Gold Standard Passport

CONTENTS

SECTION A. Project Title

Enhanced distribution of efficient wood stoves in Honduras

SECTION B. Project description

The objective of this application to The Gold Standard Foundation is to create a fuel-efficient stove building project that utilizes carbon finance to provide a market based financial solution to address the problems of deforestation, indoor air pollution, global warming and slow economic development in rural Honduras. If successful in securing The Gold Standard certification, this project can serve as a model for other stove projects by monetizing certified carbon savings, as well as greatly accelerate the dissemination of fuel-efficient stoves in rural Central America where degraded conditions of forests, indoor air pollution and rural poverty exceed acceptable levels.

In 2004, Overlook International Foundation (OIF), a U.S.-based 501(c)3 corporation, and Proyecto Mirador LLC (PM), its registered Honduran Affiliate managed by Doña Emilia Giron de Mendoza, initiated a program to reduce indoor air pollution by disseminating improved wood stoves called "La Justa" (see **Figure 1** below) in and around the town of Atima, in the highlands of Western Honduras in Santa Barbara Province. The La Justa was pioneered by the Aprovecho Research Lab and was engineered to burn hotter and use 1/2 to 1/3 the wood of traditional *fogon* stoves (see **Figure 2** below), thus reducing the time devoted to wood collection and/or money spent on wood. The La Justa efficiently vents smoke outside of the house, helping to prevent respiratory and other illnesses caused by exposure to toxic gases and excessive particulate matter emitted by burning wood. Since inception in early 2004 PM has installed over 5,500 stoves for individual families, built an efficient organization, and overcome the challenges of executing a successful stove project.

Figure 1: New La Justa stove **Figure 2: Traditional *fogon* stove**

Honduras is one of the poorest countries in the world, with over half the population living below the poverty level and 65% considered impoverished by USAID standards. About 74% of Honduras' poor and 86% of the extremely poor live in rural areas. Rural population densities are high (~100 people per km2). There are numerous small-scale farms and a fairly high number of officially landless tenant farmers. These farmers tend to cut wood on less efficient land for household fuel use. Honduras also contains the second-largest rainforest in the Americas next to the Amazon, and the widespread deforestation of rural Honduras is a significant contributor to global climate change. The area in which PM operates falls within the Western Honduran highland region: upland areas fall within the Central American Pine Forest ecoregion and lowland areas are composed of tropical dry forests. Very limited tropical dry forest remains; it is a threatened tropical ecosystem. Woodcutting for private use, primarily cooking, contributes significantly to deforestation as well as the problem of indoor air pollution.

In rural Honduras the traditional *fogon* cookstove is a significant cause of respiratory illness such as asthma, emphysema and lung cancer. According to Daniel Kammen, Professor of Energy and Resources at the University of California at Berkeley and Director of the Renewable and Appropriate Energy Laboratory, "One-third of the world's population -- almost two billion people -- use wood, charcoal, dung or crop residue as cooking fuel, which is an important cause of respiratory illness, one of the most common diseases worldwide." The World Health Organization's *World Health Report 2002* indicates that over 1.6 million people die annually as a direct result of indoor air pollution, mainly caused by cooking fires in their homes (WHO, 2002).

PM donates to each beneficiary the steel cooktop (*plancha*), the chimney and chimney top, and the six custom ceramic pieces for the stove mouth or firebox, and the installation and training. These components are sourced and processed or manufactured locally in Santa Barbara Province. Beneficiaries contribute the remaining components, including cement, rebar, bricks, adobe blocks, wood ash, all of which are common items available in all villages of Honduras. This cost-sharing arrangement is part of PM's philosophy of *"No Cuesta, No Cuida,"* which asserts that beneficiaries will better care for their donated stove if they invest some of their own resources in its acquisition.

The stoves are so successful from the perspective of health improvement and wood savings that PM seeks to build even more stoves in Santa Barbara and surrounding provinces in 2009 and beyond. The current model of charity underwriting the organization is not sustainable. Long-term and stable funding does not exist for the significant expansion of stove distribution. In the current economic climate, seeking additional donors is not a viable long-term option. In the long run, the utilization of carbon finance is a realistic source of sustainable funding that will enable the enhanced distribution of La Justa stoves to proceed. PM is planning to market Gold Standard carbon credits from verified reductions of unsustainably harvested fuel wood in order to provide long-term, sustainable funding.

PM will use proceeds from the sale of Gold Standard premium carbon credits from stoves installed from 1 May 2009 forward to supplement the limited charitable contributions it currently has available to fund the stoves. With the help of carbon finance PM will accelerate distribution of La Justa stoves by installing 3,500 stoves in 2009 and even more in following years. The use of carbon finance will enable the business model to transform itself from a system of distribution based on charitable donations to one that is self-sustaining and market driven.

