Haiti

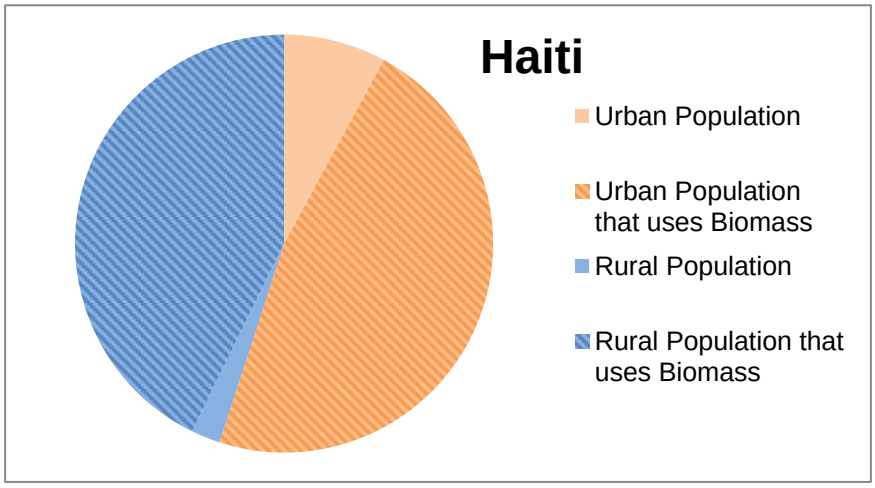
Total population*	**10,317,000**
Urban (%)	**56**
Rural (%)	**44**
% Population that uses biomass*	**92**
% rural**	**> 95**
% urban**	**85.6**
% Population with access to LPG and electricity**	**3**
Number of households that use biomass**	**2,452,482**
Number of annual deaths from HAP*	**9,987**
Number of annual child deaths from HAP*	**2,743**
Price of LPG (25 lb tank)	**NA**
Price of electricity (Kw/h)	**0.35 USD*** **
Price of Firewood	**NA**

*WHO observatory data base

**GACC (Global Alliance for Clean Cookstoves) web page

*** September 2015

HAP: Household Air Pollution



History of Efficient Cookstoves

Number of efficient cookstoves distributed so far	**35,000**
Type of technology distributed so far **Carbon stoves, some improved cookstoves and some solar stoves**	

National Program

There is no national program for efficient cookstoves. The Energy Ministry and the University of Haiti are involved in this issue, as well as the non-governmental groups T3 with Haiti, International Lifeline Fund and Trees, Water & People.

Additional Information[1]:

- At least 30% of income is used for the purchase of coal in the capital. It reaches 50% in the rest of the country.
- 12.5 % lower cost of LPG versus charcoal per meal.

Though now favors LPG fuel pricing, aggressive subsidies on equipment and retailer development are still required to overcome initial cost barriers to purchasing LPG stoves and cylinders and to sustainably ensure the availability of supply. Reliable and increasing supply or LPG after adoption is extremely important to ensure ongoing customer trust. Given their existing supply relationships, Manjekwits or charcoal vendors should be considered prime candidates to become LPG retailers.

Haiti has no legislation or rules governing the LPG sector. The introduction of regulatory framework governing technical and commercial standards is the most important foundation on which to base LPG future investment and growth in Haiti.

When they got smaller LPG cylinders, LPG penetration grew exponentially.

The lifetime of the stoves that uses charcoal is 6 months or less in most cases because charcoal is very saline (according to unofficial estimates some charcoal sold in Port Prince has 70 times more salt than normal charcoal).

[1] Source: USAID (2010) Assessment of Haiti Alternative Cooking Technologies Program

Papers published with studies in Haiti:

1. USAID (2010) Assessment of Haiti Alternative Cooking Technologies Program.

Washington, DC: United States Agency for International Development. Available at:

http://transition.usaid.gov/our_work/economic_growth_and_trade/energy/publications/haiti_cookstoves_assessment.pdf

Abstract

The Improved Cooking Technology Program aims to set Haiti on a path towards long-term sustainable cooking solutions through expanding the market for improved biomass cook stoves and cleaner fuels, developing clean energy businesses engaged in supplying the market with cleaner fuels and improved biomass cook stoves, educating consumers and generating market demand, and addressing regulatory issues that are limiting the expansion of Liquefied Petroleum Gas (LPG) in the household market. By promoting efficient stoves that produce lower greenhouse gas emissions, the program will earn additional revenues through global carbon markets.

