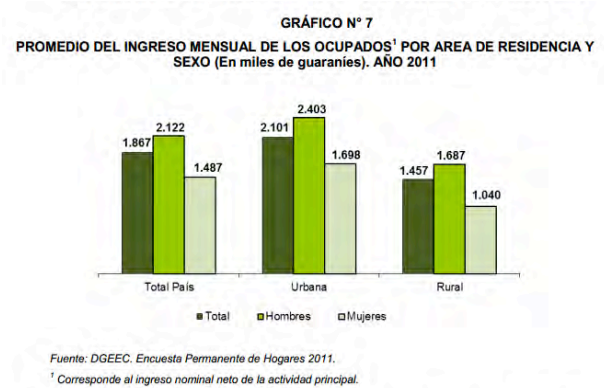


Fuente: INSTITUTO NACIONAL DE ESTADÍSTICA

Caption

[19] http://www.ine.gob.bo/pdf/EH/EH_2011.pdf

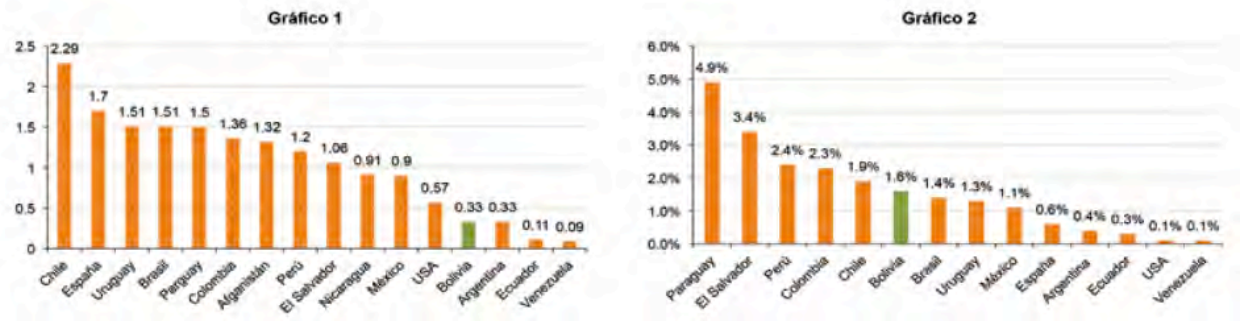
Whereas, according to information submitted by the Paraguayan Department of Statistics, Survey and Census (2011) in the Figure below titled grafico No7, the average monthly income of the employed is approximately 1 million 867 thousand Guaranies ($US 464.83), was greater in the urban areas (2 million 101 thousand Guarani) $US 523.09 compared to the average in the rural area of 1 million 457 thousand Guarani **($US 362.75**).[20]



Caption

As has been seen earlier (page23), the Paraguayan monthly average income is higher than Bolivian but this reality also undertakes a high price in all essential goods, specifically talking about the price of LPG where the percentage of its acquisition is quite high, according to an article in the magazine "New Economy"[21] which states that "a person's (average income) in Paraguay expends almost 5% of their monthly salary to purchase LPG" which is counterproductive to the neediest households and could help us understand why fully 33.4% of the Paraguayan urban population continue to burn wood fuel as their primary fuel (**Table 1-A.4.3[22])**.

This means that for example in the case of rural area in Paraguay where income is approximately 1 million 457 000 GS (U.S. $ 362.75) people using LPG spend about 72,850 GS (U.S. $ 18.13).



Cost of LPG % of income; Graph 2 including GNP

One of the criticisms of the graphic No1 above is that it does not reflect the cost of living in each country, just the comparison of the cost of a unit of LPG. The article explains that it's not the same

[20] http://www.dgeec.gov.py/Publicaciones/Biblioteca/EPH2011/Boletin%20de%20Pobreza%20e%20Ingresos%202011.pdf
[21] http://nuevaeconomia.com.bo/productos/revista-articulos/foro/precios-del-gas-licuado-de-petroleo-glp-en-el-mundo/
[22] This table was developed from information obtained from the Global Alliance for Clean Cookstoves, in which they cited as their Source: Food and Agriculture Organization, United Nations Development Programme, World Bank World Economic Forum, and World Health Organization - http://www.cleancookstoves.org/countries/america/bolivia.html and http://www.cleancookstoves.org/countries/america/paraguay.html

having $100 in Bolivia or Ecuador compared to the value of $100 in Brazil or Spain, since it is highly likely that in the first 2 countries $100 represents close to half of the monthly salary while in the other 2 countries that same $100 represents a personal income of one or two days. For this reason the author elaborated the Graph 2 demonstrating energy costs with relation to the GNP of the country. Using the graphic example we can observe that in Paraguay a person must invest 5% of their monthly income for LPG, while in Venezuela the same energy investment is only 0.1%.

2. TECHNOLOGICAL BARRIER

The technological barriers have been established in earlier citations,[23], [24], [25] demonstrating a high number of households, institutions and business using inefficient technology[26] but we will recap the most important barriers here:

- Prevalence of traditional behaviors and low production volumes (bad design) implies that the needed economies of scale cannot be achieved.
- Lack of infrastructure in general in each country (few roads, in general bad shape, especially in remote low economical 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).
- As there is little knowledge of the technology, confidence in it is unlikely and eventual savings not credible. Existing technology remains less risky.

These points lead to recognize that additional material cost and other costs related to technological barriers would have to be added in order to market the product (human resources capacity building, transportation, operating costs).

3. BARRIER DUE TO PREVAILING PRACTICES:

Most target families are accustomed to cooking with clay wood-fired stoves or three-stone fire stove technology. The introduction of solar and efficient cookers needs to be accompanied with a change in the habits regarding cooking time and periods as well as cooking. Therefore, training courses and demonstrations are needed.

[23] The majority of Bolivia's rural areas are still experiencing a lack of most basic services, including reliable and affordable access to electricity and improved biomass cooking stoves. https://energypedia.info/wiki/Bolivia_Country_Situation

[24] This "business as usual" scenario affects 53% of the Paraguayans and 34% of the Bolivian population involving fully more than 6 million people in over 1,400,000 homes with Household Air Pollution (HAP) for which the GACC attributes nearly 2,000 deaths a year. http://www.cleancookstoves.org/countries/america/bolivia.html http://www.cleancookstoves.org/countries/america/paraguay.html

[25] According to the Global Alliance for Clean Cookstoves' (GACC) Adoption Indicators, the % of Population using improved biomass cookstoves in Paraguay (0.509) and Bolivia (0.687) is less than 1% in each country, which demonstrates that without this intervention improved cookstoves are NOT being taken up voluntarily by either population. http://www.cleancookstoves.org/countries/america/bolivia.html http://www.cleancookstoves.org/countries/america/paraguay.html

[26] 1) In rural areas the supply of hydrocarbons is very low. The main energy source in these scattered and remote areas is biomass (especially wood), which on average covers 80% of the total rural energy demand (there are some areas where this resource covers up to 97% of this demand, a situation that has not changed in recent years).
Instead, the use of Liquefied Petroleum Gas (LPG), widespread in urban, is only present in major rural centers. In the rest of the country there simply is no availability of the fuel, said the report. http://plataformaenergetica.org/content/3308

2) Bolivia, with a population of approximately 10.4 million inhabitants, is considered one of the poorest countries in Latin America. While urban areas such as La Paz and Santa Cruz are modern cities with a relatively good supply of modern energy services, the majority of Bolivia's rural areas are still experiencing a lack of most basic services, including reliable and affordable access to electricity and improved biomass cooking stoves. https://energypedia.info/wiki/Bolivia_Country_Situation

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

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

ALTERNATIVE 1: Cooking with traditional cook stove, Baseline Scenario
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 knowhow is traditionally available, and production is local, with no transport costs. The 3-stone 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 use.

ALTERNATIVE 2: LPG for rural households
The three barriers do affect the alternative scenario use of LPG at rural households;

- Financial barrier: as documented on page 24, in Paraguay, LPG costs approximately 5% of the average monthly income in rural or urban areas (remember 33.4% of the urban population primarily use wood fuel) and as is explained in an investigation by Miguel Fernández Fuentes and published by the Center for Labor and Agrarian Development (CEDLA). [27] Rural families, he argues, because they have limited access to energy, used batteries, candles and lighters, but in real terms, poor rural families pay more for energy services of low quality. He notes that in rural areas the supply of hydrocarbons is very low, particularly liquefied petroleum gas instead, is widely used in urban, but only present in major rural centers.
- Technological barrier and barrier due to prevailing practice are minor but also existing.

ALTERNATIVE 3: Project activity without carbon funding

[27] The main energy source in isolated and remote areas is biomass, which on average covers 80 percent of total demand for rural energy, although there are some areas where this resource covers up to 97 percent of demand, which is not has changed in the last 13 years, he adds. He explains that the urban area focuses its energy supply in the electricity and LPG. Both represent 7 percent of total consumption, while in rural areas, the most important is biomass, with 93 percent and in diesel or kerosene which represents 4 percent. The comparison between both realities reveals that while biomass consumption of a rural family is 19 times more than in an urban family, for the case of LPG an urban household consumes 12 times more than rural. The study explains that biomass is mostly collected and there is also a wood market, it is estimated that five million dollars a year.
The supply of biomass in households in scattered communities, particularly firewood for cooking, is by means of collection. About 2 percent of rural households collect firewood forest more or less close. The average household consumption is estimated at 2.1 tons per year." He argues that the impossibility of substitution of wood by LPG, lies in the inaccessibility to isolated communities and high transportation costs, as well as the irregularity in supply. The researcher Miguel Fernandez notes that the most reasonable choice facing the future is to improve combustion technologies, through the use of three-stone stoves, which have an efficiency of about 7 percent to improved stoves with efficiencies between 20 percent and 25 percent. "It could reduce fuel consumption, pollution and therefore, in at least three times compared to current consumption."
http://www.opinion.com.bo/opinion/articulos/2011/0620/noticias.php?id=14672

- Financial barrier: As explained above the project could not be implemented without carbon finance
- Technological barrier: As explained above, the technology could not be produced in this scale without carbon finance.
- Barrier due to prevailing practice: Without the programmes educational programme, beneficiaries would lack of prevailing practice as explained above.

