



Understanding Consumer Usage and Attitude Towards Clean Cook Stoves

Report on The Formative Qualitative Research for Clean Cooking Stoves Behavioral Change Campaign (BCC)

Prepared For:

Population Services Kenya

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Acronyms and Abbreviations

BCC: Behaviour Change Communication

BOP: Bottom of the Pyramid

CCS: Clean Cook Stoves

HAP: Household Air Pollution

ICS: Improved Cook Stoves

KCJ: Kenya Clay Jiko

LPG: liquid Pressurized Gas

MFI: Micro Finance Institution

SEC: Social Economic Class

SKU: Stock Keeping Unit

WOM: Word Of Mouth

Executive Summary

Introduction

This report presents findings from an exploratory formative study broadly aimed at assessing knowledge, attitude and practices regarding Clean Cook Stoves (CCS), motivations and barriers towards the stoves. PS Kenya contracted TNS RMS East Africa to be able to undertake the formative study, which was conducted from September to October 2016.

Methods

This study was qualitative in nature and was conducted in 7 counties: Nairobi, Kiambu, Kajiado, Muranga, Meru, Nakuru and Bungoma. The study considered twelve (12) focus group discussions (FGDs) and six (6) in home visits to gather information from consumers and potential consumers.

The data was analyzed known as "social anthropology" as described by Miles and Huberman (1994). This relies primarily on ethnography previously called "observational research". TNS used this approach to provide detailed, or rich, descriptions across multiple data sources. The approach used a recursive approach where they sifted, coded and sorted data as they were, and followed up analyses with ongoing observations and interviews to explore and refine patterns. This approach was complemented by use of "interpretive approach" in some cases. This approach presented a holistic view of data rather than a condensed view. The analysis relied on thematic ordered matrix which was used to document emergent themes and issues borrowing heavily on PS Kenya's Framework for Qualitative Research (FOQUS). TNS relied on other secondary sources of data to strengthen some of the narrative within the reporting and support some of the emerging themes.

Findings and Conclusions

Knowledge of CCS is mainly tagged to particular brands and is based on product attributes. Main concerns as pertains to health are of a more immediate nature such as irritation from smoke with limited mentions of long term effects of indoor pollution on health.

Key motivations for uptake are fuel efficiency, cooking efficiency, hygiene and status. Challenges that emerge regarding CCS are the initial cost outlay, limited range of sizes of CCS and access owing to poor distribution of the stoves especially in rural areas. Supermarkets did emerge as important points of purchase and awareness creation through shelf displays.

Different meals and foods drive usage of various types of stoves and in most cases these different types of stoves are in use in the same household.

The two key meals prepared in a day are breakfast and dinner each necessitating different speed and heat requirements which then dictate the type of stove used. Faster cooking with moderate

heat is required for breakfast which promotes usage of gas and paraffin stoves. Dinner typically requires more heat and has the luxury of a longer prep time where most of the respondents used clay "jiko" or firewood.

A gas stove is perceived as the ideal source of heat for cooking but the main barrier is the high initial cost and the refill cost. The CCS cuts across these varying needs and can address them adequately. It can be a close alternative to the gas stove.

TV is an instrumental channel for information on CCS. Other channels include radio and word of mouth (WOM). WOM emerged as a particularly influential channel for triggering uptake especially through testimonials from other users within the target consumers' circles. Personal sales have also been mentioned as having induced purchase.

Younger consumers are especially active on social media and can be targeted through such channels. The aspirational aspect of CCS is also a factor that can induce trial with younger consumers.

Initial cost outlay is perceived as high though the trade-off for users is in the long term benefit of savings on operational costs.

Women are key influencers on the decision to purchase and also in the purchasing themselves. Men are in some instances involved in the financing of the stoves.

Barriers to overcome in order to increase uptake are the initial high cost outlay, increase access to CCS through better distribution and communication of product attributes to address concerns on ability to cook large amounts of food. Other motivators include knowledge of the health and hygiene benefits such as less smoke emissions.

A summary archetype of the CCS user is a consumer from Social Economic Class (SEC) C1-C2 who does not possess high disposable income, but is willing to incur the purchase cost of a CCS due to the long term economic benefit.