Approximately 90 percent of Haitian households meet their energy needs through the use of firewood and charcoal while more than 30 percent of middle class family income is spent on charcoal for cooking in Port-au-Prince. Because of this economic dependency, charcoal production has had a devastating environmental impact that has led to significant deforestation and soil erosion. Cooking with firewood and charcoal is also exposing thousands of women and young children to 'indoor air pollution' which is now the second largest cause of child mortality under the age of five in Haiti. Despite these negative impacts, charcoal production and distribution is an important source of income in both rural and urban parts of Haiti.

Historically, urban households have been the largest consumers of firewood and charcoal. Over the past decade, wealthier urban households have begun to shift away from the exclusive use of charcoal and firewood for cooking and have begun to use cleaner liquid fuels, including kerosene and Liquefied Petroleum Gas (LPG). However, Haiti has no legislation or regulations governing the LPG sector. The lack of technical or commercial standards has created safety issues and allowed predatory business practices that have impeded the market's development. Yet with the inclusion of improved biomass cook stoves programs in the Clean Development Mechanism (CDM)—the mechanism through which carbon emissions are sold on a global market—private investors can lower the price of improved stoves close to that of traditional stoves in exchange for carbon offsets sold on the global compliance and voluntary carbon markets, providing a unique opportunity to stimulate and support the development of the carbon finance market in Haiti.

In response to these challenges and opportunities, the Improved Cooking Technology Program aims to establish the near-term and long-term foundation for a sustainable market for clean, efficient, affordable cooking solutions in Haiti. Its successful implementation will reduce pressure on Haiti's forests, encourage local and sustainable solutions, and create cooking options for Haiti that are clean, efficient, affordable, and able to meet local cooking needs. These accomplishments will be achieved through the program's four primary components:

- *Establishing a thriving local market and industry for household improved biomass cook stoves:* The strategy to this component is multi-faceted. The program will support development of a range of stoves to create a true market by targeting both supply- and demand-side constraints to long-term market growth.

- *Reducing charcoal consumption by large users, particularly food vendors, schools and orphanages:* The program will enable more than 10,000 street vendors, orphanages, and schools to switch from charcoal to LPG by increasing access to quality cooking equipment, fuel and, as relevant, financing.
- *Building a legal and regulatory framework for Liquefied Petroleum Gas (LPG):* The Improved Cooking Technology program will work closely with the Government of Haiti, LPG companies and distributors, and others to provide needed expertise and to help bring stakeholders to a consensus on LPG regulations, standards, and pricing.
- *Devising Carbon Finance and Financial Incentives for Scale-up:* Our strategy to establish local carbon assets that generate long-term revenue streams contributing to the sustainability of the market for improved cook stoves is predicated on development of a program of activities—a set of activities that can be registered as a program with the CDM—for these technologies.

2. Davis M.E., Rappaporta A. Air quality in developing world disaster and conflict zones — The case of post-earthquake Haiti. Science of the Total Environment 496 (2014) 22–25

http://www.sciencedirect.com/science/article/pii/S0048969714010055

Abstract

Data on air quality are remarkably limited in the poorest of the world's countries. This is especially true for post conflict and disaster zones, where international relief efforts focus largely on more salient public health challenges such as water and sanitation, infectious diseases, and housing. Using post-earthquake Haiti as the example case, this commentary explores air quality challenges in the developing world, highlighting concerns related to infrastructure damage from post-conflict and disaster settings. We contend that there is a growing and presently unmet need for further research and attention from the global health community to address these issues.

3. USAID. Audit of USAID Haiti's improved cooking technology program. 2014.

https://oig.usaid.gov/sites/default/files/audit-reports/1-521-14-005-p.pdf

4. World LPG Association*. Focus on Bringing Clean Cooking to Haiti.* The SWITCH Project in Haiti.

http://www.exceptionalenergy.com/uploads/Modules/Ressources/Focus%20on%20Bringing%20Clean%20Cooking%20to%20Haiti%20-%20The%20SWITCH%20Poject%20in%20Haiti-3.pdf

5. ESMAP. *Haiti: Strategy to Alleviate the Pressure of Fuel Demand on National Woodfuel Resources*. World Bank. 2007

https://www.esmap.org/sites/esmap.org/files/TR_11207_Haiti%20Strategy%20to%20Alleviate%20the%20Pressure%20of%20Fuel%20Demand%20on%20National%20Woodfuel%20Resources_112-07.pdf