Barrier	**Alternative 1: Base Line Scenario**	**Alternative 2: LPG**	**Alternative 3: Project Scenario w.o. Carbon Finance**
Financial Barrier	not applicable	applicable	applicable
Technological Barrier	not applicable	(applicable)	applicable
Prevailing Practice	not applicable	(applicable)	applicable

The only credible alternative to the project scenario is Alternative 1, the continuation of the baseline situation, use of inefficient cooking. All other alternatives (2 and 3) face one or more barriers that prevent their implementation.

Step 4: Common practice analysis

Sub-step 4a: The proposed programme applies measure(s) that are listed in the definitions section of the tool

Since the proposed programme applies measures that are listed in the definitions section of the UNFCCC tool ((ii) Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable) the "Guidelines on common practice" of the UNFCCC shall be applied.

Some projects promoting improved cooking have been implemented in Bolivia and Paraguay in the past, and will be likely in the future. Yet, these projects cannot be considered as comparable to this programme (other technology, other conditions). They present differences with this programme in terms of scale, financial flows, educational programme, monitoring, diffusion methodology and sustainability.

As a matter of fact other improved cooking projects have high proportions of grant 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.

Outcome of Step 4 is that the proposed project activity cannot be seen as "common practice", so the proposed activity is additional.

A.4.3.5. Conclusion on Additionality

As explained above it can be demonstrated that the proposed Micro Scale Programme is a voluntary action, that no mandatory laws and regulations do exist in the programme countries to implement improved cooking and that the programme was previously announced.

It further can be demonstrated that possible alternatives to the programme are prevented from implementation due to different barriers. Despite the proposed programme with carbon finance, the baseline situation is the only realistic scenario for the near future for Bolivian and Paraguayan cooking.

Gold Standard registration will give the programme the needed funding and will help the PoA to overcome mentioned barriers. Revenues from carbon credits allow the Project Participants to offer the locally produced stoves at large scale to a subsidized price, compatible with local population's ability and willingness to pay for such a device, including appropriate sound capacity building and follow-up. Without the support from carbon credits the stoves would not be marketable.

This programme does not correspond to the baseline scenario and is not common practice. It is additional and thus, all its programme activities (VPAs) can be seen as additional when complying with the listed eligibility criteria.

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

A.4.4.1. Operational and management plan:

In order to keep detailed records of all beneficiaries who obtained an ecological cooker in any of the activities included in our PoA and to avoid “double counting”, we follow these steps:

Upon entering a community, the first step is to interview the leader or top authority, filling a document which details information about the community itself. This document includes information on population size, type of housing, population growth in recent years, numbers of schools, boarding schools, health clinics, types of industries within the community and its exact location using GPS coordinates.

Regardless of the type of activity or VPA, at the time of executing the physical delivery of the cooker every one of the beneficiaries must fill out a document called sales form.

This document includes specific information on:

- Location of the beneficiary: department, municipality, neighbourhood, OTB, address, telephone
- Current status and fuel type used in their homes;
- Type of cooker that is being assigned with its serial number (unique for every cooker) and the purpose it will be use for.

This document also serves as a signed commitment since it reports on the conditions within our program, compromising the beneficiaries to make proper use of the cookers and provide necessary information for studies within the program, as well as to take part of the educational component. As a last point, this paper clarifies that beneficiaries are allocating the emission reductions of greenhouse gases for the exclusive use of CEDESOL.

All the data is entered into our database called sales record that specifies the serial number of the cooker as identification for each beneficiary since it does not repeat itself, which allows us to avoid double counting of cookers. We can also count the number of cookers aimed and delivered in each community or activity, with the list and addresses of all beneficiaries to whom they were delivered.

Follow up, maintenance and monitoring is described in chapter D.7.2 Description of the monitoring plan.

The whole programme is implemented, operated, managed and coordinated by CEDESOL in Bolivia and Paraguay. Foundation myclimate, supervises the activities, supports CEDESOL with the development of the programme, helps to write and revise relevant documents and gives advice concerning Gold Standard and Methodological rules.

A.4.5. Public funding of the programme of activities (PoA):

See ODA Declaration in Annex 2.

SECTION B. Duration of the micro-scale programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

1st July 2011 or two years before program registration, whatever is the later.

(as written as commissioning date in LSC Report from 15 July 2011, LSC Meeting took place on 27 April 2011, distribution of first stoves under the first VPA started in June 2011).

B.2. Length of the programme of activities (PoA):

The duration of the programme is 28 years

SECTION C. Stakeholders' comments

C.1. Summary of stakeholder comments on the PoA design:

The PoA stakeholder consultation took place virtually. A database was assembled of all organizations, individuals, businesses and foundations that will be affected or potentially affected by the project. Mails were sent to almost 750 stakeholders containing an invitation (both in English and Spanish) to participate in consultation and the non-technical description of the program (also in both languages). An email account was created to serve as a direction to send and receive information about this consultation.

Just a few invitations bounced back, but the great majority got to the recipient. We received 19 answers, and they were all positive comments about the project. We didn't receive any suggestions to make changes in the design of the program (see below).

Both Bolivian and Paraguayan authorities (DNAs) have been approached via several emails sent to the directions listed with CDM, plus our Paraguayan partners connected us with an updated person in the appropriate agency but this occurred right around the time the Paraguayan President was impeached in 2012 and that person apparently resigned. No response from those Authorities has been received so far, however in understanding with observations in the LSC feedback from GS we have agreed in case feedback is received in the future, it will be taken into account.

C.2. Please indicate the level at which local stakeholder consultation is conducted. Justify the choice:

1. A virtual electronic local stakeholder consultation (LSC) for Bolivia was done at PoA level in 2012.
2. A full physical LSC including SDA was done for first VPA1 and VPA2 in Cochabamba, Bolivia in 2011.
3. A virtual electronic LSC at PoA level for Paraguay will be done in 2013/2014.
4. Simplified LSCs are/will be done for every VPA.

At PoA Level a virtual LSC was conducted in June 2012. See above C.1 and below C.3.-C.6.

A full physical Stakeholder Consultation meeting was held on April 27th 2011 in Cochabamba, Bolivia. It was performed based on the Gold Standard guidelines v2.1 available at this time for standard GS VER projects including a Sustainable Development Assessment (SDA) and not based on micro PoA rules. A LSC report has been written, uploaded to GS registry and approved by GS in June 2011. An electronic

Feedback Round was performed in September 2011. This LSC is used as VPA 1 LSC. For more detail see VPA1 DD and the corresponding LSC report.

For further VPA inclusions, simplified LSCs will be performed in the corresponding region based on simplified micro scale rules (no SDA).

C.3. Brief description how comments by local stakeholders have been invited and compiled:

The first step was to gather a list of all stakeholders, than we divided them in the categories defined by the GS. We sent between May 29 and June 2 a virtual invitation (Spanish and English) to almost 750 stakeholders. In the same email we attached the non-technical summary of the project both in Spanish and English. An email account was created to serve as a direction to send and receive information about this consultation.

Below you can find the invitation we sent to participate in the Virtual LSC.

CEDESOL
CENTRO DE DESARROLLO EN ENERGÍA SOLAR

myclimate
Protect our planet

Cochabamba Bolivia May 29, 2012

LOCAL STAKEHOLDERS CONSULTATION

(VIRTUAL) FOR THE

MICRO-PROGRAMME OF ACTIVITIES

"ECOLOGICAL STOVES FOR LIVING WELL"

Together with the myclimate Foundation of Switzerland, the Bolivian Foundation CEDESOL is developing the project "Ecological Stoves for Living Well". Our program aims to improve quality of life of more than 50,000 families by combining technology with education, through the implementation of ecological stoves, jointly with environmental and well being training in Bolivia and Paraguay.

This project was first presented at the Local Stakeholders Consultation (LSC) held in Cochabamba on the 27.04.11. Currently the project has been expanded through a series of improvements and changes and therefore a virtual consultation is performed to inform participants of the previous LSC meeting about the differences and to invite new stakeholders to review the design of the project.

This new modality called MICRO-PROGRAM OF ACTIVITIES (PoA) offers more flexibility in terms of project timeline, project boundaries and project size. A PoA is made for programs that deal with a large number of different entities and/or technologies to undertake one certain type of activity. This flexibility is achieved thanks to a new structure in the project organization, precisely on the operational level. Thus the "Program of Activity" operates not only on one level but on two: At the Program level (PoA) and at the Program of Activity level (VPA). This is the main difference in structure between a "Program of Activity" and a conventional emission reduction project.

This type of consultation is performed as part of the requirements that must be met for approval of the project. It aims to inform all persons, groups, communities, organizations, or companies affected or potentially affected by it, of the description and scope of the project. It also informs about the possible impacts so that the stakeholders may voice their opinions and impressions.