The non-user is also from SEC C1-C2 and requires being convinced on the long term economic benefit to mitigate the barrier of high initial cost outlay.

1 Introduction

1.1 Background to PS Kenya Intervention

Population Services Kenya (PS Kenya) is a non-governmental organization (NGO) specializing in behaviour change communication (BCC) and social marketing of health-related products and services

PS Kenya would like to design and implement a BCC campaign to promote the adoption and consistent use of clean and efficient cook stoves and fuels in Kenya. Using energy-efficient cook stoves has multiple benefits which include – but not limited:

- 1) Reduced fuels expenses
- 2) Reduced carbon emission – environmental benefits
- 3) Improved in-door air quality amongst others

The BCC campaign is expected to deliver 3 intermediate outcomes:

- 1) Increased knowledge and awareness of benefits of clean and efficient cook stoves and fuels
- 2) Increased availability and access to clean and efficient cook stoves and fuels
- 3) Strengthened capacity in national charcoal cook stoves sector

BCC activities will primarily target urban and peri-urban populations. Women will be targeted as the primary audience, given their pivotal role in the adoption and sustained use of clean household cooking solutions and their central responsibility for managing domestic energy and cooking.

In order to design an evidence-based BCC Strategy, PS Kenya contracted TNS to conduct a formative research that provided an in depth understanding of the consumer.

1.2 Research Objectives

It is from this background that TNS was commissioned to carry out an exploratory formative research whose key objectives were as summarised below:

- To establish current knowledge, attitudes, motivations and behaviours around use of clean cook stoves and fuels
- To identify the key factors that influence knowledge, attitudes and practices around adopting clean cook stoves
- To establish satisfaction points and pain points surrounding use of clean cook stoves
- To unearth key barriers to adopting clean cook stoves amongst non-users
- To gauge willingness to pay for clean cook stoves

Insights gathered from this research will be used in the designing and development of a targeted communications campaign focusing on 11 counties.

2 Methodology

This was a cross sectional study whose methodology involved collecting and collating evidence from the following sources:

- Desk review of relevant project reports and documents
- Qualitative research study

2.1 Literature Review

Desk research was conducted on two levels; the first level was to gather information to advice the study and the subsequent phase supplemented the study findings. The literature review has been incorporated into the main report to support the main findings.

2.2 Qualitative Research Study

The study also adopted qualitative approaches to data collection, analysis, and reporting. The two key modes of collecting data were household observations through in home visits and focus group discussions.

2.2.1 Sample Considerations and Criteria

A total of 12 focus groups comprising of eight participants per group, and six home visits were carried out across 7 counties in Kenya. Different regions were sampled to reflect a range of socio-demographic, geographic and lifestyle nuances. The counties that were sampled for this study were Nairobi, Kiambu, Kajiado, Muranga, Meru, Nakuru and Bungoma.

Important considerations that were made in shortlisting the regions include but not limited to the following:

- Nairobi is cosmopolitan and has consumers who use the different fuels and cook stoves. Kiambu and Kajiado were selected as Nairobi peri urban to give a different view from the city
- Geographic locations varied across counties, with Muranga located in central Kenya, Meru located in Eastern, Nakuru located in Rift valley and Bungoma located in western
- Climatic variation: Nairobi and Meru have colder climates compared to Muranga Nakuru and Bungoma

Only consumers who live in the selected region were considered for the study. In order to enhance homogeneity the following factors were put into consideration while recruiting the participants:

