

# GHANA CONSUMER SEGMENTATION STUDY

## EXECUTIVE SUMMARY

April 2014

The Ghana Consumer Segmentation Study builds from a market assessment conducted by Accenture Development Partnerships on behalf of the Global Alliance for Clean Cookstoves in early 2012. This foundational work provided an initial mapping of the Ghanaian cookstove industry and of the main consumer groups for cookstoves. The goal of the Ghana Consumer Segmentation Study is to identify and prioritize the market segments with the greatest adoption potential and to identify key success factors to maximize uptake of clean cookstoves and fuels in Ghana with a specific focus on technology features, payments schemes, marketing messages and distribution channels. In order to deliver on these objectives, the workflow was split in two main stages. Phase 1 consisted of a quantitative analysis of national survey data collected during the 5<sup>th</sup> wave of the Ghana Living Standards Survey (GLSS 5) from which key market segments were derived based on population size, purchasing power, and economic incentives to adopt clean cookstoves and fuels. Phase 2 involved an in-depth qualitative exploration of the key market segments through 12 ethnographic in-home interviews and 6 focus groups conducted in three different regions: Greater Accra, Ashanti and the Western region. The three target regions were selected because they host the largest population belonging to the key market segments. In each region, current cooking habits were observed during the in-home ethnographic interviews and live cooking exercises were conducted during the focus groups to assess the potential of innovative product features.

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## PHASE 1 – QUANTITATIVE SEGMENTATION: SELECTION OF KEY MARKET SEGMENTS

The GLSS 5 is a nation-wide survey which was conducted between September 2005 and September 2006 under the supervision of the Ghana Statistical Service, with support from the World Bank. The survey collected detailed socio-economic information including demography, health, employment, housing conditions, access to basic services, as well as income and expenditure.

Although the publication of the data dates back to 2008, GLSS 5 was selected as the main source of data to build the consumer segmentation because<sup>1</sup>:

- It provides a single comprehensive nation-wide dataset from which to conduct multivariate analysis with a large sample size (>8,600 households).
- It incorporates questions on cooking habits (especially fuel usage).
- To the best of our knowledge, it is the most recent publicly available dataset of its kind for Ghana at the time of conducting this study (with GLSS 6 data collection still on-going in October 2013).

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<sup>1</sup> A robustness check was conducted with more recent data, see p. 3.

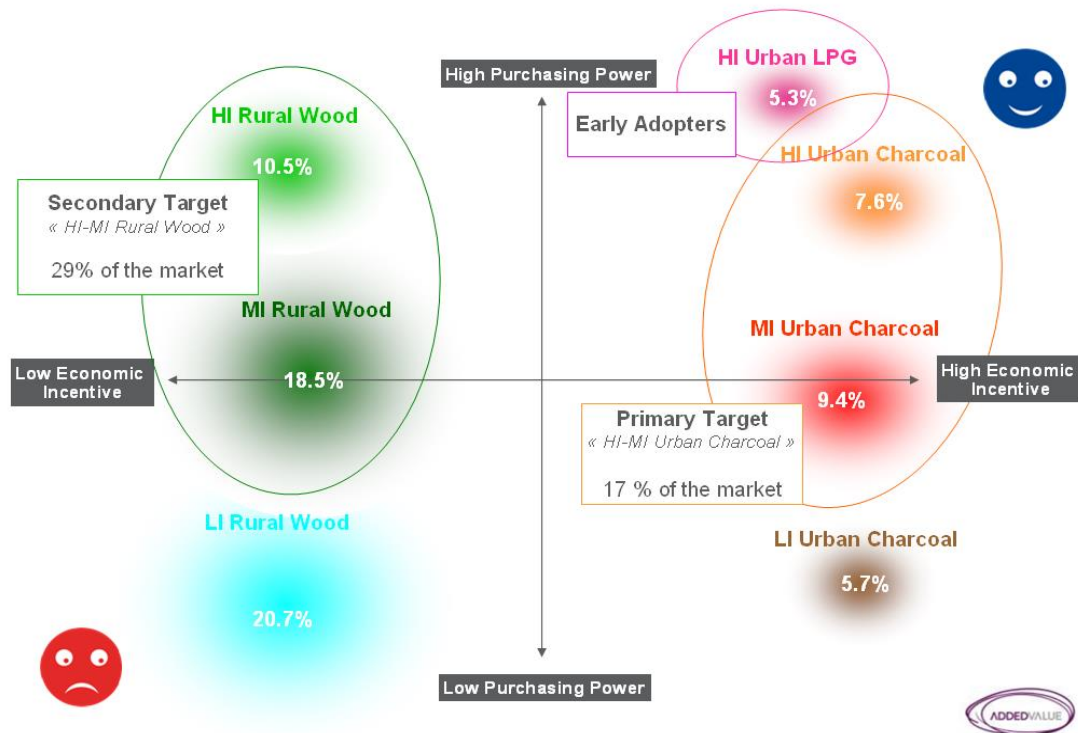
## INITIAL SEGMENTATION

Two key variables were extracted from the survey and used to segment consumers into meaningful target groups:

- **Purchasing power:** the ability of each segment to invest in products other than basic goods and services (food, water, and housing). Mean annual expenditures per household was used as a proxy variable to segment households according to their purchasing power.
- **Economic incentive to invest in improved cookstoves:** the impact of the local price of charcoal or availability of firewood on a segment’s willingness to pay for improved cooking solutions. The segmentation is based on the hypothesis that urban charcoal users rely on a scarce and expensive cooking fuel while rural wood users have access to a more abundant and more affordable source of cooking energy. Logically, achieving fuel savings attributable to improved cookstoves would be a higher priority for urban households than for rural households. This hypothesis is supported by GLSS 5 data which shows that a large majority of urban households (70.9%) reported fuel expenses in 2006, while only 37.5% of rural households had incurred fuel expenses during the 12 months prior to the interview.

The seven largest market segments derived from the analysis are mapped according to these two variables in the figure below:

**Figure 1 - Mapping of the Main Market Segments<sup>2</sup>**



<sup>2</sup> Monthly household expenditure is used as a proxy to assess purchasing power. For instance, in Accra, a 5 member households belonging to the high purchasing power category will spend more than 944 GHc per month, households who have a medium purchasing power spend between 444 GHc and 944 GHc per month, households with a low purchasing power spend less than 444 GHc per month. All figures derived from GLSS 5 and presented in 2013 inflation adjusted GHc. See full Ghana Consumer Segmentation Report for details.

The segmentation pointed to two key market segments to be targeted by clean cookstove and fuel promoters in Ghana:

1. **High and middle income urban charcoal users** (HI-MI Urban Charcoal): They account for 17% of the market, roughly **1.04 million households**<sup>3</sup>. Middle and high income urban charcoal users have a higher economic incentive to switch to clean cookstoves than firewood users. This is also the target group with the highest purchasing power and therefore the highest adoption potential. Low income urban charcoal users only accounted for 5.7% of the market and should be considered as a separate, more challenging segment, due to their low purchasing power.
2. **High and middle income rural wood users** (HI-MI Rural Wood): This segment represents 29% of the market or **1.8 million households**. It represents an interesting secondary target. While their economic incentives are likely lower, they may be sensitive to benefits other than savings (comfort, cleanliness, status, and others). This population thus seems worth exploring further.

LPG users are an interesting peripheral target as they represent a large group of early adopters of new cooking solutions. It was decided to include them in the qualitative phase in order to understand what had converted them and to develop a relevant strategy for expansion.

## ROBUSTNESS CHECK

The results of the 2010 Population and Housing Census have been used to check the robustness of the segments defined with the GLSS 5 data. The Census shows that in 2010:

- 40% of all households still used wood as their main fuel for cooking (a 17.5% decrease compared to GLSS 5).
- Charcoal was the main fuel for 33.7% of households (compared to 30% in GLSS 5).
- The share of households who used LPG as main fuel had reached 18.2% (it was only 9% in GLSS 5).

The significant increase in the share of LPG users and the simultaneous decrease in wood usage suggest that the current size of the HI-MI rural wood segment is likely to be overestimated in the segmentation developed from the GLSS 5 data. The size of the LPG segments is also most probably underestimated. On the other hand, the size of the charcoal segments, the key target identified in this report, is probably still close to what it was in 2005. There is of course a high likelihood that the share of high income households decreased among charcoal users as some of them adopted LPG. Conversely, the share of low income charcoal users might have increased as low income households abandoned wood for charcoal. We will only be able to confirm or reject these hypotheses when the next wave of the GLSS is released in 2014. Overall, however, the more recent data from the 2010 Population and Housing Census supports the decision to select middle and high-income urban charcoal users as a key target group for further research.