To Participants of the LSC meeting of 27.04.11 held in Cochabamba

This message is part of the virtual feedback process for the Local Stakeholder Consultation held on April 27, 2011 for the presentation of our project "Ecological Stoves for Living Well". We are pleased to inform all concerned of the upgrade of our project to a Micro-Program of Activities (PoA). It includes distribution activities of different ecological stoves expanding the scope, previously limited to only 6 departments in Bolivia to the totality of Bolivia and Paraguay. Furthermore, this upgrade means new and different technologies can be included as activities within the program.

Part of the purpose of this mail is to inform those who attended the consultation about the changes involved in this upgrade. We invite you to read the Non-technical Summary of the Program attached to this mail, which details the technologies and planned activities and also to participate in the virtual consultation being carried out now for this new category.

To New participants

We invite you to participate in the Local Stakeholder Consultation on designing the Micro-Program of Activities "Ecological Stoves for Living Well". Attached is a description of the program design for review, it contains a detail description of the technologies and planned activities.

Your experiences and opinions regarding the design of the program are very important not only to us but to the participative process of determining the final design of the Program, we are open to and welcome any suggestions, criticism, questions or comments you may have. Furthermore we invite any organization, foundation or company within the industry to submit proposals that could be included as new technologies or an activity within our PoA. The official closing date of the consultation will be June 30 to 18:00 hours, therefore we will only take into account the responses received to that date.

To participate, please write us at: cedesol_feedbackround_poa@cedesol.org
or Call to: 591 4-4028527.

C.4. Summary of the comments received:

S.No	Comment	Organization	Response to comment
Graham Knight	We are developing units that will produce electricity from the heat of woods stoves. Does this fall into any of your definition of "new technology"	BioDesign	It is very interesting and has always seemed ideal for stoves, however we understand that at this stage much research and development is needed before we can be sure that it is suitable for the public and that will not induce people to consume more fuel. It is important to clarify that we cannot include this suggestion as a new technology within our program since our PoA is about generating emission reductions through the use of stoves. For that reason it is not feasible to include an electrical component under our methodology. However as the TEC technology becomes more viable we can consider presenting it to our beneficiaries as an auxiliary technology outside the scope of the project.
Noemi Stadler Kaulich	I propose to consider within the project the preparation of charcoal, both for energy use in the kitchen and to improve soil structure and fertility and therefore its ability to store moisture		Similarly as other cases such as reforestation, we hope that our project will grow strong enough so that in the future desirable programs such as these can be introduced as part of the educational component (MET). Improved cooking devices are within the category of emission reductions and charcoal use to improve soil structure would be in the carbon sink category. Therefore both activities cannot be presented within the same project.
Magdalena Medrano Velasco	Having received information about the project in consultation, we congratulate the extension to other countries like Paraguay, and to the whole country of Bolivia, because such projects are important to reduce air pollution and mitigate global warming our contribution to this document is referred to the mitigation measures that should be another component under item 2.2.6. not only to reduce the demand for firewood but also begin to replace it, so we suggest to include within the activities of WEBS and IL the training in the implementation of small community nurseries and to incorporate within Section 2.2.6 and 2.2.7 . these results to support the reduction	Ex representative of the Secretaría de Derechos de la Madre Tierra (Secretariat of the Rights of Mother Earth)	We will definitely consider the possibility of integrating a reforestation component into our educational program in the near future. However we cannot consider reforestation as a new technology, since it is not within the methodology that we must adhere to in order to be eligible for the Gold Standard certification.

	of fuel wood use activities, also for rehearing and forest stocking, in the case of Bolivia there are regulations to which the communities must be attached, schools should promote there are also other ordinances that are intended to promote communities to establish their forests are these programs on the website of the ministry of environment and water, I believe the interagency coordination will also be critical to project development and strategic alliances		
Otto Formo	To your information find a report from the Pilot on Household energy and production of Biochar using the gasifier stove Peko Pe in Zambia, Southern part of Africa 2011. Very promising results and the use of corncobs as fuel was doing fine and working perfectly in the gasifier. We are now about to scale up the project and involve the production of pellets as fuel for the gasifier stoves for the urban population, as well.	Boardmember of Miombo and advisor on biomass fuel	Biochar and ecological stoves would be a great combination, however we can only consider it as a new component within our educational program and not as a new technology for the reasons already mentioned before.
Jack Anderson	You asked for my comments and/or suggestions regarding the CEDESOL-myclimate project so far. two come to my mind right away. First is the incredible dedication of David and his wife Ruth in their pursuit of this dream of financing large numbers of households with alternative energy cooking appliances and particularly the need to do it in a holistic fashion that addresses other needs such as health, education and environment. To that end they have contributed much time, energy and sacrifice. It has been difficult for them to sustain their organization and provide a minimal income for themselves during this period of project R&D. they have shouldered that burden because their lives are about helping their people. Secondly I would like to say that because of their years of experience in the technology transfer field in Bolivia they have been able to bring valuable ideas to the implementation of GS requirements, ie monitoring and quality assurance. There really is no substitute for that kind of on the ground experience. I am sure that you already appreciate this, but it would be my top observation. I was very pleased to hear that myclimate has now agreed to pre-purchase some reduction credits this year so that they can improve their financial picture and increase production and distribution.	Program Coordinator for Kyoto Twist Solar Cooking Society	All of the CEDESOL and Sobre la Roca team as well as our myclimate partners consider what we do more vocation than a job. We are pleased that the experience we gathered in the projects financed by the Kyoto Twist have helped us develop the project methodology we are now employing. We are very grateful because without myclimate emission reduction financing the project could not go forward.
Ing. Suyapa Zelaya Amaya	ENVIRONMENTAL BENEFITS: Ecological Stoves For Living Well eliminates one of the most serious health problems and less recognized in Bolivia, Paraguay and the	Directora Ejecutiva Fundación de Iniciativas de Cambio	We appreciate very much the comments

	world: respiratory diseases and deaths caused by smoke inhalation in the home, particularly affecting women, elderly and the children. The efficient use of firewood reduces deforestation caused by firewood collection logging, contributing in turn to reduce Greenhouse Gases ECONOMIC BENEFITS: Efficient use of fuel wood for cooking in relation to the large consumption of traditional stoves Additionally, by reducing fuel consumption are significantly reduced costs to buy or find firewood, thereby increasing the family budget. Reduce reliance on imported fossil fuels used for cooking, such as liquefied petroleum gas, kerosene and others that tend to become unsustainable both by high oil prices and its derivatives as the environmental impact generated as for climate change. SOCIAL BENEFITS: Reduced time spent searching for firewood, a task usually assigned to women, children and elderly, so the most vulnerable household members listed above will have time to study, work or relax By the above we consider the project: MICRO-PROGRAMME OF ACTIVITIES " ECOLOGICAL STOVES FOR LIVING WELL " qualify for the Gold Standard quality award	Climático de Honduras (Fundación MDL de Honduras)	
Thomas Israel	Section 2.1 Within the Bolivian social, economic, and political context, CEDESOL has proven that the Foundation can survive under the most difficult conditions and that it can thrive within a relatively comfortable market climate. In our professional judgment, this is an extraordinary achievement. Nevertheless, the CEDESOL Foundation shall be continually confronted with challenges; sometimes of such complexity, diversity, severity, and combinations to boggle the mind. CEDESOL Management must plan on challenges arising on account of: (a) Social and political unrest,	Co-founder and principal GreenMicrofinance	These points are already incorporated in our planning.

	(b) Current and future federal governmental policies (c) Effective access to "bootstrap" seed funds, (d) Policies of international governments and actors, (e) Economic conditions (e) The complexities of climate change. We wish to emphasize that CEDESOL has been persevering in its Ecological Cooker Program in Bolivia for ten years. The Foundation's basic program tenants were developed years ago by Ruth and David. Some international institutions and organizations are now espousing developmental approaches in their publications, which appear to be inherently similar, even congruent in spots, to the CEDESOL methodology that David and Ruth have refined and practiced in the field for over a decade.		
Thomas Israel	Section 2.1.2 How does CEDESOL judge that its educational program must be modified to meet the needs of and be culturally acceptable to Paraguayans?	Co-founder and principal GreenMicrofinance	The peculiarity of our educational program is that we can modify the delivery of the content according to the social economic situation of the beneficiaries. Thusly when we are in one region of Bolivia, the delivery of the program is sculptured for that region, ethnic or socioeconomic sector. The same holds true for operations in Paraguay or other countries. This is one of the qualities that permit our MET program to be replicable.
Thomas Israel	Section 2.1.4 Are these CEDESOL studies based upon a randomly selected sample and are the studies statistically reliable? Does CEDESOL's field work indicate significant differences among village clusters, which are located in different areas of Bolivia, where climate, available natural resources, and so forth may be significantly different? Section 2.1.6. Please briefly describe what quality controls are implemented to assure that the same standards of data collection and analysis are applied routinely throughout the monitoring and survey process.	Co-founder and principal GreenMicrofinance	The entire certification process is governed and based on the methodologies required by the Gold Standard. These methodologies (Base Line, Monitoring, NRB, etc.) are quite stringent as the Gold Standard aims to ensure the validity of the process for issuing carbon credits of the best quality. We have based every tool we are using on the methodology described in the following document: Technologies and Practices to Displace Decentralized Thermal Energy Consumption – 11/04/2011 from the GOLD STANDARD Adequate Evidence is supplied to demonstrate our positions as defined in:

