

Sustainable Energy for All Technical Assistance Program

I. ACTIVITY DETAILS

Activity Title: CENTRAL AMERICA CLEAN COOKING INITIATIVE (CACCI)	
Activity ID (if available): P146805	
Region: Latin America and the Caribbean	Country: Guatemala, Honduras, and Nicaragua.
Task Team Leader: Koffi Ekouevi	
Co-TTL (if applicable): Janina Franco	

The UN Secretary Ban Ki Moon formally launched the Sustainable Energy for All initiative (SE4ALL) initiative in September 2011 with three objectives:

- Achieve universal access to energy, including electricity and modern cooking fuels;
- Double the renewable energy share of power produced and consumed;
- Double the rate of improvement of energy efficiency.

The World Bank Group has been highly engaged since inception of the initiative. At a leadership level, WBG President Jim Kim accepted the invitation to co-chair the SE4ALL Advisory Board. At a technical level, the World Bank co-created the SE4ALL Global Tracking Framework, among other activities. As part of the WBGs contribution to the country within the SE4ALL initiative, ESMAP has developed a Technical Assistance Program (S-TAP). The development objective of the S-TAP is to support the expansion of access to modern energy services to at least 200 million people by 2030. To achieve this objective, ESMAP aims to assist approximately 20 countries in establishing planning, institutional and policy frameworks and mobilizing investments for scaling up and accelerating energy access programs.

II. PROJECT DESCRIPTION

Over the last 20 years, many countries in the Latin America and the Caribbean region have made progress in the provision of modern energy services to households. However, about 34 million people do not have access to electricity and about 85 million people in the region still rely on biomass for cooking and heating. The use of biomass fuels is more prevalent in Central America where about 51 percent of the population representing about 20 million people cooks with biomass using open fires or rudimentary stoves. The percentage relying on biomass for cooking and heating is about 72 percent in Guatemala, 69 percent in Honduras, 67 percent in Nicaragua. This percentage is lower in other countries of Central America such as Costa Rica (9 percent), Panama (16 percent) and El Salvador (27 percent). This percentage is even much lower in Latin American countries such as Colombia (20%), Mexico (14%) and Brazil (13%), however the absolute numbers of people using biomass fuels are large Colombia (8 million); Mexico (14 million) and Brazil (24 million).

The strategic choice made by the LAC Sustainable Energy Group in approaching clean cooking solutions is to focus initially on Central America in Guatemala, Honduras and Nicaragua with an open door for other countries in the region based on demand. The Central America Clean Cooking Initiative (CACCI) is therefore designed to be part of a broader Latin America and Caribbean Clean Cooking Initiative under development by the region through the Regional Partnerships Funds. This broader initiative could include initially countries like Haiti, Peru, and Bolivia.

This is in-line with the U.N. Sustainable Energy for All Initiative which has recognized that the provision of efficient cook stoves and clean fuels to poor households should be part of the broader objective of universal energy access for all by 2030. **(a) Sector Context in Central America**

Of the 20 million fuelwood users in the region, approximately 86 percent, or 17 million, are concentrated in Guatemala, Honduras, and Nicaragua, including both urban and rural users. The use of biomass for cooking will likely continue to be significant for a long time due to high incidence of poverty, high LPG prices coupled with unsustainable LPG subsidies, as well as relatively easy access to fuelwood.

It is well documented that exposure to wood smoke from the inefficient combustion of biomass is a significant public health hazard. Burning fuelwood in inefficient cookstoves emits smoke composed of a mixture of particulate matter (PM_{2.5}), carbon monoxide (CO), hydrocarbons, formaldehyde, and benzene, which have been shown to significantly exceed safe levels established by the World Health Organization (WHO). According to the WHO, in Central America there are about 37,000 premature deaths annually from household air pollution (HAP) resulting from wood-burning fires, of which about 10% impact children. According to the Global Burden of Disease report, household air pollution from the use of solid fuels is the second most important risk factor that account for the disease burden in Guatemala (The first risk factor is alcohol use). The same data shows household air pollution as the fourth most important risk factor in Honduras and in Nicaragua. Household air pollution is not among the 15th important risk factors in Costa Rica where only 6 percent of the population rely on biomass fuels for cooking.