La Justa stoves reduce emissions of greenhouse gases (GHG) that are causing the earth's average temperature to rise to dangerous levels. A field study was conducted by Rob Bailis, PhD, author of the Kitchen Performance Test (the Gold Standard baseline methodology for cookstoves,

hereinafter referred to as "KT"), and an assistant professor at the Yale School of Forestry and Environmental Studies (FES), in June and July of 2007. This study, hereinafter referred to as the "2007 Yale Study," showed that the replacement of one traditional *fogon* stove with one La Justa stove reduces greenhouse gas (GHG) emissions by between 1.2 and 1.7 $mtCO_2e$/year.

Since the 2007 Yale Study, PM has made additional design improvements to the original La Justa stove with assistance from Aprovecho Research Lab. The Aprovecho Lab studies methods for designing, building, and disseminating cooking and heating technology that is made from vernacular (locally available) low cost materials that can be found easily in the towns and villages where improved stoves are needed.

The improved model of La Justa stove is called the "La Justa Model 2x3" and is the model covered in this PDD. The La Justa Model 2x3 includes a few important structural modifications: First, the grate in the stove mouth has been raised slightly in order to raise the fuel off the stove floor, thus making the wood burn more thoroughly and efficiently. Second, the dimensions of the steel cooktop *(plancha)* have been changed, allowing the *plancha* to heat up faster and distribute the heat more evenly than before. In addition, the *plancha* has been lowered closer to the level of the wood ash insulation in order to use the fire power of the stove more efficiently. From the user's point of view the La Justa Model 2x3 is functionally the same stove and PM staff have observed that it has been positively received by recipients.

Figure 3 below shows the original La Justa stove; **Figure 4** shows the La Justa Model 2x3 which PM has adapted to maximize emissions reductions and support broader dissemination of the stoves.

Figure 3: Original La Justa stove

Figure 4: La Justa Model 2x3 stove

A study completed by Nordica MacCarty of Aprovecho Research Lab on April 28, 2009 has shown that the La Justa Model 2x3 generates even greater wood savings than the original La Justa. Using the La Justa Model 2x3, CO_2 emissions are reduced by 1.9 $mtCO_2e$/year.

A second Yale study was conducted in 2009 (hereinafter referred to as the "2009 Yale Study") in order to analyze the fuel mix affecting the project area and specifically determine the rate of Non-Renewable Biomass (NRB) affecting the project area. The 2009 Yale Study was supervised by Rob Bailis of FES, with field research conducted by Ian Cummings of FES. The results of that study are discussed later in this PDD under section B.4.

A recent New York Times article stated that black carbon (soot) is "emerging as a major and

previously unappreciated source of global climate change" (Rosenthal, April 16, 2009), and household cookstoves are a major source of this soot. Rosenthal goes on to report, "Replacing primitive cookstoves with modern versions that emit far less soot could provide a much needed stopgap while nations struggle with the more difficult task of enacting programs and developing technologies to curb carbon dioxide from fossil fuels."

The New York Times is not alone in identifying soot as a major environmental issue. In her research paper "A Laboratory Comparison of the Global Warming Impact of Five Major Types of Biomass Cookstoves" (*Journal of Energy for Sustainable Development,* June, 2008), Nordica McCarty wrote:

> An August 2007 headline in the online *BBC News* stated, "Clouds of pollution over the Indian Ocean appear to cause as much warming as greenhouse gases released by human activity (BBC, 2007)." These clouds are composed primarily of soot, or black carbon particles. A similar article found in *Scientific American* stated, "The dominant source for all this black carbon is cooking fires" (Biello, 2007). Further, studies are showing that the soot particles that enhance solar absorption by snow and ice are contributing to the ice melt in the Himalayas and the retreat of Arctic sea ice (Flanner et al., 2007).

When wood burns it releases a number of compounds into the atmosphere, including CO_2, methane, nitrous oxides, and particulate matter consisting of both elemental carbon (or soot) produced in flaming fires and organic carbon produced in smouldering fires. Elemental carbon (EC) has a global warming potential 680 times that of CO_2 *(Ibid.)*. By burning fuel efficiently and completely, the La Justa reduces the amount of soot or black carbon found in Particulate Matter (PM) and Products of Incomplete Combustion (PICs) as well as reducing the amount of PM and PICs produced overall.

Globally, indoor air pollution kills more people each year than malaria and causes almost as many deaths as unsafe water and sanitation (*Smoke, the Killer in the Kitchen,* WHO 2004). In traditional wood burning stoves, wood fuel emits substantial amounts of 26 hazardous air pollutants. Fine respirable particles less than 2.5 microns are able to penetrate deep into the lungs. These compromise the body's defense systems and its ability to filter and remove toxic particles. Women and are the most harmed by inefficient stoves because they do most of the cooking. Because women also care for the children, the children also suffer a high level of exposure. Indoor air pollution also has an effect on unborn children similar to smoking during pregnancy.