			• Baseline studies pg. 5,10 • Project Scenario pg. 7 • Non Renewable Biomass (NRB) pg. 9 • Data Collection pg. 10 • Project Studies pg.11 • And others We also adhere to the methodology described here: http://cdm.unfccc.int/methodologies/SSCmethodologies /approved.htm
Thomas Israel	Section 2.1.6. Has it been possible for CEDESOL to qualitatively ascertain the benefits of education within the villages and homes of the beneficiaries: by this we mean to inquire, have CEDESOL personnel observed an increase in the well-being of the beneficiaries IN ADDITION to the use of the eco cookers? It is well known that education plays a significant role in the well-being of those with limited resources.	Co-founder and principal GreenMicrofinance	Through many years of experience and studies related to the subject, we are convinced that the best way to help a community is to combine education with technology (and not the other way around) because the main goal is to make a difference in the minds and behaviour, providing both mental and physical tools for poor people to make better decisions about their lives. Since this program began on 1 January it is premature to offer results. However the preliminary results will be included in our PoA-DD
Thomas Israel	Section 2.1.7. We suggest that CEDESOL consider the inclusion of a GMf sustainable agricultural program, which will provide additional income for the farmer and stabilize the land. This program consists of the planting of Pongamia trees, the fruit of which is a source of non-edible vegetable oil. These trees are planted in rows separated by wide planting alleys for vegetables, fruits, and other legumes. This program: [a] provides additional income, [b] stabilizes the land with nitrogen-fixing trees, and [c] provides shade for plants that do not tolerate full sun. A full summary of the "sustainable" agriculture program is beyond the scope of this writing. More information can be provided in another forum.	Co-founder and principal GreenMicrofinance	We are aware of this program and we will take it under consideration to be introduced in our education program since it is not directly related to emissions reductions through thermal generation.
Thomas Israel	Section 2.1.7. Do we have any indication from CEDESOL field work how much time families save in the collection of firewood, once they switch from a three stone fire to a CEDESOL ecological cooker? Again, has CEDESOL had the resources to gather information about their beneficiaries	Co-founder and principal GreenMicrofinance	The recollection of this information is included in our baseline and project surveys but since the project started on 1 January it is premature to offer results. Specific questions related to time savings

	regarding any of these trends? If so, have these data been analyzed? If not could the enhanced educational component include such research		and health, are included in our surveys.
Thomas Israel	Section 2.2.2. Do CEDESOL field data include any data supporting this declaration? How has CEDESOL tracked these changes in better nutrition? Have such changes really favourably impacted the health of those involved? That is to say, have the families involved had the resources to implement and maintain a more healthy diet? Co-founder and principal GreenMicrofinance We expect to track these changes through the feedback obtained from the housewives and their leaders when they apply in their homes what they have learned within the educational component. Thomas Israel Section 2.2.3. Can CEDESOL in any way expand its educational component to teach some selected subjects in more depth?	Co-founder and principal GreenMicrofinance	Yes, the educational component takes into consideration that it is an evolving system, to be polished and improved based on the feedback from the beneficiaries. As our relationships with other organizations permit, and resources allow, through these other organizations we will provide more selected subjects as long as they are: 1) requested by the beneficiaries 2) in keeping with our thematic milestones.
Thomas Israel	Section 2.2.5. It would be very interesting if CEDESOL were able to assess the positive impact of its program upon the rate of deforestation in the areas where the program has been well established for at least two, perhaps more years. Such an addition to the CEDESOL educational program would probably be cost prohibitive.	Co-founder and principal GreenMicrofinance	When the program has been running for that period of time, our baseline, project surveys and biannual monitoring will provide this data.
Thomas Israel	Section 2.2.7. Is there a business plan in place for this significant CEDESOL expansion?	Co-founder and principal GreenMicrofinance	We anticipate expansion into Paraguay in late 2013 or maybe 2014. In conjunction with the "Celestina Perez de Almada" Foundation, as well as other actors they will bring into the project. We will structure our Business Plan based on our current plan for Bolivia.
Thomas Israel	Section 4. Is our understanding correct that Sobre la Roca is currently the only source for such parts for CEDESOL's rocket stoves? In periods of greater actualized demand, we understand that Sobre la Roca has outsourced the training and technical knowhow to other small manufacturers. Is this correct? Will this continue to be the policy going forward, when there exists sufficient demand?	Co-founder and principal GreenMicrofinance	Different studies have indicated that central manufacturing is the best way to reduce cost and achieve high quality control. Our business plan includes provisions for the upgrading of manufacturing capabilities of Sobre la Roca in stages. Our backup plan is to continue to work with small enterprises that are helping Sobre la Roca meet its requirements. One way in which CEDESOL supports this progression is also through volunteering engineers and constant product improvement.
Thomas Israel	Section 5. What do we mean by "cooking situation"? What is the benchmark against which CEDESOL intends to measure such improvement? What are the qualitative and	Co-founder and principal GreenMicrofina	The cooking situation is defined by the baseline studies which establish the benchmark against which CEDESOL intends

	quantitative, which would reflect acceptable improvement?	nce	to measure the improvement.
Thomas Israel	Section 5. Are we speaking about some production outside of Bolivia or Paraguay? Or are we speaking about materials that must be purchased abroad? Does the statement apply to both countries as an integral unit, or does CEDESOL anticipate that a majority of the manufacturing will occur in Bolivia? If CEDESOL anticipates that manufacturing will be undertaken in Paraguay, please address the following: [a] anticipated time line to establish Paraguayan production, [b] anticipated ownership, [c] additional incremental cost to ship stoves to Paraguay until local production is fully and satisfactorily established. Additional cost to market in Paraguay?	Co-founder and principal GreenMicrofinance	The production of the ecological stoves to be installed or utilized in Paraguay is yet to be defined within the business plan that is being discussed with our partners in Paraguay and based on the experience of the program in the first years in Bolivia.
Thomas Israel	Section 5. Please explain how CEDESOL expects to mitigate the difficulties in dealing with the inefficient and untimely disbursement of funds by various municipalities in Bolivia. What has been the economic impact upon CEDESOL to date?	Co-founder and principal GreenMicrofinance	Within the context of our project partnership with GMf it is established that they (GMf) are responsible for putting in place the financial package to ensure that the operations are not interrupted by the situations described. We anticipate GMf to fulfil its commitment within the next 90 days.
Monica Pacheco	My opinion is that this Project presents in a good manner the main reasons for which people and especially campesinos could use the stoves you are introducing. I think it is a very interesting project. However my only suggestion would be if you could incorporate into your presentation some background or proofs that the stoves are being used in other places, or if you have tested them, those kind of experiences should be described within the project, so that the people don't think they haven't been tested or that you are going to begin experience with them. Don't forget that you are inviting people to leave the "known" for something new something "unknown". Sometimes is not enough just to say something, you also have to prove it.	Coordinator Project # BOL/60130 United Nations Small Projects (PNUD in Spanish)	We appreciate the observation, even though we already include an explanation of experience, use and tests made on the stoves, we will try to emphasize on these points both in the PDD and demonstrations made in the communities.

C.5. Report on how due account was taken of any comments received and on measures taken to address concerns raised:

In our opinion, none of the comments, suggestions or questions effectively requires changes to our Programme design. With reference to the 4 technology suggestions, we consider it necessary to study and analyse the appropriateness with regard to the Gold Standard methodology, and the desires of our beneficiaries, before we could incorporate them into our Educational Component. If any of the technologies meet the criteria for inclusion, they could become part of separate VPAs and introduced through the beneficiary network established by our Environmental Well Being Squads.

The four technologies we will study are:

1. Generating small amounts of electricity with TEC or TEG modules, using the stoves as heat source (our preliminary observation is that it is not an eligible technology under the methodology we are using).
2. Bio char production and carbon sequestering (our preliminary observation is that it is not an eligible technology under the methodology we are using), possibly using TLUD combustion devices.
3. Community reforestation (our preliminary observation is that it is not an eligible technology under the methodology we are using), although the concept of reforestation and sustainable growth through caring for the forests and only using dead branches and sticks is already part of our educational program.
4. Sustainable agriculture via GMF proposal (our preliminary observation is that it is not an eligible technology under the methodology we are using).

We are extremely appreciative to everyone who read our Design consultation, especially those who took the time and trouble to respond with his or her very valuable comments and suggestions.

C.6. Discussion on continuous input/grievance mechanism:

Inclusion of the 'Continuous Input Mechanism':

In accordance with the GS rule update released on 22 November 2011, CEDESOL and myclimate established methods of continuous input. As part of the PoA Level-Feedback Round and in all future LSCs, stakeholders are informed, how the mechanism will be implemented.

The following options will be implemented:

	Method Chosen (location of book, phone number, identity of mediator…)	**Justification**
Continuous Input Process Book	Different open continuous input process books will be placed. One at CEDESOLs' Office in Cochabamba, others in every region participating the project.	
Telephone access	A telephone line is installed for questions and claims. Nr. 591 4 4028527	
Internet / email access	A specific page on CEDESOLs' Homepage will be installed, where users can fill out a form for questions and claims. http://www.CEDESOL.org./ In addition a specific email address	

	has been established to directly contact CEDESOL in terms of the project. reclamos@cedesol.org	

C.7. Report on stakeholder consultation feedback round at the PoA level:

Second Feedback Round

A Second Feedback Round was performed on the 27th of August 2013. We sent the final version of the PoA-DD_v1 and de VPA1-DD to all stakeholders invited for participation in the Consultation so that they can send us their feedback with any comment or suggestions about the Project.