It is also now widely accepted that the clearing of land for arable and pastoral agriculture is the main cause of deforestation rather than the use of wood for energy, as was believed in the past. Sustainable production and supply of fuelwood through community forest management is likely to reduce the pressure on forest resources for wood energy and generate revenues for households usually bypassed by an illegal trading of fuelwood.

Moreover, the reliance on fuelwood for cooking and heating is increasingly drawing attention to the role in global warming of black carbon originating from incomplete combustion of fossil fuels, particularly diesel, and other sources including biomass. There is growing body evidence that black carbon acting alone might be the second most important factor affecting the rise in global temperatures after carbon dioxide.

Experience from pilot projects in the region show that fuelwood users respond well when ICS meet the needs of a specific circumstance, such as: when fuelwood is purchased and is becoming increasingly expensive (particularly in the case of former peri-urban/urban LPG users); when health issues are clearly understood by the whole family; when incentives are present to lower the upfront costs of stoves, but are not seen as a gifts; and when ICS are tailored to local cooking practices, result in tangible fuel and time savings, do not involve major changes in cooking habits, and appeal to the “modernity” aspirations of users.

Efforts involving donor agencies, governments, non-governmental organizations, as well as local entrepreneurs have contributed to dissemination of efficient biomass cookstoves in the region over the last 10 years. Despite these efforts, the penetration these cookstoves remains low—less than 10 percent of the affected population. The region faces a major challenge to grow ICS penetration from its less than 10 percent market share to 25 percent by 2020 to meet the regional goal of 1,000,000 ICS installed by then and, ultimately, the universal access goal set by the UN Sustainable Energy for All Initiative.

From a societal perspective, the benefits associated with clean cooking are myriad, including avoided costs for the public health system, preservation of forest resources, as well as greenhouse gas reductions resulting from decreased use of non-renewable biomass. Providing people with clean and efficient cooking solutions is therefore not just an energy issue, but one related to poverty, gender inequality, public health, environmental sustainability, local employment, climate change, agriculture, and local employment. These potential co-benefits of clean cooking solutions suggest that interventions could positively impact poverty reduction and boost shared prosperity.

(b) Government Commitment to Universal Energy Access

Central American countries have recognized the importance of developing clean cooking solutions to address the health, environment, and climate change impacts of cooking in inefficient cookstoves. The Central America Integration System (aka SICA, acronym in Spanish), a regional entity, is leading the dialogue and development of an action plan for implementing the regional Sustainable Energy strategy. SICA is working closely with member governments on this ambitious initiative. One of the region's high priorities as stated in the Central America Sustainable Energy Strategy for 2020 prepared by SICA is to save 10% of fuelwood use by installing 1 million ICS by 2020. SICA has requested the Bank to provide assistance towards the development and the implementation of a regional clean cooking program.

The World Bank has been actively engaging in clean cooking issues in Central America. The Bank recently completed a regional study to better understand current developments in clean and efficient biomass cooking solutions, factors that have precluded a larger penetration of ICS within the region, and lessons learned from past programs—both in the region and in other countries—that may be relevant to Central America. This study paves the way for further Bank engagements by extensively engaging the country governments and other stakeholders and making recommendations for scaling up clean cooking solutions in opt-in countries for SE4ALL in the region.