Criteria	Consideration
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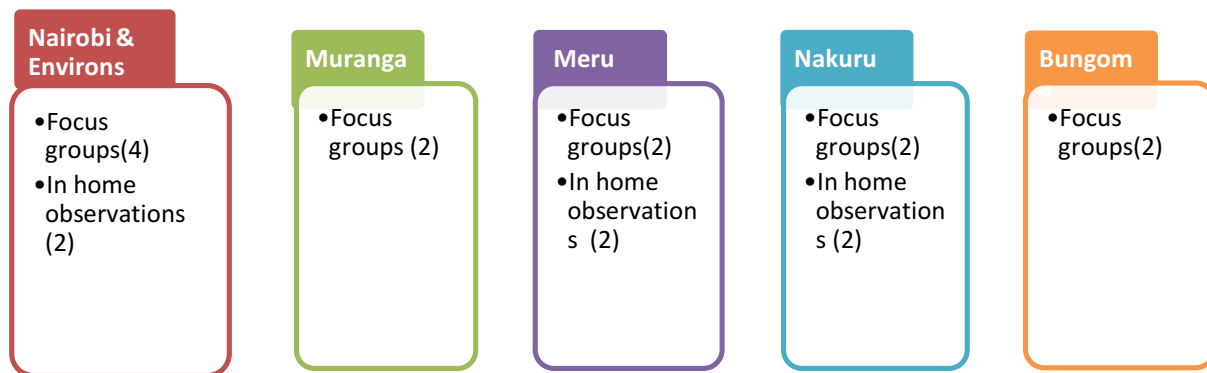
<p>Gender</p>	<p>The study considered both men and women as the target audience. The sample was skewed to include higher female participants owing to them being:</p> <p>Key decision makers when it comes to the type of fuel to use within the home</p> <p>High interaction levels with the cooking stoves as they prepare meals for their families</p>
<p>Age</p>	<p>The age bracket considered ranged from 25 – 55 years. However, this was split into two age bands, of 25-35rs and 36-55yrs. The reasons were;</p> <p>To ensure that we capture any possible attitudinal and lifestyle differences that could impact their interaction with clean cooking stoves</p> <p>To manage age set differences within a particular age set 25-35yr & 36-55yr olds</p>
<p>Economic status</p>	<p>Given the need to understand the deeper underlying emotive factors that limit use efficient stoves, we will recruit women who cost is not a limiting factor. This will enable us gather beyond non-functional barriers</p>
<p>Usage</p>	<p>Usage was defined through asking respondents whether the jiko they owned was an efficient jiko, clay or tin jiko. The groups were split to reflect:</p> <p>Current users of efficient cook stoves</p> <p>Those who were aware of efficient cook stoves but were non-users</p> <p>Respondents that were unaware of cook stoves, non users</p>
<p>Family Size</p>	<p>A mix of those with large families as well as those with small. Small families consisted of families with 3 members and large families consisted of those with 4 members or more</p>

The study considered the following income levels and wealth status of the participants in the formative research.

- C1 EMPLOYED -junior managers and low middle level workers in corporates in occupations like accountancy, human resource and administration.
- C1 SELF EMPLOYED- Farmers, middle level business men and consultancy
- C2 EMPLOYED – junior staff like receptionists, secretaries, book keepers and admin assistants
- C2 SELF EMPLOYED- small scale farmers and small business owners who sell clothes, shoes and accessories

2.2.2 Sample Structure and breakdown

The sample spread by county is as outlined below:



All focus group discussions had 8 participants each and lasted approximately 90 minutes. The discussions were facilitated by a trained and experienced moderator using an approved ¹ discussion guide to facilitate the sessions. The final guide is annexed to this report.

Detailed profile of the participants is presented as an annex to this report.

¹ By PS Kenya

2.2.3 Focus Group Schedule

The table below summarizes the key profile details, the schedule of dates and location of each focus group.

NO.	LOCATION	SEGMENT	AGE	DATE	VENUE	SEC	TIME
NAIROBI AND ITS ENVIRONS							
1	Nairobi	Male Aware of not using	25-35 Yrs.	1 st Sep 2016	TNS Offices	C1	10.00 - 12.00 pm
2	Nairobi	Females Current users	36-55 yrs.	1 st Sep 2016	TNS Offices	C2	03.00 - 05.00 pm
3	Kiambu	Females Current user	25-35 Yrs.	2 nd Sep 2016	TBC	C1	11.00 - 01.00 pm
4	Kajiado	Females Not aware, not using	25-35 Yrs.	2 nd Sep 2016	TBC	C2	03.00 - 05.00 pm
CENTRAL							
5	Muranga	Females Non users	36-55 Yrs.	5 th Sep 2016	TBC	C1	03.00- 05.00 pm
6	Muranga	Females Current users	25-35 Yrs.	5 th Sep 2016	TBC	C2	11.00- 01.00 pm
EASTERN							
7	Meru	Females Current users	36-55 Yrs.	6 th Sep 2016	TBC	C2	11.00- 01.00 pm
8	Meru	Females Aware of, not using	25-35 Yrs.	6 th Sep 2016	TBC	C1	03.00- 05.00 pm
RIFT VALLEY							
9	Nakuru	Females Non user	25-35 Yrs.	5 th Sep 2016	TBC	C1	11.00- 01.00 pm
10	Nakuru	Females Current user	36-55 Yrs.	5 th Sep 2016	TBC	C2	03.00- 05.00 pm
WESTERN							
11	Bungoma	Males Current users	36-55 yrs.	7 th Sep TBC	TBC	C2	11.00- 01.00 pm
12	Bungoma	Females Aware but not using	25-35 Yrs.	7 th Sep TBC	TBC	C1	03.00- 01.00 pm