The email contained the following information:

You are receiving this communication because you participated in previous virtual consultations concerning this project.

As you know CEDESOL Foundation and Myclimate Foundation of Switzerland, are developing the project "Ecological Stoves for Living Well". Our Program aims to improve quality of life of more than 50,000 families by combining technology with education, through the implementation of ecological stoves, jointly with environmental and well being training in Bolivia and Paraguay.

This project was first presented at the Local Stakeholders Consultation (LSC) held in Cochabamba on the 27.04.2011 under the Small-Scale Project. The first virtual consultation to inform about the LSC meeting and to review the design of the Project, held on the 26.07.2011.

We have used the default CDM non renewable biomass values because there is no public information to analyze in Bolivia or Paraguay, we have an agreement with the Gold Standard Evaluation Team that if the Designated National Authorities (DNA) comment on our Project, their comments will be taken into consideration.

We are pleased to inform all concerned of the upgrade of our Project to the Validation Stage for which we need to conduct another virtual Stakeholder Feedback round and therefore we invite you to be part on it.

In the updated PoA we have included a continuous input process as well as Grievance mechanisms included in the POA on page 44. We invite you to read the PoA as well as VPA 1 and VPA2, included as attachments. If you need to read the document in spanish, notify us.

Please respond to us at: cedesol_feedbackround_poa@cedesol.org or

Call to: +(591) 4-4412787

All your opinions, comments and ideas are welcome, but in order to be considered for the design review and to be formally included in the consultation report we submit to the Gold Standard please respond by September 10, 2013.

Thank you,

David E. Whitfield V.
Executive Director
CEDESOL
www.cedesol.org
skype – CEDESOL2

Usted está recibiendo esta comunicación, ya que participó en la anterior consulta virtual anterior, relativa a este proyecto.

Como usted sabe, tanto como la Fundación CEDESOL y Myclimate de Suiza, están desarrollando el proyecto "Cocinas Ecológicas para Vivir Bien". Nuestro programa tiene como objetivo mejorar la calidad de vida de más de 50.000 familias mediante la combinación de la tecnología con la educación, a través de la implementación de cocinas ecológicas, para mejorar el medio ambiente y la calidad de vida en Bolivia y Paraguay.

Este proyecto fue presentado por primera vez en la Consulta Local de las partes interesadas (LSC su sigla en inglés), realizada en Cochabamba en fecha 27.04.2011 en el marco del proyecto de pequeña escala. La primera consulta virtual fue para informar sobre la reunión de LSC y revisar el diseño del proyecto y se realizo en fecha 26.07.2011.

Estamos utilizado los valores de biomasa no renovable MDL por defecto debido a que no existe información pública para analizarlos tanto en Bolivia como en Paraguay, tenemos un acuerdo con el Equipo de Evaluación de la Gold Standard, que si las Autoridades Nacionales Designadas (DNA) comentan sobre nuestro proyecto, sus comentarios se tomaran en cuenta.

Tenemos el agrado de informar a todos los interesados del ascenso de nuestro proyecto a la etapa de Validación para lo cual se necesita llevar a cabo otra ronda de Consulta virtual, por lo que le invitamos cordialmente a ser parte de ella.

En el Programa de Acción actualizado, hemos incluido un proceso de entrada continua, así como los mecanismos de quejas incluido en el POA en la página 44. Le invitamos a leer el PoA y VPA 1 y VPA2, incluidos como anexos, si desearía leer los documentos en español, notificarnos a la brevedad posible.

Por favor háganos llegar su respuesta al correo: cedesol_feedbackround_poa@cedesol.org o

Llame al: + (591) 4-4412787

Todas sus opiniones, comentarios e ideas son bienvenidas, pero con el fin de ser considerados para la revisión del diseño y para ser incluidos formalmente en el informe de la Consulta a la Gold Standard, por favor responda hasta el 10 de Septiembre del 2013

Gracias,

David E. Whitfield V.
Director Ejecutivo

CEDESOL
www.cedesol.org
skype – CEDESOL2

To date we received five mails asking for translation of the PoA in Spanish from the following persons

Gracias sin embargo por favor si pudiera acceder al documento en cuestión en español quedare muy agradecido.
Atentamente,
Victor Colque

Thanks however please if you could access the present document in Spanish will stay very grateful.

Sincerely,

Victor Colque

Señores CEDESOL,

Solicito me puedan enviar el documento en idioma español.

Saludos cordiales,

Mauricio Iñiguez Berbety

Director del Departamento de Electromecánica

Universidad Privada del Valle

Srs. CEDESOL

I request you could send to me the document in Spanish.

Best regards,

Mauricio Iñiguez Berbety

Director del Departamento de Electromecánica

Universidad Privada del Valle

Interesada en participar en la consulta y obtener información de la aplicación de energías alternativas, solicito por favor los documentos en español

atentamente

Monica Torrico

Interested in participating in the consultation and obtaining information of the alternative energy application, please request documents in Spanish.

Best regards,

Monica Torrico

Buena tarde he leído el documento que envían y solicitaría mas información si es posible en español para poder apoyar en lo que esté a mi alcance,

Gracias.

Alberto Cárdenas C.

Coordinador Proyecto ECO Feria.

Fundación AGRECOL Andes

Good afternoon I read the document you sent and request more information if possible in Spanish in order to support as in my power,

Thank you.

Alberto Cárdenas C.

Coordinador Proyecto ECO Feria.

Fundación AGRECOL Andes

Estimados miembros de CEDESOL, ahora si en español me va a ser más fácil, leer y responder a esta consulta virtual,

Saludos cordiales

Maria Elena Ferrel

We haven't received any feedback and therefore we consider the Second Feedback Round closed. However in the future if there is any reply from the Designated National Authorities (DNA) from Paraguay or Bolivia, we will take into consideration in agreement with the Gold Standard Evaluation.

SECTION D. Application of an existing baseline and monitoring methodology or of a new methodology submitted as part of this micro-programme of activities

D.1. Title and reference of an approved baseline and monitoring methodology, or full description of a new methodology, applied to technologies or practices included in the PoA:

This Micro-scale PoA applies the approved Gold Standard Methodology 'Technologies and Practices to Displace Decentralized Thermal Energy Consumption' version 1 from 11/04/2011. Further named as GS TPDDTEC Meth. .

D.1.1 Justification of the choice of the methodology and why it is applicable to a considered technology or practice (s):

The chosen methodology applies the best to the type of activities proposed in the PoA, since we are focused on replacing traditional cooking energy sources with renewable energy and energy efficiency practices that will reduce GHG emissions more effectively. Besides, it adapts the best to the reality of the families in Bolivian rural areas. The following conditions apply:

- The project boundary can be clearly identified, and the technology counted in the programme is not included in another voluntary market or CDM project activity.
- A survey mechanism is in place.
- Each stove in the Baseline as well as in the Project has a continuous useful energy output of less than 150kW per unit; proven with available lab tests (all distributed technologies must be tested in the lab, see eligibility criteria above).
- Inefficient baseline technology will be removed, beneficiaries are encouraged to do so and explained during educational trainings. However, if a beneficiary uses e.g. gas (LPG) as an auxiliary technology, this device will not be removed but accounted inside the Surveys and Field Tests (see also D.6.1. Procedure for old Baseline stove).
- Emission Reduction ownership is transferred to CEDESOL when beneficiaries purchase the equipment and fill out the sales record.
- The project doesn't make use of a new biomass feedstock but reduces the demand on the already available biomass.

D.2. Title and reference of another approved baseline and monitoring methodology, or full description of a new methodology, applied to technologies or practices included in the PoA:

D.2.1 Justification of the choice of the methodology and why it is applicable to a considered technology or practice:

There is no other Methodology applied under this PoA than the one mentioned above in D.1.

D.3. Description of the sources and gases included in the VPA (s) boundary

D.3.1 Description of the sources and gases included in the technology or practice boundary

The greenhouse gases considered under this PoA and all its VPAs are the three gases considered by the GS TPDDTEC Meth V.01: CO2, CH4 and N20 emissions. For each VPA the same conditions are met as for the whole PoA described below.