(c) Rationale for ESMAP/Bank Support (in line with the Objectives of the SEFA Technical Assistance Facility)

The World Bank engagement on the clean cooking agenda in Central America is fully aligned with the global Sustainable Energy for All (SE4ALL) initiative. Results of the ESMAP financed study ***“What have we learned about household biomass cooking in Central America?”*** recommended the necessity for the region to provide an enabling institutional environment to support the scaling up of clean cooking solutions including the development of financing mechanisms to support producers and distributors, research and development of new and advanced products, and the development of efficient distribution networks. These recommendations are in alignment with the SE4ALL goal of achieving universal energy access to modern cooking by 2030.

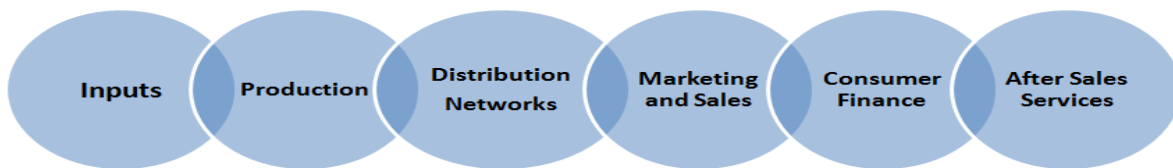
A first regional stakeholder's workshop reiterated the interest of the countries to move forward on this agenda. Annex 1 provides some highlights of the workshop's discussions and recommendations. The on-going work as part of the Honduras SREP cookstoves component has also provided valuable insights of the challenges and opportunities in developing clean cooking solutions. The proposed technical assistance aims to support national energy action plans and investment prospectuses that would create pathways for the countries to achieve universal access to clean cooking solutions by 2030. The TA would also support activities for creating the enabling environment for attracting private sector capital to implement these solutions.

ESMAP support for to this technical assistance program is in alignment with the World Bank Group's Energy Directions Paper which has outlined clean cooking solutions as an area that needs further attention and support based on the potential co-benefits on poverty reduction mainly through impacts on health outcomes. This support will contribute to remove some of the internal barriers associated with the development of clean cooking solutions as the Central America Clean Cooking Initiative will closely collaborate with similar initiatives in other regions to lay out and to share best practice lessons with the ultimate goal of increasing lending operations to help provide clean cooking solutions to households in developing countries.

(d) Brief Description of Expected Outcomes

A sector-wide, partnership approach would be taken to establish a country-led, results-focused framework that brings together development partners and other stakeholders to coordinate assistance programs toward achieving universal clean cooking solutions by 2030 in Guatemala, Honduras, and Nicaragua. The initiative also aims to promote regional collaboration, learning and knowledge sharing on clean cooking solutions at the household level through the establishment of regional forums. It will address the issues of clean cooking along its entire value chain as shown by the following figure from the required inputs to after sales services.

A Value Chain of Clean Cooking Solutions



The initiative will facilitate the effective operational scaling up of clean cooking solutions through the design of policy, institutional and financing instruments through broad stakeholder consultation and partnerships. Ultimately the initiative will help the targeted countries to facilitate the adoption and use of cleaner cookstoves by their population still using solid fuels and to support the development of market segments that can afford cleaner fuels for cooking

(e) Proposed Activities

The proposed activities as part of the CACCI are based on an assessment of on-going work at the level of each of the countries and at the regional level. In Guatemala for example, the GACC has completed a cookstove sector market assessment report. The Government of Guatemala is also in the process of finalizing a clean cooking strategy with an active participation of inter-ministerial and multi-sector stakeholder groups. In Honduras, as part of the preparation of the SREP Program a report on sustainable business models for scaling up clean cookstoves dissemination was prepared. In Nicaragua, the commitment of the Government on the development of renewable energies sources has created a good momentum to develop clean cooking solutions. Work is going on in collaboration with IRINA to develop renewable energy assessments including assessment of their potential for the clean cooking sector. Proposed activities by the CACCI are developed to leverage all of the on-going activities. A detailed list of activities to be conducted by country, at the regional level, and internal outreach activities within the Bank is shown in Annex 2. The following is a description of the core type of activities of the CACCI:

- Development of roadmaps to universal access to clean cooking solutions by 2030. The roadmaps will be country specific. They will build on efforts at the level of each country taking into account views of a broad range of stakeholders to ensure national ownership. They will include short, medium, and long term achievable targets to ensure universal clean cooking solutions by 2030. They will also include well-defined implementation arrangements.