The profile of the participants for the home visits is described below:

REGION	LOCATION	AGE	SEGMENT	TOTAL
NAIROBI & IT'S ENVIRONS	Kajiado	25-35	Female not aware not using	2
	Kiambu	25-35	Female current users	
EASTERN	Meru	36-55	Female current user	2
		25-35	Female aware of not using	
RIFT VALLEY	Nakuru	25-35	Female non-user	2
	Nakuru	35-36 years	Female User	

2.2.4 Fieldwork Procedure

The following procedures were used to conduct the study;

The recruitment team underwent a training and briefing session which covered the objectives of the study, sample criteria, recruitment procedures to be followed, quality control measures, study ethics, communication, their roles and responsibilities and the recruitment questionnaire.

Once in the field, the team recruited respondents at household level. After identifying the correct respondent, the research team first sought verbal consent to participate in the study by providing respondents with information about the research being conducted.

To ensure that respondents understood the voluntary nature of participation in the study, the research team asked if participants fully understood the overall scope of the study and explicitly stated that respondents were free to withdraw from the study at any time.

In the recruitment process, TNS did not subject any respondent to any form of coercion, undue inducement, or intimidation. Respondents sometimes consider invitations to such gatherings as an opportunity to learn from interactions with other participants and the recruiters are able to leverage on this aspect to convince potential participants. Some also participate out of curiosity whilst others consider selection a 'privilege'.

Participants were recruited as individuals, not as representatives of specific organisations. Those who agreed to participate in the study were informed of specific steps TNS would use to ensure confidentiality and protect their privacy. Reassurance was done during data collection, whereby the moderator confirmed that their names, positions, or any other personal information would not be analysed or included in the final report. TNS also sought consent for interviews to be audio recorded to facilitate eliciting first person verbatim data for use in analysis.

2.2.5 Analysis and Report Writing

Raw data from audio recordings and field notes were uploaded, backed up and saved. All audio recordings were transcribed, cleaned and saved to a central server. For quality purposes, the recordings were transcribed verbatim to capture the “voices of consumers” and were further cross-checked with field notes.

The data was analyzed known as "social anthropology" as described by Miles and Huberman (1994). This relies primarily on ethnography previously called “observational research”. TNS used this approach to provide detailed, or rich, descriptions across multiple data sources. The approach used a recursive approach where they sifted, coded and sorted data as they were, and followed up analyses with ongoing observations and interviews to explore and refine patterns. This approach was complemented by use of “interpretive approach” in some cases. This approach presented a holistic view of data rather than a condensed view. The analysis relied on thematic ordered matrix which was used to document emergent themes and issues borrowing heavily on PS Kenya’s Framework for Qualitative Research (FOQUS). TNS relied on other secondary sources of data to strengthen some of the narrative within the reporting and support some of the emerging themes.

3 Results and Discussions

The report is structured to align with PS Kenya's FOQUS which utilizes the following themes:

- Knowledge and Sophistication (K/S)
- Archetype (ARCH)
- Beliefs to Change (B2C)
- Beliefs to Reinforce (B2R)
- Openings
- Brand associations(BA)
- Category Experience (CatEx)
- Strategies to Behave (S2B)
- Acquisition Stories (AQS)

3.1 Knowledge and Sophistication in information on Cook stoves

This section details target audience members' ability to distinguish between clean cook stoves and other stoves, their level of sophistication about CCS i.e. their purpose, how they function, and health facts as pertains to usage of stoves

Knowledge and awareness of clean cook stoves is limited amongst non-users. Across both users and non-users the understanding is mainly at brand level where the definition is a *"better performing jiko"*. Main source of awareness is TV advertising with the awareness mostly limited to Jiko Okoa due to its high visibility in the market.