## GEOGRAPHIC ANALYSIS

Following the initial segmentation, a geographic analysis of the priority target segments was conducted in order to prioritize those of the ten Ghanaian regions which seemed to have the highest market potential and select fieldwork areas for further qualitative research:

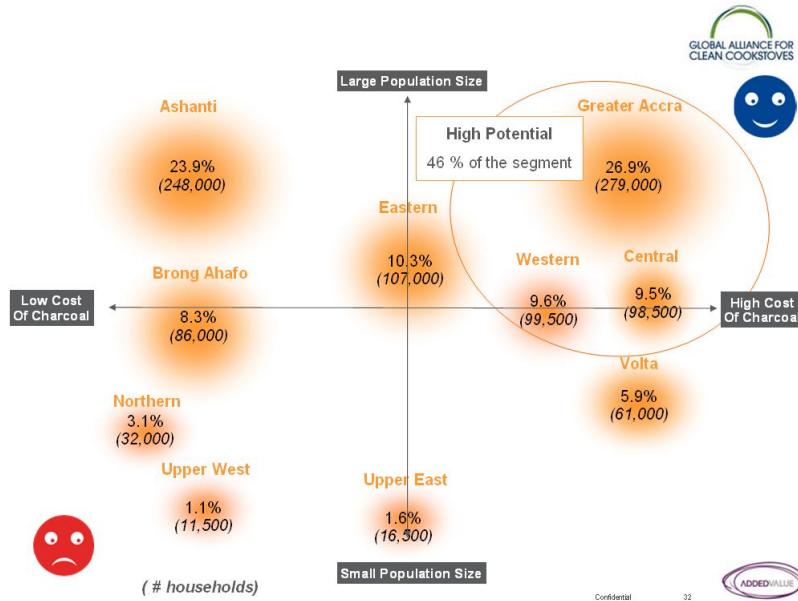
1. *HI-MI Urban Charcoal*: Greater Accra, and the Western and Central regions were identified as the most promising areas for the promotion of clean cooking solutions among high and middle income urban charcoal users due to

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<sup>3</sup> Total market size in 2010: 6.1 million households. See: Global Alliance for Clean Cookstoves (2012): *Ghana Market Assessment – Sector Mapping*, p.12

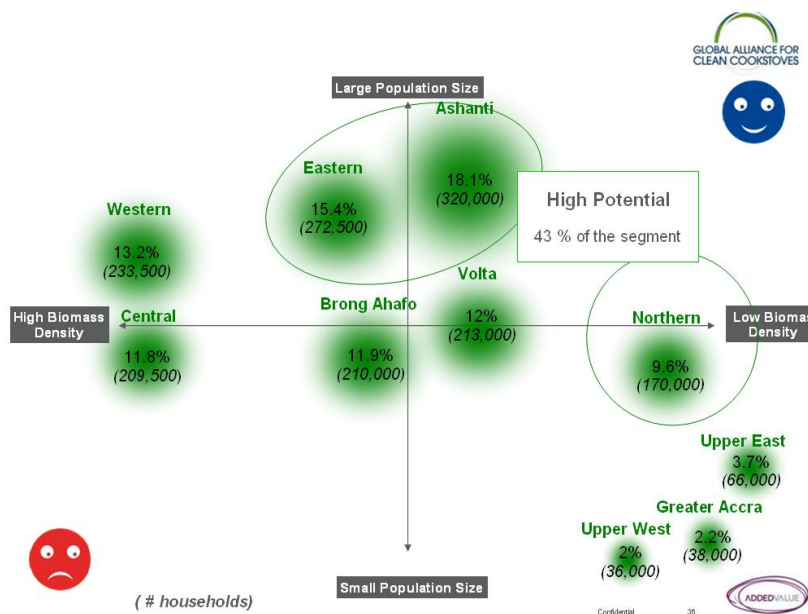
their population size and to the high price of charcoal in these regions. Together, the three regions represent 46% of the HI-MI segment, or a total of 480,000 households (based on 2005 data).

**Figure 2 – Mapping of the HI-MI Urban Charcoal Segment by Region**



2. **HI-MI Rural Wood:** The Northern region along with Ashanti and Eastern regions offer the best perspective for clean cookstove uptake because they host relatively large high and middle income rural populations and the density of biomass suggests that there is less wood available for collection in these regions than in other populated regions such as the Western and Central regions. This creates a higher incentive to adopt more efficient cooking technologies or alternative fuels. The three regions represent 43% of the segment or 760,000 households (based on 2005 data).