	Source	Gas	Included?	Justification / Explanation
Baseline	Cooking	CO_2	Yes (for all VPAs)	Important source of emission. IPCC values will be applied.
		CH_4	Yes (for all VPAs)	Significant source of emission. IPCC values will be applied.
		N_2O	Yes (for all VPAs)	Significant source of emission. IPCC values will be applied.
	Transport of fuel	CO_2	No	To have a conservative approach, emissions from transport of fuel are excluded in the Baseline.
		CH_4	No	
		N_2O	No	
	Production of fuel	CO_2	No	To have a conservative approach, emissions from production of fuel are excluded in the Baseline.
		CH_4	No	
		N_2O	No	
	Transport of raw material	CO_2	No	To have a conservative approach, emissions from transport of raw material to build the old stoves are excluded in the Baseline.
		CH_4	No	
		N_2O	No	

	Source	Gas	Included?	Justification / Explanation
Project Scenario	Cooking	CO_2	Yes (for all VPAs)	Important source of emission. IPCC values have to be applied.
		CH_4	Yes (for all VPAs)	Significant source of emission. IPCC values will be applied.
		N_2O	(for all VPAs)	Significant source of emission. IPCC values will be applied.
	Transport of fuel	CO_2	No	Excluded as in the Baseline. Conservative approach, because less fuel is used in the project scenario.
		CH_4	No	
		N_2O	No	
	Production of fuel	CO_2	No	Excluded as in the Baseline. Conservative approach, because less fuel is used in the project scenario.
		CH_4	No	
		N_2O	No	
	Transport of raw material	CO_2	No	Excluded, since negligible.
		CH_4	No	
		N_2O	No	

D.4. Description of how the baseline scenario is identified and description of the identified baseline scenario for technology(ies) or practice(s):

D.4.1 Description of how the baseline scenario is identified and description of the identified baseline scenario for each type of technology or practice:

In populations most in need, e.g. communities with wood as a primary fuel, where this programme focuses, firewood is the most commonly used energy source for cooking. The wood is either collected individually from forests, mostly by women and children, or bought from traders. These traders collect the wood from the forests and take it to the villages, tied into bundles. In Bolivia and Paraguay, LPG gas in some cases is also used in combination with wood fuel, but then it is primarily used as an auxiliary to heat water for breakfasts, teas, etc., while wood fuel is used for the actual cooking. In urban and peri-urban areas, wood fuel is still used but the bulk of cooking is done with LPG gas. The majority of people have an alternative fuel source, since there are often shortages of LPG bottled gas. (see also section A.4.3.1 Introduction on assessment and demonstration of additionality for the PoA).

The assessment of the Baseline follows the guidance of the TPDDTEC Meth. For all different types of technologies under this PoA the Baseline Situation is expected to mainly consist of non-renewable biomass (NRB) consumption. However the Baseline can vary significantly in the fuel amounts

consumed per unit depending whether the buyer is a rural or more urban family or an institution (school) or a commercial client (restaurant). Also the LPG fraction is diverse in different regions. So it is expected to have different baseline scenarios in different VPAs.

With the help of a Baseline field survey the situation in every VPA will be assessed and analyzed to understand the target population characteristics and to create Baseline scenarios with similar patterns.

For each of these Baseline scenarios quantitative Field Tests will then be conducted to evaluate the amounts of fuels consumed before the first project verification. Different Baseline Scenarios will be added to the PoA during its lifetime. The fraction of non-renewable-biomass is derived from CDM default[28] values for Bolivia and Paraguay.

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

D.5.1. Assessment and demonstration of additionality for a typical technology or practice:

Additionality is demonstrated on PoA Level, see above. On VPA Level, according to the Gold Standard Micro Scale Rules the additionality can be seen as given for all voluntary project activities VPAs under this PoA since the following conditions are met:

- Additionality is demonstrated at PoA Level
- Bolivia and Paraguay are Land Locked Developing Countries.
- Each stove has a thermal output below 150kW per unit.
- The project focusses on poor communities (however this will not be verified and is not an eligibility criterion).

D.5.2. Key criteria and data for assessing additionality of a technology or practice:

The following two conditions have to be met for every VPA under this PoA:

- The VPA is inside the PoA boundary of Bolivia and Paraguay.
- Each distributed stove or equipment has a thermal output below 150 kW per unit.

[28] CDM Small Scale Working group, meeting 37 annex 14, ssc_37_an14.pdf

D.6. Estimation of Emission reductions of technology(ies) or practice(s):

D.6.1. Explanation of methodological choices, provided in the baseline and monitoring methodology applied, selected for a technology or practice:

As described above this PoA follows the guidance of the GS TPDDTEC methodology.

Sales Record

CEDESOL maintains an accurate and complete sales record combining all distributed stoves under this PoA. The record is backed up electronically and follows the guidance of the methodology.

Lab tests

Every stove type considered under this programme has to be tested in a national certified stove laboratory. The lab CEDESOL works with is located in La Paz Bolivia and is a recognized regional laboratory for stove testing certified by the Partnership for Clean Indoor Air, GIZ and participates in the testing program of the Global alliance for Clean Cook stoves adhering to the international standards agreed upon at the Hague in February 2012. The stoves are submitted to Water Boiling Tests, Safety Tests, Emissions mediation, as well as other protocols. CEDESOL also has separate independent objective tests conducted to determine outputs from Controlled Cooking Tests (CCTs).

Field Surveys

With the help of qualitative field surveys CEDESOL and myclimate define different baseline and project scenarios. Similar groups with similar behaviours concerning fuel consumption, applied technology, country or other, form together one scenario. The baseline and project surveys are carried out for each possible scenario using representative and random sampling, following the guidelines of the methodology the sample sizes are:

- Group size <300: Minimum sample size 30 or population size, whichever is smaller
- Group size 300 to 1000: Minimum sample size 10% of group size
- Group size > 1000: Minimum sample size 100

Scenarios

For this PoA, expected scenarios are (this list is not closed and can be changed, shortened or extended):

Baseline Scenarios:

- Families cooking with traditional inefficient cook stoves. Domestic Baseline.
- Schools, restaurants or canteens cooking with inefficient stoves. Institutional Baseline.

Project Scenarios:

- Families cooking with efficient rocket stoves and RHC practices. Domestic rocket stove project scenario.
- Families cooking with solar stoves and RHC practices. Domestic solar stove project scenario.
- Schools, restaurants or canteens cooking with solar stoves and RHC practices. Institutional solar stove project scenario.
- Schools, restaurants or canteens cooking with efficient rocket stoves and RHC practices. Institutional rocket stove project scenario.

PoA evolution, VPAs

The PoA starts in Bolivia with one project scenario mentioned above. During its lifetime, more scenarios will be added, also in Paraguay. To keep the overview, every different technology applied in a specific country under this PoA shall form a separate VPA. A possible evolution of the PoA could look as described under A.2.1.

Assessment of Non-renewable Biomass

An NRB Assessment following the rules of the GS TPDDTEC Meth is not needed for Bolivia and Paraguay, since these two countries belong to the group of nations with less than ten registered CDM projects, meaning default values exist (see CDM Small Scale Working group, meeting 37 annex 14, ssc_37_an14.pdf). The same NRB fraction for the baseline and the project scenarios are applied for the whole PoA.

- fNRB Bolivia: 84%
- fNRB Paraguay: 92%

To justify these values a national governmental proof (by the Designate National Authority, DNA) is needed according Gold Standard rules. CEDESOL tried to get this confirmation from both responsible countries Bolivia and Paraguay. However, for Bolivia the chance for governmental approval is very low, since the country does not accept the CDM and does not have an operating DNA. Also for Paraguay, reaching the DNA turned out to be very difficult. Thus, Gold Standard proposed to have the value revised by stakeholders: CEDESOL will discuss this issue during Stakeholder Consultation Feedback round on PoA Design Level. This includes a renewed contacting of both DNAs.

Quantitative Performance Field Tests

For every scenario CEDESOL performs quantitative performance field tests for a representative sample of the group before the first verification of a specific VPA, to measure the fuel consumption per family or institution. Different VPAs can use the same scenario if applicable, e.g. same baseline for rocket and solar stoves.

Adjustment factors

If significant differences in the fuel consumption inside a scenario are discovered, e.g. between restaurants and schools or if a family purchases a solar stove in addition to a rocket stove, adjustment factors will be applied.

LPG use

In principal the PoA focusses on users consuming non-renewable biomass as a primary fuel. However the PoA is open for LPG users. If, and how, LPG use is accounted, is defined on VPA Level for every specific VPA. Every VPA can choose between the following options:

a) Users that get an improved kitchen device and consume LPG in the project scenario, are excluded from the VPA, any resulting Emission Reduction also from reduced NRB consumption will not be accounted.
b) LPG consumption in the project scenario is eligible for the VPA but not accounted. In this case it has to be significantly demonstrated with Field Surveys that users consume less LPG in the project than before the project. However Emissions Reductions resulting from a decreased consumption of LPG will not be considered in the ER calculation.
c) LPG consumption is accounted. Specific LPG scenarios will be established for the baseline and the project case, leading to needed measurements of the LPG consumption with the help of performance field tests.

Procedure for old Baseline stove

Beneficiaries will be asked to but not be forced to destroy their old stoves when purchasing a new more efficient one. We think it is not in our position to do so. However families will be trained about the benefits of the new technology and its positive impacts on health, energetic consumption, smoke and more in CEDESOLs environmental programme. So the goal of the programme is that participants disclaim the old technology on a voluntary base. Anyway, if old stoves are still in use during the project this will be included in the Field Tests and thus accounted in the Emission Reduction calculation.

Leakage assessment

CEDESOL and myclimate investigated the following potential sources of leakage on PoA Level (to be done for all VPAs) described in the TPDDTEC meth. based on field survey results and experience:

L1) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.

→ Not possible: the base line kitchen equipment needs to be destroyed before it can be removed (fixed installation of adobe bricks or three stone fire).

L1 = 0

L2) The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources.

→ Not reasonable: Similar baseline for neighbouring families, so no fuel switch is possible due to the project.

L2 = 0

L3) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.

→ Not realistic: The project boundary is too big to have influence on the NRB fraction on a national scale. However, locally some variations are expected.

L3 = 0

L4) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.

→ Negligible. In the project region, stoves are mainly integrated in the kitchen and not in the living room. Based on CEDESOL experience beneficiaries don't use stoves as a heating device. Furthermore as an outcome of the first Kitchen Survey for VPA1 it could be demonstrated that only 2.2% of the beneficiaries used their old stove for heating purposes.