Laboratory tests show that the La Justa Model 2x3 reduced Carbon Monoxide emissions particulate matter by 79%, CO_2 by 43%, and CH_4 by 94% compared to traditional stoves (McCarty, N., April, 2009).

A qualitative survey conducted by Zamorano University, Honduras, demonstrates La Justa stove users' understanding of wood savings, reduction of smoke and dirt in their homes, and the improvements a new stove brings to their lives. 88.57% of La Justa users acknowledge that they consume less wood. 66.67% of those respondents say they are using the monetary savings to buy more food, and 27.27% report that they are investing it in their house and family. The remainder are using the savings to invest in business or education.

Beyond the global atmospheric and family health benefits of efficient cookstoves, the project's innovative technology contributes positively in several other important ways to sound, sustainable economic, environmental and social development in Santa Barbara Province and surrounding

provinces of the Western Highlands of Honduras. Project participants[1] report that the project actively increases the efficiency of both renewable and non-renewable wood resources. This and other indirect benefits are addressed in depth in the LCSR. Our project can serve as a model for other organizations that wish to initiate similar stove projects, thus bringing the numerous benefits of fuel-efficient cookstoves to potentially millions of people.

[1] See also SECTION E: Stakeholders' Comments

SECTION C. Proof of project eligibility

C.1. Scale of the Project

Please tick where applicable:

Project Type	Large	Small
	☐	☐
	☐	☐
	☐	☐
	☐	**SMALL**
 (Programme of Activities)	☐	

	☐

C.2. Host Country

Honduras

C.3. Project Type

End-use Energy Efficiency Improvement – Improved Cook Stoves

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	☐	☑
Does your project activity classify as an End-use Energy Efficiency Improvement project?	**YES**	

Please specify your project type:

End-use Energy Efficiency Improvement – Improved Cook Stoves

Pre Announcement	Yes	No
Was your project previously announced?		**NO**
Explain your statement on pre announcement Proyecto Mirador pilot studies and installations have been underway since 2004. Stoves installed before May 1, 2009, are not part of the project activity as they pre-date the project start date requested for GS VER crediting. The implementation of this project as a carbon emission reduction project was announced with the stakeholder consultation meeting on December 18, 2008.		

C.4. Greenhouse gas

Greenhouse Gas	
Carbon dioxide	**YES**
Methane	**YES**
Nitrous oxide	**YES**

C.5. Project Registration Type

Project Registration Type	
Regular	**REGULAR**

Pre-feasibility assessment	Retro-active projects (T.2.5.1)	Preliminary evaluation (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	☐	☐	☐

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	14° 55' 26" N
Longitude	88° 13' 44" W

Explain given coordinates

The coordinates given are of the center of operations for the project. The project manager in Honduras lives at these coordinates and consequently organizes from this location.

Stoves will be distributed to the Western Highlands of Honduras in Santa Barbara, Copan, Lempira, and Intibucá provinces (see Figures 5 and 6 on the following pages).

D.2. Map

Figure 5: Map of Honduras

Figure 6: project location in Honduras

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

Please refer to the LSCR for an in-depth discussion on the assessment of stakeholder comments.

E.2. Stakeholder Feedback Round

Please refer to the LSCR for an in-depth discussion of the Stakeholder Feedback Round.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
1 Human Rights -- The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people.	The installation of efficient cook stoves respects the dignity, cultural property and uniqueness of indigenous people. The stoves improve health and allow the users to continue cooking according to their traditional practices.	LOW	N/A
2 Human Rights -- The project does not involve and is not complicit in involuntary resettlement.	The project does not involve any resettlement or have any impacts that would encourage resettlement.	LOW	N/A
3 Human Rights -- The project does not involve and is not complicity in the alteration, damage or removal of any critical cultural heritage.	The installation of efficient cook stoves does not alter, damage or remove any critical cultural heritage. The stoves improve health and allow the users to continue cooking according to their traditional practices.	LOW	N/A
4 Labour Standards -- The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.	The installation of efficient cook stoves has no negative effects on labour standards for the employees or the beneficiaries of the Proyecto Mirador (PM). The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights. The projects are small in scale and must have the support of the local population in order to be implemented.	LOW	PM Employees are paid fair wages. Project recipients are clearly told that participation is voluntary.
5 Labour Standards -- The project does not involve and is not complicit in any form of forced or compulsory labour.	PM employees are paid fair wages and work without compulsion. All local labour supplied by recipients is strictly voluntary in-kind labour. Some in-kind labour and contribution is a pre-requisite of receiving a stove, but families that do not want the stoves do not need to donate any labour.	LOW	PM Employees are paid fair wages. Project recipients are clearly told that participation is voluntary.
6 Labour Standards -- The project does not	The PM does not employ and is not complicit in any form of child labour.	LOW	N/A