**Figure 3 – Mapping of the HI-MI Rural Wood Segment by Region**

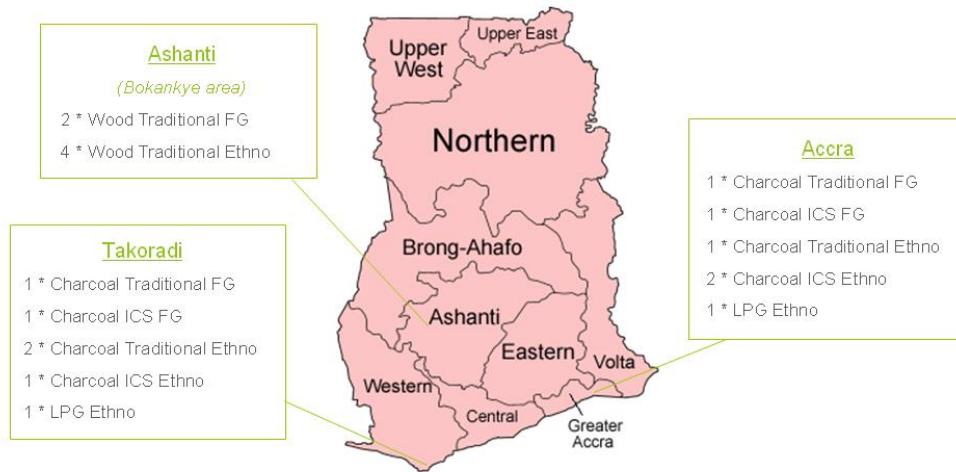


Two key regions were selected for the fieldwork with urban charcoal users: Greater Accra and Western (Takoradi). Ashanti is the region which hosts the largest population of HI-MI Rural Wood Users and was selected as the fieldwork location for this target.

**PHASE 2 – QUALITATIVE EXPLORATION: ETHNOGRAPHIC INTERVIEWS AND IN-FIELD TESTING**

The research approach for this phase combined in-home ethnographic interviews during meal preparation with live-testing of products through focus group sessions in order to understand consumers preferences related to cooking appliances and fuels:

**Figure 4 – Overview of Fieldwork Areas**



The fieldwork focused on three key targets: Urban Charcoal Traditional stove users, Urban Charcoal ICS stove users, and Rural Wood Traditional stove users:

**Table 1 – Main Recruitment Criteria**

Urban Charcoal Traditional	Urban Charcoal ICS	Rural Wood Traditional
<ul style="list-style-type: none"> <li>Use charcoal as their main fuel</li> <li>Don't currently use a Gyapa/ICS</li> <li>Live in an urban area</li> <li>Monthly household income &gt; 350 GHc in Accra and &gt;290 GHc in Takoradi</li> </ul>	<ul style="list-style-type: none"> <li>Use charcoal as their main fuel</li> <li>Use Gyapa/ICS or LPG daily</li> <li>Live in an urban area</li> <li>Monthly household income &gt; 350 GHc in Accra and &gt;290 GHc in Takoradi</li> </ul>	<ul style="list-style-type: none"> <li>Use wood as their main fuel</li> <li>Purchase their wood</li> <li>Live in a rural area</li> <li>Monthly household income &gt; 270 GHc</li> </ul>

## DETAILED METHODOLOGY

*12\*3 hour ethnographic interviews during meal preparation:* Added Value qualitative research experts visited sample households corresponding to the target groups defined during the quantitative segmentation. The visits took place during meal preparation. The research team spent time in the respondents' homes observing their cooking habits and probing on relevant topics:

- Researchers watched respondents prepare a meal.
- They inquired about and observed cooking methods and recipes.
- They visited the respondents' homes and assessed their current level of access to new technologies and home appliances.
- They took pictures of stoves, pots, ingredients, and cooking environment.
- In some cases they observed meal consumption.

*6\*4 hour focus groups with cooking workshop:* In this phase the project team tested sample cookstoves, fuels, and marketing messages to refine their understanding of the needs of the 3 priority segments and to assess the potential of new product offers and marketing mixes to increase the uptake of clean cooking technologies in these segments. The focus group flow was as follows:

- Initial discussion of cookstove and fuel preferences
- Presentation of sample products and visual assessment with participants
- Group preparation of a typical recipe: each participant got to use one sample product
- Feedback and comparative assessment of technologies after testing
- Exposure to marketing messages presented on boards and read out loud to participants (to avoid bias from visual execution)

## EXPLORATION OF CURRENT COOKING HABITS

The target households live in relatively modest one or two bed-room apartments. However they invest a lot in equipment to furnish their home, including the kitchen. Amongst married couples, the wife is the main cook and is also the main person in charge of grocery shopping. Most women have at least one professional occupation or income-generating activity and develop strategies to save time on cooking tasks, especially in urban areas. Technologies which can help them manage their time are in high demand (microwave, LPG).

Food habits and food priorities are heavily influenced by the children's needs and requests. A lot of attention is paid to the nutritional content of the food which is served to them (proteins, vitamins). This is reflected in local advertising messaging. Health professionals have frequent access to women and successfully educate them about healthy food behaviours. They could be a powerful channel to communicate messages about clean cooking solutions.

Women's cooking behaviours underline the need for mobility and for better usage of space. Products which enhance their interior and make a statement about their social status are also in high demand (such as kitchen cabinets). Priorities for kitchen equipment focus on storage capacity (refrigerator, freezer), time-saving (microwave, LPG) and diversification of recipes (oven for baking).