- Elaboration of country-specific investment prospectuses. Country-specific investment prospectuses are aimed to provide financing plans to implement the country roadmaps. They will lead to a robust pipeline of investment and TA projects with basic information such as objectives, scope of activities and project costs. The investment prospectus will be used to help mobilize required resources with an active liaison and coordination with the donors, IFC, and private sector throughout the duration of the program. Leveraging investment to support clean cooking solutions is required to scaling up efforts towards universal access by 2030. Barriers faced by producers, distributors, and consumers that can be removed by private sector financing will be explored. Similarly, barriers that can be removed using the leverage of public financing will also be explored. The investment prospectuses will be followed by investment forums where public and private sector funding will be leveraged.
- Development of country-specific producer/distributor/consumer financing products for different market segments. Financing was identified as one of the main barriers for the scaling up of clean cooking solutions in Central America. Producers and distributors have difficulty accessing capital to start or grow their business, and without access to financing, achieving economies of scale for imports is challenging. The lack of working capital is a major constraint in running their business. Consumers also find it difficult to afford clean cookstoves. In collaboration with IFC, local banking institutions, and microfinance institutions, country-specific products will be developed to facilitate producer/distributor and consumer financing. Annex 3 shows a detailed breakdown of producer/distributor and consumer barriers with public and private financing opportunities. Stakeholder consultations will inform on the type of financing needs on one hand for producers/distributors and on the other hand for consumers. Based on these consultations, specific plans for each will be elaborated to develop clean cooking markets.
- Support selected analytical work and technical assistance identified in the investment prospectus. The scope of this activity may include improvement of policy and regulatory framework, promoting private sector participation, awareness raising campaigns, development of monitoring and evaluation systems. In partnership with selected institutions analytical work will be conducted to serve as basis for interventions.
- Research and development with knowledge sharing. Based on the identified capacity requirements and knowledge gaps as identified by the ESMAP financed regional study, the initiative will support various activities, including research and development to improve the design of cookstoves to enhance the performance, data gathering, and facilitation of South-South exchanges. Other input level activities such as improving quality control, testing protocol, standard setting and certification will also be undertaken. The initiative will support on-going efforts of the University of Zamorano and the GACC by facilitating access to other testing centers, experts, and country stove designers to help develop more specific testing protocol and standards for plancha stoves. An important goal of the initiative will be to help the countries develop national standards that pave the way to the development of regional standards, using adopted methodologies to develop metrics as part of the IWA/ISO process. These activities are important as quality of products to be disseminated at large scale is required to ensure that with adoption and proper use, expected health, environment, and climate change benefits will be gained.
- Coordination and partnership development. The regional program will provide a platform to align the resources and similar initiatives to the common goal of universal access to clean cooking for Central America. It will mobilize new partners from both the public and private sector for technical and financial support to its universal access agenda. Coordination and partnership development will also be at the heart of all the initiatives of the CACCI at the country level. Synergies will be explored as much as possible and co-financing of activities will be given priority. The approach will be an opportunistic one to explore how we can help leverage operations in other sectors such as health, nutrition, rural infrastructure or water and sanitation and help prepare components on clean cooking.

(f) Partnership Arrangements and Stakeholder Consultation

The CACCI will collaborate closely with national institutions in the selected countries to deepen the dialogue on clean cooking solutions. It will support the countries in leveraging partnerships to support planning, standards setting, capacity development for testing and monitoring, financing mobilization and scaling up mechanisms. There will be close collaboration with the IFC, local banking institutions, microfinance institutions, the Global Alliance for Clean Cookstoves, IDB, OLADE, ECLAC, GIZ, the University of Zamorano, and CAF.