employ and is not complicit in any form of child labour.			
7 Labour Standards -- The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	The project stove installations will be implemented with any family that volunteers to accept a stove installation. The project does not discriminated on the basis of gender, race, religion, sexual orientation, or any other basis.	LOW	N/A
8 Labour Standards -- The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments	Materials used in the installation (cement, brick, and ash) are not hazardous to the health.	LOW	No hazardous materials are used in the project implementation.
9 Environmental Protection -- The project takes a precautionary approach in regard to environmental challenges and is not complicity in practices contrary to the precautionary principle. This principle can be defined as: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."	The project does not raise any threat of harm to human health or the environment. In fact, the project improves human health conditions by removing smoke from the inside of houses. The project also lessons human impact on the environment by reducing the amount of wood fuel collected from natural habitats.	LOW	N/A
10 Environmental Protection -- The project does not involve and is not complicity in significant conversion or degradation of critical	The project occurs entirely within the kitchens of already built homes, so no natural habitats are disturbed. Raw materials for the project have no more impact than the construction of a traditional stove. The project reduces consumption of wood collected from surrounding forests.	LOW	N/A

natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognised as protected by traditional local communities.			
11 Anti-Corruption -- The project does not involve and is not complicit in corruption.	The efficient stove construction takes place on site and benefits only the families that use the stoves. The families benefit from the efficient stoves (with benefits in health and efficiency) and not from any expectation of revenue. Expected carbon revenue is used for the expansion of efficient stove projects which is made clear up-front.	LOW	Project participants are clearly told that no revenue will be expected and that carbon revenue will flow to the project developers. Project participants will gain from the improved stoves alone.
Additional relevant critical issues for my project type	**Description of relevance to my project**	**Assessment of relevance to my project (low/medium/high)**	**Mitigation measure**
1			
2			
Etc.			

F.2. Sustainable Development matrix

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development.	If relevant copy mitigation measure from "do no harm" – table, or include mitigation measure used to neutralise a score of '–'	Check www.undp.or/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	Negative impact: score '–' in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact: score '+'
Air quality	None Needed.	6) Ensure environmental sustainability. 7) Combat HIV/AIDS, malaria and other diseases.	The project directly reduces the amount of smoke and harmful pollutants in the kitchen of participants compared to the baseline of traditional *fogon* stoves.	+ Positive
Water quality and quantity	None Needed.	6) Ensure environmental sustainability.	Decreased deforestation caused by collecting less wood for cooking will likely improve watersheds and water quality. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero.	0 Neutral
Soil condition	None Needed	6) Ensure environmental sustainability.	Decreased deforestation caused by collecting less wood for cooking will likely improve soil conditions and prevent erosion. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero.	0 Neutral
Other pollutants	None Needed	6) Ensure environmental sustainability.	Other then the reduction of harmful pollutants in the kitchen area, the project will not affect the level of other pollutants in the environment. This indicator scores a neutral zero.	0 Neutral

Biodiversity	None Needed	6) Ensure environmental sustainability.	The project will likely reduce the depletion of renewable wood stocks which will reduce pressure on natural habitats. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero.	0 Neutral
Quality of employment	None Needed	1) Eradicate extreme poverty and hunger.	Proyecto Mirador is one of the few employers in the Municipality of Atima to offer full-time employment. The project has 7 direct full-time employees and supports 7 full-time local suppliers in Santa Barbara Province. As the project expands the quality and quantity of employment will increase relative to current conditions. This indicator scores a positive.	+ Positive
Livelihood of the poor	None Needed	1) Eradicate extreme poverty and hunger 3) Promote gender equality and empower women.	Relative to the use of traditional *fogons*, the project has demonstrable positive impact on the livelihood of the poor including: wood savings, time savings, health improvement, and increased comfort. Indicator scores a positive.	+ Positive
Access to affordable and clean energy services	None Needed	6) Ensure environmental sustainability.	Relative to the traditional *fogon* stoves, La Justa stoves save the users wood collection costs (both time and money) and provide cooking energy that is clean and beneficial to their health through the reduction of respiratory illness. Indicator scores a positive.	+ Positive