Overall, improved cookstoves seem to be within the financial reach of the target, but replacing one’s coal pot is likely to be quite low in their list of priorities compared to the acquisition of another household good with higher perceived value, such as a microwave, a freezer or a blender.

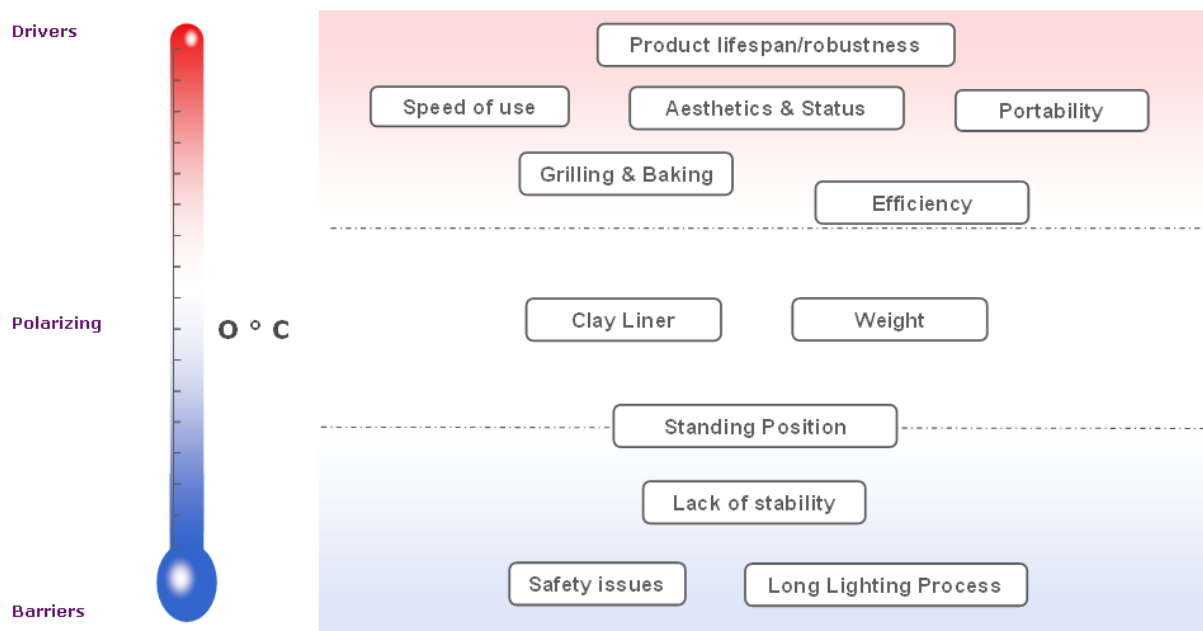
### OVERVIEW OF CURRENT FUEL AND STOVE PREFERENCES

Urban and rural targets regularly mix fuels and cookstove technologies. LPG users have to resort to charcoal because LPG is sometimes hard to find or because charcoal is preferred to prepare specific recipes such as banku. Many charcoal users also have a LPG stove, although they don’t always use it. Wood users also use charcoal when it’s raining or when they are in a hurry. High prevalence of fuel mixing means that there is a lot of overlap between the various target groups and the types of stoves that can be promoted among them.

Consumers are familiar with a broad range of cooking options for each fuel type. The woodstove segment is still largely dominated by 3-stone fires although some alternatives exist (tire-rim, clay stove). The charcoal cookstove market is dominated by traditional coal pots and Gyapas. While the Gyapa has convinced a broad consumer segment, many are still reluctant to use it because they have doubts about the robustness of the clay liner and the value of their investment. Safety issues and fuel shortages are driving some consumers away from the LPG category. Those who would still like to use LPG are particularly attracted to the 4 burner stove with oven, due to its versatility. LPG is often used to heat up food rather than for proper cooking and therefore competes with microwaves more than with other stoves.

When selecting a new cookstove, consumers focus their attention on material quality and durability first and foremost. Other important criteria include speed-of-use, aesthetics, portability, and versatility (grilling and baking options). Efficiency isn’t a very strong purchase criterion ex-ante but will drive loyalty once actual savings have been observed by users. Fire lighting issues will be a strong barrier to the adoption of a product.

**Figure 5 – Overview of Current Cookstove Purchase Criteria**



## PRODUCT TESTING AND EVALUATION

A range of 3 improved charcoal stoves, 3 improved wood stoves, 1 ethanol stove and 1 LPG stove were selected for testing through an open application process<sup>4</sup>. The improved charcoal stoves and the liquid fuel stoves were tested with the urban targets in Accra and Takoradi. The improved wood stoves were tested with the rural target group in Ashanti. All the products were tested in at least two different focus groups and by at least four different cooks. The cooking exercise consisted in the preparation of 'banku' a local staple food made of a mix of corn dough and cassava dough. This dish was selected because it is very common, yet quite challenging to prepare with stove and cooking utensils which haven't been specifically designed for this purpose - an important factor in ensuring that improved cooking products meet the needs of Ghanaian cookstove users. It therefore appeared to be the most relevant acceptance test for the products: most of the participants believed that a cookstove which can prepare banku can prepare any food.