(g) Institutional and Implementation Arrangements

The CACCI will be Bank executed. It will be implemented in close collaboration with relevant country institutions spearheading the SE4All initiative.

(h) Monitoring and Evaluation

A progress report will be prepared every six months by the task team. This report will be shared with the LCSEG management, ESMAP, and main partner organizations. A monitoring and evaluation system will be designed. It will provide country inputs as much as possible to global tracking framework as part of the opt-in requirements.

III. OUTCOMES EXPECTED

On the table below (which will also be required for the GFR), please indicate the outcome(s) and related indicator(s) which the proposed activity is expected to achieve (*usually 1-2 indicators which are most relevant and achievable would be sufficient*).

OUTCOME	INDICATOR	
Development Finance Informed	<input type="checkbox"/>	Preparation of new operation informed
	<input type="checkbox"/>	Existing operations informed
	<input type="checkbox"/>	Mobilization of non-Bank resources informed
	<input type="checkbox"/>	Government expenditure informed
Policy/Strategy Informed	✓	Government policy / strategy informed
	<input type="checkbox"/>	Public debate stimulated / initiated
	✓	Contributed to stakeholder involvement
	<input type="checkbox"/>	Development community/partner policy/strategy informed
	<input type="checkbox"/>	Bank country strategy (CAS/CPS) informed/influenced
	<input type="checkbox"/>	Bank sector strategy informed/influenced
Client Capacity Increased	✓	Design capacity strengthened
	✓	Implementation capacity strengthened
	✓	Monitoring & evaluation capacity increased
	<input type="checkbox"/>	Clients are recognized with good practice award

IV. DELIVERY SCHEDULE

Milestones	Delivery Date
Finalization of the Guatemala Clean Cooking Roadmap	March 2014
Finalization of a Nicaraguan Clean Cooking Roadmap	March 2014
Completion of a regional report on cookstoves quality enhancement, standards and certification methodologies and implementation plan	April 2014
Completion of the Honduran Clean Cooking Roadmap	September 2014
Completion of the design of country specific producer/distributor and consumer financing products	November 2014
Completion of country specific investment prospectuses	March 2015
Completion of the design of monitoring and evaluation systems	June 2015

Annex 1: Highlights from the Regional Workshop on Challenges and Opportunities for Universal Access to Clean Cooking in Central America, Managua, Nicaragua, May 22-25

(Prepared by Xiaoping Wang)

The objectives of the Workshop were to i) disseminate the report of the World Bank study on “What Have We Learned about Household Biomass Cooking in Central America?” and ii) carry out initial consultations on the development of a regional clean cooking program for Central America. The Workshop was co-organized by the World Bank and Central America Integration System (SICA in its Spanish acronym) in collaboration with the Ministry of Ministry and Mines of Nicaragua, and the Ministry of Natural Resources and Environment of Honduras (SERNA).

More than 50 participants attended at the workshop, including representatives from the governments of Guatemala, Honduras, Nicaragua and El Salvador, Global Alliance for Clean Cookstoves (GACC via audio), Mrs. Pilar Nores (the former first lady of Peru, IFT), international and bilateral organizations, NGOs, and the private sector. The workshop agenda consisted of different sessions on global and regional perspectives and that of the private sector, break-out sessions on thematic issues, as well as discussions on the work plan for the development of a regional clean cooking program. The workshop agenda and list of participants are attached.