Human and institutional capacity	None Needed	3) Promote gender equality and empower women.	Relative to the traditional *fogon* stoves, La Justa stoves promote gender equality and empowerment, because women will spend less time and resources on cooking and collecting wood. They will be able to devote additional time to self-development and improving the living conditions of their family and community. Indicator scores a positive.	+ Positive
Quantitative employment and income generation	None Needed	1) Eradicate extreme poverty and hunger.	The project will create local and regional employment both during the construction phase and operational phase. Indicator scores a positive.	+ Positive
Balance of payments and investment	None Needed	7) Develop a global partnership for development.	The project is implemented on a very small scale at the household level. Net foreign currency savings will also be very difficult to monitor, therefore this indicator scores a neutral zero.	0 Neutral
Technology transfer and technological self-reliance	None Needed	7) Develop a global partnership for development.	Proyecto Mirador is a developer, manufacturer, and distributor of efficient stove technology and will train the current and future staff and potential distributor partners regarding technical issues related to this activity. Indicator is scored positive.	+ Positive

Justification choices, data source and provision of references.

Air quality	The project directly reduces the amount of smoke and harmful pollutants in the kitchen of participants compared to the baseline of traditional *fogon* stoves. Project scores "positive." Multiple studies show that there is a strong negative health impact of smoke from open cookstoves. Removing the smoke from the kitchen by using improved cookstoves will directly reduce these health impacts. 1. Addressing the links between indoor air pollution, household energy and human health." WHO, 2000. The health burden of indoor air pollution, deforestation and fuel supply, effects of poverty, the economics of obtaining biofuels, quality of life in the home. www.who.int/mediacentre/events/HSD_Plaq_10.pdf 2. "Childhood Asthma and Indoor Woodsmoke from Cooking in Guatemala." Schei, et. al., http://ehs.sph.berkeley.edu/krsmith/admin/pubs/schei%20et%20al%20IA021.pdf Study on the increased prevalence of respiratory illness among children living in households where cooking is done on an open fire 3. "Critical Review of the Health Effects of Woodsmoke." Naeher, et. al., March 31, 2005. *Although a direct web link is unavailable, simply go to www.google.com and enter "Critical Review of the Health Effects of Woodsmoke" with quotation marks; then click the first link on the page which points to a PDF of the document.* Specific assessments of the health effects of indoor pollution caused by woodsmoke, based on research gathered in several developing countries. 4. "Honduras Stove Project Phase II, 2007: Global Health and International Medicine:" Mandzuk, C. and Schrowe, L. Indiana University School of Medicine (IUSOM), Department of Family Medicine (DFM) and the IUSOM, Department of Public Health (DPH) http://medicine.iu.edu/documents/DPHDocuments/InternationalHealth/Phase%20II%20-%20AMT%20Version.pdf Study of improvements in inside-the-home air quality after an improved Lorena rocket style stove intervention in a setting similar to that of Atima.
Water quality and quantity	Decreased deforestation caused by collecting less wood for cooking will likely improve watersheds and water quality. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero. Multiple studies show how deforested lands have increased erosion

	impacts and adversely affect water quality. This project will serve to decrease deforestation by collecting less wood for cooking, and will likely improve watersheds and water quality as a result. 1. "Stymieing Soil Erosion on Hillsides in Honduras: A New Rural Agenda." Jennifer Hashley, ASPI, December, 2003 http://ocw.tufts.edu/data/32/374546.pdf Thorough study on soil erosion in Honduras. 2. "Cross-level Institutional Processes and Vulnerability to Natural Hazards in Honduras." Lisa Segnestam, et. al., Stockholm Environment Institute, 2006. http://sei-international.org/low.php?p=publications&task=view&pid=759 (click on Download **PDF**) Vulnerability to natural disaster in Honduras due to soil erosion & deforestation.
Soil condition	Decreased deforestation caused by collecting less wood for cooking will likely improve soil conditions and prevent erosion. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero. This project will serve to decrease deforestation and thereby improve soil conditions, by collecting less wood for cooking. See studies listed for "Water Quality and Quantity," above.
Other pollutants	Other than the reduction of harmful pollutants in the kitchen area, the project will not affect the level of other pollutants in the environment. This indicator scores a neutral zero. Multiple studies show that there is a strong negative health impact of smoke from open cookstoves. Removing the smoke from the kitchen by using improved cookstoves will directly reduce these health impacts. (See Air Quality above.)
Biodiversity	The project will likely reduce the depletion of renewable wood stocks which will reduce pressure on natural habitats. Because this indicator is difficult to measure and monitor relative to the baseline of traditional *fogons*, this indicator scores a neutral zero. Numerous studies confirm that deforestation leads to species loss and decreased biodiversity. By reducing demand for firewood, this project will decrease deforestation and protect biodiversity. 1. "TED Case Studies: Honduras and Deforestation." http://www.american.edu/TED/honduras.htm Honduran biologist Ernesto Vargas observes that "the process of deforestation has disrupted the ecological equilibrium in Honduras" (qtd. in Gollin 1994). Many rare plants and animals inhabit the Honduran rain forest,