L4 = 0

L5) By virtue of promotion and marketing of a new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline

→ Not possible: As described under D.4.1 the existing Baseline Scenario is an inefficient kitchen equipment. There is currently almost no technology used that is more efficient than the stoves distributed by the project.

L5 = 0

The result of the leakage assessment is that no potential source of leakage could be found at PoA Level that would lead to significant emissions. Therefore:

$L = \sum L_i = 0$

D.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a technology or practice:

A Kitchen Performance Test as described in Annex 4 of the GS TPDDTEC Meth has to be applied for all baseline and project scenarios of this PoA latest before the first verification of a specific VPA, either by a representative paired or independent (unpaired) sampling. Statistical analysis following the guidelines of the methodology of the test results shall lead to the specific fuel consumption per family or institution. Over the project period the results are updated and adjusted depending on results of the on-going monitoring studies.

Emission reductions are calculated comparing the emissions for a given project scenario to the emissions for the applicable baseline scenario. Multiple project scenarios can be credited in comparison to different baseline scenarios, and multiple project scenarios can be credited in comparison to the same baseline scenario.

Following the methodology, since the baseline fuel and the project fuel are the same for every

baseline-project couple under this PoA the following equation is applied to calculate the emission reduction:

$$ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,\,fuel} * (f_{NRB,b,y} * EF_{fuel,\,CO2} + EF_{fuel,\,nonCO2})) - \sum LE_{p,y}$$

Where:

$\sum_{b,p}$	Sum over all relevant (baseline b/project p) couples
$N_{p,y}$	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y
$U_{p,y}$	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)
$P_{p,b,y}$	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests
$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario)
$NCV_{b,fuel}$	Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)
$EF_{b,fuel,CO2}$	CO_2 emission factor of the fuel that is substituted or reduced. 112 tCO_2/TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel
$EF_{b,fuel,nonCO2}$	Non-CO_2 emission factor of the fuel that is reduced
$LE_{p,y}$	Leakage for project scenario p in year y (tCO_2e/yr)

D.6.3. Data and parameters that are to be reported in VPA-DD form for a technology or practice:

Data / Parameter:	$NCV_{b,fuel}$
Data unit:	TJ/ton
Description:	Net calorific value of woody biomass
Source of data used:	IPCC default, GS TPDDTEC Meth.
Value applied:	0.015
Justification of the choice of data or description of measurement methods and procedures actually applied :	The default value proposed in the Methodology is applied, since this value seems to be most appropriate for a Micro Scale Programme.
Any comment:	

Data / Parameter:	$EF_{b,fuel,CO2}$
Data unit:	tCO2/TJ
Description:	CO2 emission factor for Wood
Source of data used:	GS TPDDTEC Meth.
Value applied:	112
Justification of the choice of data or description of measurement methods and procedures actually applied :	The default value proposed in the Methodology is applied, since this value seems to be most appropriate for a Micro Scale Programme.
Any comment:	

Data / Parameter:	$EF_{b,fuel,nonCO2}$
Data unit:	tCO2/TJ
Description:	Non_CO2 emission factor of the fuel that is reduced.
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol.2 Energy, Chapter 2, Stationary Combustion, Table 2.5
Value applied:	9.592
Justification of the choice of data or description of measurement methods and procedures actually applied :	Default IPCC values for CH_4 and N_20 emissions for wood / wood waste, are applied. The following GWP100 are applied: 25 for CH_4, 298 for N_20 EF_wood_CH_4= 0.3tCH4/TJ EF_wood_N_2O = 0.004tN2O/TJ
Any comment:	

Data / Parameter:	$f_{NRB, Bolivia}$
Data unit:	
Description:	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass.
Source of data used:	CDM Small Scale Working group, meeting 37 annex 14, ssc_37_an14.pdf
Value applied:	84%

Justification of the choice of data or description of measurement methods and procedures actually applied :	To justify this value a national governmental proof (by DNA) is needed according Gold Standard rules. CEDESOL tried to get this confirmation. However, for Bolivia the chance for governmental approval is very low, since the country does not accept the CDM and does not have an operating DNA. Thus, Gold Standard proposed to have the value revised by stakeholders: CEDESOL discusses this issue during Stakeholder Consultation Feedback round on PoA Design Level. This includes a renewed contacting of both DNA.
Any comment:	

Data / Parameter:	$f_{NRB, Paraguay}$
Data unit:	
Description:	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass.
Source of data used:	CDM Small Scale Working group, meeting 37 annex 14, ssc_37_an14.pdf
Value applied:	92%
Justification of the choice of data or description of measurement methods and procedures actually applied :	To justify this value a national governmental proof (by DNA) is needed according Gold Standard rules. CEDESOL tried to get this confirmation. However, for Paraguay, reaching the DNA turned out to be very difficult. Thus, Gold Standard proposed to have the value revised by stakeholders: CEDESOL discusses this issue during Stakeholder Consultation Feedback round on PoA Design Level. This includes a renewed contacting of both DNAs.
Any comment:	

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

D.7.1. Data and parameters to be monitored by each technology or practice:

Data / Parameter:	$N_{p,y}$
Data unit:	days
Description:	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y
Source of data used:	Sales record
Value of data applied for the purpose of calculating expected emission reductions	See relevant spread sheet

Description of measurement methods and procedures to be applied:	Project days per year are counted for each distributed improved kitchen devise inside the project database (derived from sales record).
QA/QC procedures to be applied:	CEDESOL performs the data collection and puts the data into the sales record. myclimate revises and analyses this data.
Any comment:	

Data / Parameter:	$U_{p,y}$
Data unit:	
Description:	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)
Source of data used:	Usage survey
Value of data applied for the purpose of calculating expected emission reductions	See estimations in relevant spread sheet.
Description of measurement methods and procedures to be applied:	See description of monitoring plan below 1b) 'On-going Monitoring Studies'
QA/QC procedures to be applied:	CEDESOL performs the data collection and puts the data into the project database. myclimate revises and analyses this data.
Any comment:	

Data / Parameter:	$P_{p,b,y}$
Data unit:	tons/day
Description:	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, as derived from the statistical analysis of the data collected from the field tests
Source of data used:	Quantitative Performance Field Tests and Project Field Test.
Value of data applied for the purpose of calculating expected emission reductions	See estimations in relevant spread sheet.

Description of measurement methods and procedures to be applied:	See description of monitoring plan below: - Field Tests - Prior to first Verification - 'Project Field Test (PFT) Update'
QA/QC procedures to be applied:	CEDESOL performs the data collection and puts the data into the project database. myclimate revises and analyses this data.
Any comment:	

Data / Parameter:	$LE_{p,y}$
Data unit:	tCO_2e/yr
Description:	Leakage for project scenario p in year y
Source of data used:	Leakage assessment on VPA Design Level
Value of data applied for the purpose of calculating expected emission reductions	0, see Leakage assessment in this PoA DD under D 6.1.
Description of measurement methods and procedures to be applied:	see Leakage assessment in this PoA DD under D 6.1, performed for every VPA.
Any comment:	

D.7.2. Description of the monitoring plan for a technology(ies) or practice(s):

D.7.2.1 Description of the monitoring plan for a technology or practice:

The monitoring plan follows the guidelines of the Monitoring Methodology in Section III of the applied GS TPDDTEC Meth.

Total Sales Record

A sales form is filled out of every delivered improved cooking device. Beside required personal data as explained in the TPDDTEC Meth. on page 22, further data in terms of fuel consumption is collected already at this stage to get a first impression of the specific behavior. A total sales record and project database are maintained continuously. For more information see also A.4.4.1 and the sales form attached in Annex 3.

Project Database

The project database is derived from the total sales record with project technologies differentiated by different project scenarios. The differentiation of the project database into sections is based on the

results of the applicable monitoring studies for each project scenario, in order that ER calculations can be conducted appropriately section by section Technologies aged beyond their useful lifetime, as established in the usage survey, are removed from the project database and no longer credited.

Field Tests - Prior to first Verification

Prior to first Verification a Baseline Field Test and a Project Field Test shall be performed once for every Baseline Scenarios and for every Project Scenarios to define the average fuel savings for every improved kitchen device distributed. Paired sampling shall be applied whenever possible.

Ongoing Monitoring Studies

The following on-going monitoring studies are conducted for each project scenario following first verification of the associated initial ex-ante project studies. These monitoring studies investigate and define parameters that could not be determined at the time of the initial project studies or that change with time.

1a) Monitoring Survey (including Usage Survey) –

Completed annually, beginning 1 year after project registration.
The monitoring survey investigates changes over time in every project scenario (and in a baseline scenario in case renewal of crediting period), by surveying end users with improved stoves on an annual basis. It provides critical information on year-to-year trends in end user characteristics such as technology use, fuel consumption and seasonal variations.

Monitoring Survey Representativeness:
End users from a given project scenario are selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. Common sampling approaches such as clustered random sampling are allowed and geographic distribution should be factored into selection criteria. End users can be surveyed at any time throughout the year with care taken to collect information pertaining to seasonal variations in technology and fuel use patterns.

Monitoring Survey sample sizing and data collection:
The Sample Size of every Monitoring Survey is the same as for the Baseline ex-ante Field Surveys described above in section D.6.1. However, the monitoring surveys are only conducted with end users representative of the respective project scenario, currently using the project technology (except for the case of a renewal of the crediting period of the first VPA which requires a re-assessment of the baseline). Monitoring surveys are conducted in combination with usage survey participants (see below).