The Workshop drew high-level attention to the issues and challenges of scaling up clean cooking solutions in Central America. The Vice Minister of Energy and Mines of Nicaragua, Mac, and representatives from Honduras and SICA opened the workshop emphasizing the importance of clean cooking agenda for Central America and setting the expectations of the Workshop. The Minister of Energy and Mines of Nicaragua, Camille and representative of SICA highlighting the energy and momentum generated at the Workshop and challenging the region to think bigger and bolder in moving towards universal access to clean cooking. Prof. Kirk Smith, an internationally established authority on indoor air pollution and public health, delivered a keynote speech on the health impacts of smoke from use of woodfuels, showing that there is strong field evidence both internationally and in Central America of mortality and morbidity due to use of inefficient and polluting biomass stoves. The Workshop was covered by the national newspaper of Nicaragua La Prensa on May 23, 2013, including interviews given by Mac and the vice minister of the Ministry of Energy and Mines of Nicaragua Mrs. Lorena Lanza (<http://www.laprensa.com.ni/2013/05/23/ambito/147865-centroamerica-afina-estr>).

The Workshop was the first ever event since early 2000 to bring together different cookstove stakeholders in the region to discuss the issues and challenges facing Central America to scaling up the penetration of clean cooking solutions. It not only took stock of the current situation and historic evolution of technologies and interventions, but also started discussions on the formulation of regional and country programs toward universal access to clean cooking. There was very strong consensus among stakeholders for a coordinated, structured effort at the regional level and a more ambitious vision than the current regional target of 1 million improved cookstoves by 2020. These discussions provided strong justification and basis for developing a regional program.

Brief summary of the discussions at the Workshop:

- Cooking issues require concerted efforts from both the public sector and the private sector. The Workshop provided an unprecedented opportunity in a long time to bring different stakeholders together in the region to think and act collectively for effective interventions at the regional or country level.

- The evidence of negative health impacts caused by smoke exposure is strong, at the global and regional level, and corroborated by lab and field measurements. The impacts of smoke from inefficient household biomass burning on public health rank as one of the top risks for mortality in four of the Central American countries, providing strong justification for public interventions.

- There is a dynamic between different cooking fuels: biomass, gas and electricity. Switching between different fuels, especially between biomass and gas is swift, and very much affected by income level, reliability and stability of income, and gas subsidies. The general consensus was that some households will graduate to modern fuels as income increases and modern fuels become more accessible and, with appropriate pricing policies, more affordable, while other households will continue to use biomass in conjunction with modern fuels or as the only fuel for cooking.

- A market for efficient biomass cooking is yet to emerge. The potential for a hypothetical clean cookstove market depends not only on further advance of technologies and quality control of products, but also the enabling environment and financial mechanisms. Nonetheless, there is general consensus that the current external funding-driven programs are not sustainable and prelude any potential to reach economies of scale. A more coordinated effort engaging both the public and private sectors, owned and led by the region/countries with external support in financing, technical assistance and capacity building, and adopting a market-based approach is preferred.

- Future interventions should be realistic and results driven. While the region should be ambitious in thinking about universal access to clean cooking, it is important to develop a phased strategy and action plan and show some initial progress while developing the following phases. Besides the traditional sectors (energy, environment, natural resources, etc.), health and education sectors should be an essential part of any such interventions to be successful.

- SICA is working with OLADE and its member countries to develop an action plan for implementing the regional 2020 strategy for biomass fuels, including an installation of 1 million efficient cookstoves by 2020. This is a good starting point and a building block for developing a full-fledged regional biomass cookstove program. The consultant for this exercise has been hired by OLADE and the desktop analysis is expected to complete in August. SICA has requested verbally the Bank to support country consultations of the draft action plan between August and September 2013.

Next Steps:

- SICA in collaboration with the government representatives from four countries will draft a work plan for the development of a regional woodfuel action plan by May 30, 2013 and submit it for discussion to the SICA energy directors meeting to be held in Panama City later this week and to the World Bank.

- The Bank will check the resource availability to support country consultations of the regional woodfuel action plan and respond to SICA's request.

- The Bank will develop a full concept note of a regional cookstove program for Central America by September 2013, building on the SICA action plan for implementing the 2020 woodfuel strategy. The potential sources of funding of the Program include ESMAP SE4ALL Technical Assistance Program (S-TAP), BB and others.