	including the quetzal, the harpy eagle, the iguanas, the tapir and orchids that depend upon the biodiversity of the forest area. The loss of the ecological niche for these species would eventually result in the loss of the species themselves. 2. "The Illegal Logging Crisis in Honduras." Environmental Investigation Agency, 2005 http://www.illegal-logging.info/item_single.php?item=document&item_id=262&approach_id=15 Includes information and statistics on the biodiversity that exists within Honduras, including number of endangered species and concentration of forested areas. 3. "Honduras: Environmental Profile." Mongabay, 2005. http://rainforests.mongabay.com/20honduras.htm General statistics on Honduras & deforestation in Honduras. Provides that "65% of the country's energy comes from fuelwood."
Quality of employment	This project directly supports the employment of people in a very rural and poor community: Proyecto Mirador is one of the few employers in the Municipality of Atima to offer full-time employment. The project has 7 direct full-time employees and supports 7 full-time local suppliers in Santa Barbara Province. As the project expands the quality and quantity of employment will increase relative to current conditions. This indicator scores a positive. As evidence Proyecto Mirador employment records are available to the validator and to Gold Standard officials upon request.
Livelihood of the poor	Relative to the use of traditional *fogons*, the project has demonstrable positive impact on the livelihood of the poor including: wood savings, time savings, health improvement, and increased comfort. Indicator scores a positive. Many studies show the detrimental impact of time spent collecting firewood and cooking over traditional fires by people in poor communities. Cookstoves with improved efficiency will improve the livelihood of the poor by reducing the need to collect firewood. 1. "The Quest for Fire: Hazards of a Daily Struggle – Focus." Environmental Health Perspectives, January 2003. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241326/ (Click on "**PDF**" under "Full Text") Discusses the hazards associated with gathering and transporting firewood, and health negative effects

	associated with firewood consumption. Discusses the role of fuelwood consumption in deforestation, specifically in Asia. Also supports #1 – Air Quality. 2. "Solar Cookers for Developing Countries." Currit & Jones, Brigham Young University. http://solarcooking.org/Solar-Ovens-for-Developing-Countries.htm Discusses the economic benefits of replacing traditional cookstoves with solar cookers. Useful to our argument because it emphasizes time spent gathering wood as a significant economic burden for developing countries. 3. "Design Principles for Wood Burning Cook Stoves." Bryden, et. al., Aprovecho Research Center & Shell Foundation. http://bioenergylists.org/stovesdoc/Pcia/Design%20Principles%20for%20Wood%20Burning%20Cookstoves.pdf Chapter 2 outlines Larry Winiarski's design principles, which have provided the basis for constructing the La Justa stove. The principles show the importance of maximizing heat transfer for cleaner burning fires, and illustrate how "a hot raging fire is clean, but a cold fire can be very dirty." 4. "Identifying the Drivers of Sustainable Rural Growth and Poverty Reduction in Honduras." Jansen, et. al., International Food & Policy Research Institute, April 2005. www.ruta.org/admin/biblioteca/documentos/350_EN.pdf Analyzes the nature and causes of poverty in rural Honduras. Identifies 8 specific "livelihood strategies" whereby household resources are successfully put to use to maximize economic benefit. Includes in-depth analysis of the financial state of rural Honduran households. Compares the relative poverty of female-headed households vs. male-headed households. Poverty is widespread and deep in rural Honduras, particularly in hillside areas where most households have limited assets on which to base their livelihood strategy. High poverty density in hillside areas, and the fact that "80% of all rural poor are located in these areas…" 5. "Fact sheet: Honduras - Women, agriculture and rural development." Food and Agricultural organization, quoting World Bank Atlas, 1994. http://www.fao.org/docrep/v9650e/v9650e00.HTM The section titled "Role of women in agriculture" describes the role of women in rural Honduran society and clarifies women's position in the economic scheme relative to that of men.
Access to affordable and clean energy services	Relative to the traditional *fogon* stoves, La Justa stoves save the users wood collection costs (both time and money) and provide cooking energy that is clean and beneficial to their health through