### OVERALL DRIVERS AND BARRIERS

**Robust material quality:** Across all stove categories and target groups, material quality was the strongest driver. Participants were attracted to high-quality metal such as stainless steel or cast-iron. Clay and plastic parts were polarizing because they are considered fragile. Some women will refuse to buy a stove containing a clay insert because it is difficult to predict when the clay will break.

**Speed-of-use:** The target women also valued features or fuels which accelerate the cooking process. Fuels which are easy to light and have a very efficient combustion process will increase the speed of cooking and help save time. Some wood stoves incorporated an electric fan which provides similar benefits. Two burner stoves were also positively assessed for similar reasons. On the other hand, some stoves proved very difficult to light leading to wasted time and stress.

**Ease-of-use:** Features which improved the comfort and cleanliness of the cooking experience generated positive reactions. The most frequently mentioned features were ash collectors preventing ashes from spreading on the floor of the kitchen and wooden handles which add to the beauty and ease-of-use of a stove. The stoves which were easy to transport and to use in different settings, both on the floor and as table top stoves, were positively assessed. On the contrary, heavy, bulky products received negative comments.

**Fuel savings:** All else equal, the interest of participants for a given stove increased significantly when actual fuel savings could be easily noticed during the cooking tests. Being able to personally experience or observe the fuel savings is key to activate this driver. What really drives interest is the actual increase in efficiency delivered by the stove (for instance thanks to a smaller fuel chamber). On the other hand, specific features which can be associated with efficiency improvements turned out to be only moderately attractive. Indeed, most respondents consider air regulation doors or power regulation knobs as convenient devices but few of them actually used them during the cooking process. Similarly, pot skirts were considered as a good reason to believe that a stove would save fuel, but didn't drive a lot of interest and sometimes prevented cooks from using iron rods to prepare their banku.

**Barriers to adoption:** Finally, it proved difficult to prepare *banku* with some of the stoves either because they had high edges which prevented cooks from using their iron rods or simply because their design lacked stability. This was also a significant barrier to adoption. Smaller stoves also occasionally received more minor negative comments because participants feared that they would not be able to use their larger pots on them. Many cooks tended to fill these smaller stoves to overflowing which sometimes led to minor airflow issues.

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<sup>4</sup> A request for applications for stove models to be included in the Ghana Consumer Study was published on the Global Alliance for Clean Cookstoves website in November 2013.



**Table 2 – Key Drivers and Barriers**

	<b>Drivers</b>	<b>Barriers</b>
<b>Strong (+++)</b>	<ul style="list-style-type: none"> <li>▪ High-quality metal</li> <li>▪ Increased speed of cooking</li> <li>▪ Electric fan or fast fuels</li> <li>▪ Two burners</li> <li>▪ Ash collector</li> <li>▪ Heat-proof handles (wood)</li> <li>▪ Fuel savings</li> <li>▪ Lightweight, portability</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fragile materials (clay, plastic)</li> <li>▪ Difficult lighting process</li> <li>▪ Heavy weight, lack of mobility</li> <li>▪ High or wide edges preventing use of iron rods</li> <li>▪ Lack of stability, shaking pots</li> </ul>
<b>Moderate (+)</b>	<ul style="list-style-type: none"> <li>▪ Air/power regulation device</li> <li>▪ Pot skirt</li> </ul>	<ul style="list-style-type: none"> <li>▪ Small size</li> </ul>

#### SPECIFIC EVALUATION OF IMPROVED CHARCOAL STOVES

Within the charcoal stove category, all the cookstoves tested were easy to light and use for the vast majority of respondents. Respondents were already familiar with the leading improved charcoal cookstove design currently promoted in Ghana (Gyapa). They were happy to be presented with alternatives. All the designs that were introduced were considered aesthetically appealing, especially the most innovative ones. Although this was not the main spontaneous driver prior to testing the stoves, all women commented on the greater fuel efficiency when compared to their traditional coal pots. Other important drivers included the quality of the materials used to manufacture the stoves, the increase in stability over the coal pot and the ash collector which was incorporated in all the designs tested. The main barriers observed with the charcoal stoves were the use of a ceramic liner to insulate one of the stoves and the difficulties faced when using the iron rods with another of the stoves, as the rods slid on the pot skirt. It was also noticed that a strong smell of burning paint was released by one of the stoves during cooking, probably due to the use of a painted surface which isn't adapted to high temperatures.