Annex 2: Proposed Work Program

Guatemala

Activity	Deliverable	Process
<u>Activity 1</u>		
Assistance to the GoG to finalize its clean cooking roadmap	Clean Cooking roadmap Communication strategy document	Workshops to build ownership among different stakeholders Consultant services to finalize the roadmap Consultant services to prepare a communication strategy for awareness raising at the national level
<u>Activity 2</u>		
Design of an implementation plan of the roadmap	Investment prospectus	Consultant services to develop realistic interventions and their financing plans Workshops with stakeholders including NGOs, private operators, consumers, commercial banks, micro-finance institutions, rural development banks, to ensure ownership and national validation of the investment prospectus.
<u>Activity 3</u>		
Design of producer, distributor and consumer financing products	Targeted financing products	Collaboration with the IFC, SMEs, NGOs, and consumer associations to develop financing products to facilitate the uptake of clean cooking solutions.
<u>Activity 4</u>		
Support standards setting and quality assurance	Document on national standards and monitoring arrangements	Collaboration between concerned government institutions and the University of Zamorano; Support development of quality assurance protocol and monitoring arrangements for its implementation.
<u>Activity 5</u>		
Capacity development activities	Workshop and study tour reports	Targeted workshops and knowledge exchange activities aimed at helping the government, private operators and NGOs develop specific skills needed for a sustainable clean cooking market

Honduras

Activity	Deliverable	Process
<u>Activity 1</u> Assistance to the GoH to finalize its clean cooking roadmap	Update of the 2006 GACC market assessment report A 2030 Clean Cooking Roadmap Communication strategy document	Workshops to build ownership among different stakeholders Consultant services to finalize the roadmap Build on the on-going work under the SREP program to develop a country wide 2030 clean cooking roadmap Consultant services to prepare a communication strategy for awareness raising at the national level.
<u>Activity 2</u> Design of an implementation plan of the roadmap	Investment prospectus	Consultant services to develop realistic interventions and their financing plans Workshops with stakeholders including NGOs, private operators, consumers, commercial banks, micro-finance institutions, rural development banks, to ensure ownership and national validation of the investment prospectus.
<u>Activity 3</u> Design of producer, distributor and consumer financing products	Targeted financing products	Collaboration with the IFC, SMEs, NGOs, and consumer associations to develop financing products to facilitate the uptake of clean cooking solutions
<u>Activity 4</u> Support the implementation of standards and quality assurance by cookstove producers	Document on national standards and monitoring arrangements	Build on the on-going work at the University of Zamorano Collaboration between concerned government institutions and the University of Zamorano; Support development of quality assurance protocol and monitoring arrangements for its implementation. Work with IADB and the GACC to strengthen capacities at the University of Zamorano testing center to the benefit of the region.
<u>Activity 5</u> Capacity development activities at a national level	Workshops and study tour reports.	Targeted workshops and knowledge exchange activities aimed at helping the government, private operators and NGOs develop specific skills needed for a sustainable clean cooking market

Nicaragua

Activity	Deliverable	Process
<u>Activity 1</u> Assistance to the GoN to prepare a clean cooking roadmap	Market assessment report Clean Cooking Strategy Roadmap Communication strategy for awareness raising	Work with the GACC to conduct a market assessment report Workshops to build ownership among different stakeholders Consultant services to finalize the roadmap Consultant services to prepare a communication strategy for awareness raising at the national level
<u>Activity 2</u> Design of an implementation plan of the road map	Investment prospectus	Consultant services to develop realistic interventions and their financing plans Workshops with stakeholders including NGOs, private operators, consumers, commercial banks, micro-finance institutions, rural development banks, to ensure ownership and national validation of the investment prospectus.
<u>Activity 3</u> Design of producer, distributor and consumer financing products	Targeted financing products	Collaboration with the IFC, SMEs, NGOs, and consumer associations to develop financing products to facilitate the uptake of clean cooking solutions
<u>Activity 4</u> Support standards setting and quality assurance	Document on national standards and monitoring arrangements	Build on the on-going work at the University of Zamorano Collaboration between concerned government institutions and the University of Zamorano; Support development of quality assurance protocol and monitoring arrangements for its implementation. Work with IADB and the GACC to strengthen capacities at the University of Zamorano testing center to the benefit of the region.
<u>Activity 5</u> Capacity development activities	Workshops and study tour reports.	Targeted workshops and knowledge exchange activities aimed at helping the government, private operators and NGOs develop specific skills needed for a sustainable clean cooking market