	the reduction of respiratory illness. Indicator scores a positive. See the multiple studies and resources that support the use of efficient cookstoves as clean energy sources. 6. "A laboratory comparison of the global warming impact of five major types of biomass cooking stoves" By: Nordica MacCarty, Dean Still, Damon Ogle, Dr. Tami Bond, Christoph Roden, June, 2008 http://www.aprovecho.org/web-content/publications/publications.html (Click "**Full Report**" under the appropriate title.) 7. Aprovecho Research Center Website http://www.aprovecho.org Studies on fuel efficient stoves, principles for different kinds of stoves, cultural factors in designing stoves. 8. Certifying Carbon Credits with the Gold Standard http://www.cdmgoldstandard.org/Certifying-GS-Carbon-Credits.112.0.html Describes the process of certifying offsets. 9. Gold Standard http://www.cdmgoldstandard.org/About-Gold-Standard.62.0.html The Gold Standard Foundation is a non-profit organization under Swiss law that operates a certification scheme for premium quality carbon credits. 10. Soot from Third World Stoves is new target in climate fight. Rosenthal, Elisabeth. April 16, 2009. http://www.nytimes.com/2009/04/16/science/earth/16degrees.html?_r=1&scp=1&sq=April%2016,%202009%20Elisabeth%20Rosenthal&st=cse New information indicates that global warming may be more influenced by soot from inefficient cookstoves than previously thought.
Human and institutional capacity	Relative to the traditional *fogon* stoves, La Justa stoves promote gender equality and empowerment, because women will spend less time and resources on cooking and collecting wood. They will be able to devote additional time to self-development and improving the living conditions of their family and community. Indicator scores a positive. Please see evidence given for "Livelihood of the poor,"

Quantitative employment and income generation	The project will create local and regional employment both during the construction phase and operational phase. Indicator scores a positive. Please see evidence given for "Quality of employment"
Balance of payments and investment	N/A. The project is implemented on a very small scale at the household level. Net foreign currency savings will also be very difficult to monitor, therefore this indicator scores a neutral zero.
Technology transfer and technological self-reliance	Proyecto Mirador is a developer, manufacturer, and distributor of efficient stove technology and will train the current and future staff and potential distributor partners regarding technical issues related to this activity. Indicator is scored positive. Proyecto Mirador directly transfers cookstove technology to local manufacturers.

SECTION G. Sustainability Monitoring Plan

According to Gold Standard Tool Kit v.2.0 section 2.4.2, all non-neutral indicators must be monitored. This project has only neutral and positive indicators. Since we have no negative indicators we therefore have no mitigation measures. The project's Sustainable Development Monitoring Plan will focus on monitoring indicators where the project has a positive impact on sustainable development which is the case in 8 of the 12 GS indicators and all three categories of sustainable develop have at least one or more positive indicators.

No		**1**
Indicator		**Air quality – score positive**
Mitigation measure		None Needed – the Project itself and the above justifications support this indicator as "positive."
Chosen parameter		% of stove users who notice improved air quality
(Indicator)		Air quality & Other pollutants
Current situation of parameter		Initial Surveys show that 38% of users like the "no smoke" aspect of the Fogon stove. (Yale Study)
Future target for parameter		Continuous demonstration of notice improved air quality.
Way of monitoring	How	Surveys will be an ongoing part of the monitoring plan. Surveys specifically addressing sustainability issues will be given to a sampling of La Justa users, with each randomly chosen family surveyed 2 years after the installation of the La Justa stove. Among other questions, the surveys will ask, "Do you notice improved air quality? Y/N" in order to show that users notice and appreciate the reduction of smoke compared to the traditional *fogon* stoves.
	When	2 Years after installation of Stove
	By who	Proyecto Mirador – Dedicated Monitoring Specialist

No	**2**
Indicator	**Water quality and quantity – score neutral**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator as "neutral."

No	**3**
Indicator	**Soil condition– score neutral**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator as "neutral."

No	**4**
Indicator	**Other pollutants – score neutral**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator as "neutral."

No	**5**
Indicator	**Biodiversity – score neutral**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator as "neutral."

No		**6**
Indicator		**Quality of employment – score positive**
Mitigation measure		None Needed – the Project itself and the above justifications support this indicator as "positive."
Chosen parameter		Quality of jobs direct and indirect resulting from the Proyecto Mirador project.
(Indicator)		Quality of Employment
Current situation of parameter		Proyecto Mirador is one of the few employers in the Municipality of Atima to offer full-time employment. The project has 7 direct full-time employees and supports 7 full-time local suppliers in Santa Barbara Province. As the project expands the quality and quantity of employment will increase relative to current conditions.
Future target for parameter		Increase in quality of the employment offered locally
Way of monitoring	How	All Proyecto Mirador employees will complete an annual Employee Satisfaction Questionnaire to provide feedback on the quality of their employment. All complaints and concerns will be noted and addressed accordingly. Employee records are currently maintained and will continue to be maintained.
	When	Annually
	By who	Proyecto Mirador – Dedicated Monitoring Specialist