Group size <300: Minimum sample size 30 or population size, whichever is smaller
Group size 300 to 1000: Minimum sample size 10% of group size
Group size > 1000 Minimum sample size 100

1b) Usage Survey (part of Monitoring Survey) –

Completed annually, or more frequently, and in all cases on time for any request of issuance as part of Monitoring Surveys.

The usage survey provides a single usage parameter that is weighted based on drop off rates that are representative of the age distribution for project technologies in the total sales record.

A usage parameter must be established to account for drop off rates as project technologies age and are replaced. Prior to a verification, a usage parameter is required that is weighted to be representative of the quantity of project technologies of each age being credited in a given project scenario. For example, if only technologies in the first year of use (age0-1) are being credited, a usage parameter must be established through a usage survey for technologies age0-1. If an equal number of technologies in the first year of use (age0-1) and second year of use (age1-2) are credited, a usage parameter is required that is weighted to be equally representative of drop off rates for technologies age0-1 and age1-2.

The minimum total sample size is 100, with at least 30 samples for project technologies of each age being credited. The majority of interviews in a usage survey must be conducted in person and include expert observation by the interviewer within the kitchen in question, while the remainder may be conducted via telephone by the same interviewers on condition that in kitchen observational interviews are first concluded and analysed such that typical circumstances are well understood by the telephone interviewers.

The usage survey will establish a useful lifetime for technologies after which they are removed from the project database and no longer credited.

2) Project Field Test (PFT) Update –

Completed every other year, or more frequently.
The PFT update is an extension of the project PFT and provides a fuel consumption assessment representative of project technologies currently in use every two years. Hence the PFT update accounts for changes in the project scenario over time as project technologies age and new customers are added, also as new models and designs are introduced. It is legitimate to apply an Age Test instead of a PFT, to project technologies which remain materially the same year after year.

3) Baseline FT Update –

In this PoA a fixed baseline is adopted. Baseline Field Test is update for every seven year (renewal of first VPA crediting period).

4) Leakage Re-Assessment –

Leakage is reassessed every two years for every VPA.

5) Non-Renewable Biomass Assessment Update

Completed if new CDM default values are published.

Sustainable Development Monitoring Plan

The SD monitoring is discussed inside the GS approved GS Passport from 10 November 2011 for this programme (including a discussion with Stakeholders, that goes beyond the GS requirements for Micro

Scale Programs). The 'Do no harm assessment' and the 'Sustainable Development Assessment' are still the same for this Micro Scale PoA as they were before for the Standard GS VER Project.

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

18 October 2013

David Whitfield, CEDESOL

Martin Jenk, myclimate

Annex 1

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

Organization:	Fundación CEDESOL
Street/P.O.Box:	Calle Mercedes Anaya N° 100
Building:	
City:	Cochabamba
State/Region:	Cochabamba
Postfix/ZIP:	Casilla 738
Country:	Bolivia
Telephone:	(591-4) 4028527
FAX:	
E-Mail:	info@cedesol.org
URL:	www.cedesol.org
Represented by:	David Whitfield
Title:	Executive Director
Salutation:	
Last Name:	Whitfield
Middle Name:	Eugene
First Name:	David
Department:	
Mobile:	591 77900868
Direct FAX:	
Direct tel:	
Personal E-Mail:	david@cedesol.org

Organization:	Foundation myclimate – The Climate Protection Partnership
Street/P.O.Box:	Sternenstrasse 12
Building:	
City:	Zürich
State/Region:	Zürich
Postfix/ZIP:	8002
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E-Mail:	projects@myclimate.org
URL:	www.myclimate.org
Represented by:	Martin Jenk
Title:	Project Manager

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Last Name:	Jenk
Middle Name:	
First Name:	Martin
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Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	martin.jenk@myclimate.org

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Project Owner: CEDESOL

Cochabamba, 13 de marzo de 2012

Project reference: GS 1050- Ecological Stoves for a Better Life.

To: Gold Standard Foundation

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

CEDESOL:

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

David Whitfield, Executive Director of CEDESOL:

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

I. Gold Standard Documentation

I am familiar with the provisions of Gold Standard Documentation relevant to Official Development Assistance (ODA). I understand that the above-referenced project is

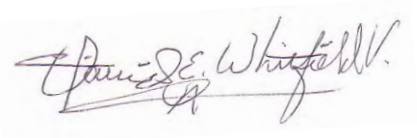
not eligible for Gold Standard registration if the project receives or benefits from Official Development Assistance under the condition that some or all credits coming out of the project are transferred to the ODA donor country. I now expressly declare that no financing provided in connection with the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

II. Duty to Notify Upon Discovery.

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

III. Sanctions.

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

Signed: 

Name: David Whitfield

Title: Executive Director

On behalf of: CEDESOL

Annex 3

SALES FORM

CEDESOL
CENTRO DE DESARROLLO EN ENERGÍA SOLAR

Croquis de Ubicación

N

Como beneficiario declaro, que gracias al subsidio de _____ y como condición de ser beneficiado con dicho subsidio, declaro que:

- **he recibido una sola cocina ecológica para mi familia, en perfectas condiciones**
- **he sido capacitado para el uso y mantenimiento de mi nueva cocina**
- **me comprometo a proveer información requerida por el proyecto**
- **acepto formar parte del Programa Modular de Capacitación Ambiental (PMCA)**
- **haré uso de la cocina para mejorar mi calidad de vida**
- **me comprometo a armar e instalar mi cocina en el lapso de una semana, desde la fecha de compra y usarla por lo menos tres veces por semana**
- **las reducciones de emisiones de gases del efecto invernadero que resultan del uso de esta cocina están asignados para el uso exclusivo de CEDESOL**

Nombre del beneficiario:

_____

Firma:

_____

Fecha: __/__/__ Carnet:_____

Dirección:	Que combustible es **más usado**: LENA GAS OTRO
Barrio/Cantón: / Departamento:	Cuanto cuesta el combustible que usa (en Bs.) Leña: Gas:
Municipio:	**Si usas leña principalmente**, Quién recoge la leña: PAPÁ MAMÁ HIJOS ABUELOS
Teléfono:	En esta caso, Cuanto tarda en buscar leña en (horas): 1 1½ 2 2½ 3 3½ 4 4½ 5 6 8 10 1 DIA
Asociación - sindicato - OTB:	Si es su combustible principal, Cuanto kilos de leña usa por semana: < 20 26 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 >
Número de miembros en su familia (que coman en su casa):	Cuanto garrafas de gas usa por mes 1 2 3 4 5 6
Número de hijos menores de cinco años (que coman en su casa):	Tipos de combustible que usa: BOSTA MARLOS HOJAS RAMAS TRONCOS MADERAS
Número de serie de la cocina:	**Toman agua hervida:** SÍ NO ..y procedencia de agua: POZO ARROYO RÍO VERTIENTE GRIFO OTRO
Modalidad de Beneficiación	**Cual de las Cocinas Ecológicas escogiste**
Organización — CEDESOL SOBRA LA ROCA OTRO	Cocina a **leña** ARMADA SEMIARMADA SOPORTE AISLANTE
¿Recibiste capacitación en el uso y mantenimiento?	Cocina **solar** STANDARD GRANDE SIN ARMAR
Recibió la Capacitación SÍ NO / La Capacitación fue BUENA MALA	**Uso** de la cocina: DOMÉSTICO COMERCIAL INSTITUCIONAL
Observación:	

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English version

CEDESOL
CENTRO DE DESARROLLO EN ENERGÍA SOLAR

Stove location map

N

As stated beneficiary, declare that thanks to grant of _____ and as a condition to be benefited from the subsidy, I declare that:

• I received only one ecologic cooker for my family, in perfect conditions
• I have been trained to use and maintain my new stove
• I agree to provide information required by the Project
• I agree to be part of the Modular Environmental Training (MET)
• I will use the stove to improve my quality of life
• I pledge to build and install my stove in one week from the date of purchase and use it at least three times a week
• The emission reductions of greenhouse gases resulting from the use of this stove are assigned for the exclusive use of CEDESOL

Name of beneficiary:

_____

Signature:

_____

Date: __/___/___ ID:_____

Address:	Wich fuel is **most used**: FIREWOOD GAS OTHER
Neighborhood /County: / Departament:	How much cost the fuel that you use (in Bs.) Firewood : Gas:
Municipality:	**If you use primarily firewood**, who collects firewood: FATHER MOTHER CHILD GRANDPARENTS
Phone number:	In this case, how long it takes to get wood in (hours): 1 1½ 2 2½ 3 3½ 4 4½ 5 6 8 10 1 DAY
Asociation – Union OTB:	If it is your main fuel, how many kilograms of firewood you use per week: < 20 26 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 >
Number of members of your family (that eat in your house):	How many gas bottles used per month 1 2 3 4 5 6
Number of children under five years (to eat at home):	Tipes of fuel you use: BOSTA MARLOS LEAVES BRANCHES LOGS WOODS
Serial number of the stove:	**Drink boil water:** YES NO …and waterborne: PIT STREAM RÍVER SHED TAP OTHER
Way of Beneficiation:	**Which of the Ecological Stoves you chose:**
Organization --- CEDESOL SOBRA LA ROCA OTHER	Rocket Stove (**firewood**) ARMADA SEMIARMADA SOPORTE AISLANTE
Did you receive training in the use and maintenance?	**Solar** Stove STANDARD BIG WITHOUT ARM
Training received YES NO / The training was GOOD BAD	**Use** of the stove: DOMESTIC COMERCIAL INSTITUTIONAL
Observations:	

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