#### SPECIFIC EVALUATION OF IMPROVED LIQUID STOVES

The ethanol stove tested during the study was very well received by participants who immediately saw it as a safer alternative to LPG. The LPG stove suffered from some of the main problems associated with LPG as a cooking fuel: safety concerns and difficulties to prepare banku with iron rods. Some of the key benefits identified while testing these stoves include the very noticeable time savings achieved thanks to liquid fuels, and the ease of use of the stove for both lighting and flame regulation. In addition, the ethanol stove was light and easy to transport: thus some participants chose to use it as a table-top stove while others preferred to use it on the floor. It proved very stable and easy to use in both settings. One of the remaining challenges for this stove/fuel is the need to reassure consumers on fuel availability and price, as is the case for LPG.

#### SPECIFIC EVALUATION OF IMPROVED WOODSTOVES

While some woodstoves received very good evaluations, this category proved the most challenging to use for participants. There was a longer learning curve to follow for woodstoves because most focus group participants were still used to cooking with a three-stone fire. Participants needed extra support to light each of the three stove models that were tested, in many cases because they were unsure about the right amount of fuel to feed to the stove. Overall,

however, they were able to successfully and comfortably prepare their banku with two of the three stove designs after receiving additional explanations. These initial lighting challenges point to a need for more intensive training and awareness raising among wood users.

The key drivers for this category were relatively similar to those observed for charcoal stoves and liquid stoves: quality materials, easy lighting, a design that provides for ash collection, and portability. Thus, the stoves that received the best evaluations from users were those which were easiest to light and involved the simplest learning process. Two of the sample stoves incorporated an electric fan which was easy to use for all participants. When the power of the electric fan could be regulated, most participants tended to leave the fan on high-power to accelerate the cooking process. This might result in lower fuel savings than could otherwise be achieved with this type of stove.

#### SPECIFIC FEATURES DRIVING ADDITIONAL VALUE

All else being equal, respondents admit that they are prepared to pay a bit more for specific features which add value to their product:

1. *Durable metal coating*: The durability provided by good materials warrants a premium in the minds of most respondents. The most valued features were components made of stainless steel, cast iron, or metal with a black and mat finish – which was often called “non-stick” by respondents. The extra price for adding this feature to a wood or charcoal stove ranges from 10 to 20 GHc according to most respondents.
2. *Wooden handles*: Two of the sample stoves were provided with wooden handles which elicited positive comments among both urban and rural respondents. The extra price respondents declare being willing to pay for this feature is however quite low (max 10 GHc).
3. *Electric Fan (wood stoves only)*: Two of the sample wood stoves incorporated electric fans. The comfort and speed-of-use provided by an electric fan also creates extra willingness to pay and the conversations conducted with the participants suggest that they would be prepared to pay an extra 10 to 20 GHc for this feature. This feature was only tested with rural wood users.

#### FINANCIAL SERVICES

Urban middle-income and high-income charcoal users enjoy a good level of access to financial services<sup>5</sup>. They are served by the more than 600 formal financial institutions currently registered in Ghana and they trust commercial banks in particular to take care of their savings. However, borrowing money from a bank or an MFI isn't common among the target groups, as this type of commitment conveys very negative associations (stress, harassment, high cost). Buying products on credit, on the other hand, is a familiar type of arrangement with which all respondents are comfortable.

Rural wood users are significantly less integrated into the financial market: few of them have access to formal savings services from a bank or a microfinance institution, even less so from loan services.

When it comes to offering financial services to help consumers invest in clean cooking solutions, formal loan services offered through financial institutions aren't attractive, in part because domestic cookstoves are seen as non-productive assets and in part because the price point that respondents consider for such products doesn't make a loan necessary. The most attractive services are by far “payment plans”, referred to as “credit” by most Ghanaians. These are seen as

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<sup>5</sup> In 2005 already, 39% of urban households owned a savings account. See Ghana Statistical Service (2008): *Ghana Living Standards Survey - Report of the 5<sup>th</sup> Round*, p. 117.

more flexible and less risky than a loan. Although women know that vendors charge them more than the cash price for products purchased on credit, they don't see this as a barrier to buying a non-productive good on credit.

In order to appeal to Ghanaian women, financial services for clean cookstoves should seek to mimic the principles of traditional "credit": limited paperwork, flexible payment terms, no formal interest, and convenient payment collection mechanisms.