No		**7**
Indicator		**Livelihood of the poor – score positive**
Mitigation measure		None Needed – the Project itself and the above justifications support this indicator
Chosen parameter		Qualitative kitchen survey showing the average amount of time saved from reduced fuel requirements
(Indicator)		Livelihood of the Poor & Human and institutional capacity
Current situation of parameter		Initial Surveys show that 32% say that it is more efficient or economic.
Future target for parameter		Continuous increase in the % that see efficiency benefit from the stoves.
Way of monitoring	How	Surveys specifically addressing sustainability issues will be given to a sampling of La Justa users, with each randomly chosen family surveyed 2 years after the installation of the La Justa stove. Questions will be incorporated into the follow-up surveys to show the time and wood savings caused by using the stove. Surveys will include such questions as: "How much time do you spend collecting wood?" "Do you notice reduced fuel usage?" "If so, how are the monetary savings associated with reduced fuel usage being invested?" and any other questions deemed pertinent to our impact on the livelihood of the poor.
	When	2 Years after installation of Stove
	By who	Proyecto Mirador – Dedicated Monitoring Specialist

No	**8**
Indicator	**Access to affordable and clean energy services – score positive**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator

Chosen parameter		Records showing the installation of stoves
(Indicator)		Access to affordable and clean energy services
Current situation of parameter		5000 pre-project stove installations
Future target for parameter		Continuous increase in the # of stove installations above 5,000.
Way of monitoring	How	Detailed records have been and will continue to be kept showing all stoves installed since inception of the project, including the total number of stoves installed.
	When	Yearly
	By who	Proyecto Mirador – Dedicated Monitoring Specialist

No		**9**
Indicator		**Human and institutional capacity – scores positive**
Mitigation measure		**None Needed – the Project itself and the above justifications support this indicator**
Chosen parameter		Surveys indicating if stove users, particularly women have more free time, spend less time and resources on cooking and collecting wood and whether they will be able to devote additional time to self-development and improving the living conditions of their family and community.
(Indicator)		Human and institutional capacity
Current situation of parameter		N/A
Future target for parameter		New Activities adopted by new stove users
Way of monitoring	How	Surveys specifically addressing sustainability issues will be given to a sampling of La Justa users, with each randomly chosen family surveyed 2 years after the installation of the La Justa stove. Questions will be incorporated into the follow-up surveys to show the time and wood savings caused by using the stove, and to show specifically what women do during the time saved in association with the reduction of time spent gathering wood.
	When	2 Years after installation of Stove
	By who	Proyecto Mirador

No		**10**
Indicator		**Quantitative employment and income generation – scores positive.**
Mitigation measure		None Needed – the Project itself and the above justifications support this indicator
Chosen parameter		Records showing the quantity and type of jobs created by the project.
(Indicator)		Quantitative employment and income generation
Current situation of parameter		Mrs. Emilia Giron de Mendoza, a resident of Santa Barbara, has been president of the project for OIF. Dona Emilia leads a team of 7 full-time Hondurans who build stoves on a daily basis.
Future target for parameter		Continuous increase in job creation
Way of monitoring	How	Employee records are actively maintained, including an ongoing salary history for all employees.
	When	Yearly
	By who	Proyecto Mirador

No	**11**
Indicator	**Balance of payments and investment – scores neutral.**
Mitigation measure	None Needed – the Project itself and the above justifications support this indicator as neutral.

No		**12**
Indicator		**Technology transfer and technological self-reliance – scores positive.**
Mitigation measure		None Needed – the Project itself and the above justifications support this indicator positive.
Chosen parameter		Number of stove installation training sessions held
(Indicator)		Technology transfer and technological self-reliance
Current situation of parameter		N/A
Future target for parameter		Increased training on stove use, technology, and installation
Way of monitoring	How	Employees are trained on all aspects of stove construction and installation. They in turn disseminate the relevant aspects of stove construction to community members who assist in the stove's construction. Feedback is provided as issues arise, and technological advances are actively researched and incorporated where appropriate. Records of stove installation training sessions are actively maintained, and any improvements in stove construction are actively integrated and documented as they arise. All stove beneficiaries receive a follow up survey and a follow up training session within 2-5 weeks after stove installation, in order to ensure the stove is being optimally used and maintained.
	When	Yearly
	By who	Proyecto Mirador – Dedicated Monitoring Specialist

Additional remarks monitoring

SECTION H. Additionality and conservativeness

This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

H.1. Additionality

Please refer to section B.5. of the PDD: “Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality)”

H.2. Conservativeness

The project has chosen the most conservative baseline scenario applicable to the project type by using the Gold Standard “Improved Cook-Stoves and Kitchen Regimes” baseline methodology.

ANNEX 1 ODA declarations

Please see attached ODA declaration.