Regional (Central America)

Activity	Deliverable	Process
<u>Activity 1</u> Regional report on cookstoves quality enhancement, standards and certification procedures	Technical Report	Report to be prepared in collaboration with SICA, the University of Zamorano, and Aprovecho
<u>Activity 2</u> Analytic piece on the importance of clean cooking for poverty reduction in Central America	Analytical Report	Report to be prepared In collaboration with the International Institute for Applied Systems Analysis.
<u>Activity 3</u> South-south exchange	Trip reports	Organize selective study trips within the region and also outside of the region to familiarize officials and practionners with best practices
<u>Activity 4</u> <u>Production of lab training and lab set-up DVDs</u>	DVDs	Explore collaboration with the ACCES program and the Colorado State University to develop a series of DVDs/pod-casts to demonstrate correct lab set-up for testing against IWA tiers.

Outreach at HQ (Washington DC)

Activity	Deliverable	Process
Activity 1 Internal outreach	BBLs Blogs Short videos Brochures Short articles	Attract high level speakers to the Bank to make presentation on clean cooking issues; Prepare blogs to be posted on Spark; prepare short videos and brochures on best practice cases.
Activity 2 Clean Cooking Expo at the I building lobby	Cookstove Expo	Organize a clean cooking expo in collaboration with selected cookstove producers

Annex 3: Producer/Distributor and Consumer Barriers with Financing Opportunities

Producer/Distributor Barriers	Public Financing	Private Financing
Lack of investment capital	Subsidize loans Guarantee credit Advisory services to develop business plans Facilitation of access to commercial loans Reform tax and duty regimes pertaining to energy technologies	Social impact equity investment Debt investment Integrate carbon finance in business plans
Lack of working capital	Facilitation of access to commercial loans	Develop SME products Micro-credit
Consumer Barriers	Public Financing	Private Financing
Lack of information on adverse health consequences of inefficient use of solid fuels	Awareness campaigns Media coverage	Product specific advertising Sponsorship of events to target potential customers

	<p>Demonstrations workshops</p> <p>Sponsoring of events to reach targeted audiences</p> <p>Social marketing</p>	
Poor access to clean cooking solutions	<p>Policy, legal and regulatory reforms to improve business climate</p> <p>Partnerships with private operators to develop clean cooking initiatives</p>	<p>Investment in production facilities and in distribution networks</p> <p>Investment in the expansion of existing distribution networks reaching the Bottom of the Pyramid customers</p>
Liquidity constraints to afford clean cooking solutions	<p>Guarantees to micro-lenders</p> <p>Partner with private operators to buy down costs using smart subsidies</p>	<p>Flexible repayment terms</p> <p>Micro-finance</p> <p>Integrate carbon finance to lower product costs</p>
Concerns about safety, convenience and durability of new cooking technologies	<p>Support research and development, standard setting, certification, quality control, monitoring and evaluation</p>	<p>Product field testing</p> <p>Investment on product quality enhancement</p> <p>After sales services</p>
Cultural resistance to clean cooking solutions	<p>Awareness raising</p> <p>Campaigns to promote empowerment of women</p>	<p>Demonstrations using early adopters</p>