## COMMUNICATION AND DISTRIBUTION CHANNELS

**Advertising and purchase decisions:** The target groups are receptive to advertising, especially when displayed on TV. Gyapa advertising has had a significant impact on respondents and many women explained that Gyapa adverts had attracted their attention to the product. Thus, there appears to be an opportunity to use advertising, particularly on TV to promote clean cookstoves. Other than TV advertising, word of mouth through friends and relatives remains by far the most trusted source of information. Almost all participants mentioned their friends and relatives as their main influence when it comes to making a purchase decision. The husband isn't necessarily the main decision maker for home appliances, especially in the case of working women who generate their own income and have more autonomy in their purchase decisions. However, respondents would often seek their husband's opinion on a given brand or product before making a purchase.

**Distribution:** Three main types of networks emerged as potential distribution/marketing channels for clean cooking solutions: traditional markets, department stores or electrical goods stores, and health centers. The main local open air market is the place most spontaneously mentioned by most participants when asked where they would go to purchase a new stove. These retail centers are the location where clean cookstove promoters are most likely to meet their target population. Department stores and specialized electrical goods stores are visited quite often by the urban targets. They are the main points of sale for bigger home equipment (fridge, LPG stoves) along with second-hand resellers. The three main retail networks mentioned are Melcom, Binatone, and Tuman. Some of them already offer payment facilities to their clients. Health centers and hospitals came up very often throughout the fieldwork as locations where young women receive advice on health related behaviors such as nutrition or disease prevention. Health professionals are very good points of contact with young mothers in particular because they visit them very frequently for the weighing of their babies. The advice received sometimes leads to a decision to purchase a product, as in the case of mosquito nets, especially if retail points are located close to the hospital.

**Brands:** The target women are very sensitive to brand names, especially for products in the electrical appliance category. Some of the brands which enjoy good notoriety and seem to be trusted include: Sharp, Philips, Kenwood, and Samsung. Partnering with a renowned brand could potentially attract more women to clean cooking technologies.

**Communication messages:** In order to assess the relevance of various communication messages for the target groups, short communication ideas were presented to the respondents during the focus groups. Due to the amount of content covered during the groups, only 3 ideas were tested. Each of them revolves around a different benefit:

1. *Savings* : The ability to save fuel and money thanks to improved cookstoves
2. *Modernity*: The pleasure of cooking with comfortable, high-quality equipment
3. *Health*: Enjoying a cleaner and healthier kitchen thanks to smoke reduction

The communication idea which focused on "savings" as a key benefit was by far the most relevant and the most appealing to a majority of respondents. Consumers like the clear and concrete benefit in this idea. The promise of saving 40% on fuel consumption sounds true to them (after trial) and has the potential to drive purchase. It would be useful to test this idea alongside other benefit areas uncovered during the ethnographic work. These include: durability, portability and

time-saving. There may also be an opportunity to combine durability with fuel efficiency to tell an overall better value story.

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## CONCLUSION

The consumer segmentation developed in this report has highlighted two key segments that clean and efficient cooking technology promoters can target:

1. **High and middle income urban charcoal users** (17% of the market, roughly 1.04 million households).
2. **High and middle income rural wood users** (29% of the market or 1.8 million households).

An in-depth qualitative exploration of the two target segments shows that cookstoves are not a priority investment for the target women because they generally feel they already have something that works for them (most often an old coal pot). They aspire first and foremost to the acquisition of a microwave, a freezer or a blender or to improve their kitchen's layout. There is no clear single-minded cookstove benefit that these women are spontaneously looking for and that their current stoves are not delivering. However, upon probing, there are several instances where they might be willing to trade up to a new cookstove if they can be convinced that it will address a combination of their unmet needs/desires for an improved cooking experience:

- They are drawn to robust, high quality, aesthetically pleasing materials, and more broadly to products that reflect favorably upon their status.
- They are receptive to products that can help them to cook with greater ease and speed, or which enable them to diversify their cuisine (grilling, baking).
- They are also sensitive to the idea of saving money on fuel. Although this benefit is not top of mind, a positive product experience shifts it upwards in their priority hierarchy.

These conclusions are valid for all the key targets, be they wood stove users, traditional coal pot users or Gyapa users, and even for LPG users. Indeed LPG stove owners tend to use their stoves only punctually due to price, safety and fuel availability issues. They are on the lookout for alternatives and also use coal pots intensely.

When it comes to offering financial services to help consumers invest in clean cooking solutions, payment plans should be the primary financing vehicle. These are seen as more flexible and less risky than a loan. Payment plans could be offered in partnership with a leading department store or specialized appliance store. Indeed, the study identified large department stores and electrical appliances store as key cookstove distribution channels because the target groups visit these stores on a frequent basis and trust them when it comes to purchasing high-technology products for the kitchen. Health centers and hospitals also seem to offer a good network for the promotion of clean cookstoves and fuels because health professionals play an important role as influences in the lives of the target women. Both networks deserve to be explored alongside traditional channels (open air markets).

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