The expectation from an improved jiko is; improved fuel efficiency and cleanliness. The issue of reduced pollution is still tagged to the actual fuel being used. However, there is the expectation that some newer types of jiko would emit less carbon monoxide and less smoke

"You cannot know the percentage but when you walk to a room with jiko you will feel the amount of carbon in a room if you have that envirofit (sic) jiko and in another room you have the traditional jua kali jiko the room will be clear because of the jiko you are using and in the other room the moment you try to inhale the air will be clean." Male Aware Non users Nbi 25-35y

Indoor air pollution is defined as smoke emission, carbon monoxide emissions, hydrogen monoxide emissions and fumes from paraffin. The effects from the above factors are understood as;

- Blood poisoning from carbon inhalation which manifests as dizziness
- Detrimental to lung health

- Damage to the environment from pollution
- Death from smoke inhalation
- Hygiene issues from handling of certain fuels.
- Inhalation of hydrogen monoxide from LPG

"And when you put it off it produces some dark smoke which is hazardous to your lungs and your environment." Male, Aware, Non User, Nbi, 25-35y.

"Gas has a combination of hydrogen monoxide and once you inhale that gas it harmolizes the blood and once you inhale it, your brain will not get enough oxygen that is why people collapse and they have to be taken where there is pure oxygen so the gas is harmful to our health so I feel the gas has no advantages to kill you is a matter of seconds" Male, Users, Bungoma, 36-55y.

Potential explosions from LPG, fire from kerosene and accidental ingestion of paraffin were also perceived as health hazards.

"And for children it can be dangerous some kids try to light the gas and leave the fumes running and if someone walks in with a cigarette stick while smoking it can be fatal so it's not friendly for children." Male, Users, Bungoma, 36-55y

Urban males of higher education demonstrate a more sophisticated understanding of the health effects of indoor air pollution. However, across all respondents there were no linkages of this type of pollution with long term health effects such as respiratory disease.

Lower SEC consumers also exhibit awareness of the effects but don't have a clear sense of the extent of damage/effects it could cause to their health due to interaction and exposure to indoor air pollution. Their knowledge is limited to irritations like coughs

The issues raised have a more immediate effect as opposed to long term. Majority of consumers are concerned about the superficial effects of smoke in terms of residual odor and eye irritation and limited focus given to respiratory effects which are arguably more critical. Conversations with consumers who are not aware of the clean stoves reveal that most have not been exposed to communications of the same.

Nevertheless spontaneous associations with clean stoves include;

When it comes to cooking **in general**, 'CLEAN' is largely perceived as an attribute of the QUALITY AND TYPE OF FUEL more than it is about the DESIGN AND QUALITY OF THE COOK STOVE. It generally means:

- that which not emit smoke

- that which does not stain hands, cooking pots, walls and utensils
- that which does not leave residual odour

‘In the context of cook stoves, ‘CLEAN’ means:

- reduced smoke
- easy to dispose ash
- Easy to use in terms of design – with hands etc.

They therefore perceive clean stoves as a hygienic cooking option.

3.2 Openings

This section gives insights as to how target members can be reached, what their sources of information are the sources they trust

3.2.1 Media Consumption

All consumers in urban areas have exposure to radio and TV. Different types of media were mentioned during the sessions, and observed during in home visits:

Radio channels – In Meru, Kiambu and Muranga participants reported hearing adverts on improved jikos on Inooro and Citizen (Wilbroda). Nairobi participants reported hearing an advert on citizen radio. In Bungoma, Mulembe, Radio Maisha and Waumini are common

"jiko okoa I heard about it over the radio" Male Users Bungoma 36-55y

TV channels – Across the respondents sampled, TV appears to be the main conduit for information and entertainment. The main station mentioned was Citizen TV and this cut across all regions sampled. Citizen was also credited with awareness of CCS from the Papa Shirandula programme which features the Jiko Koa brand. Local language TV stations such as Inooro TV, Njata and Gikuyu TV are common in Kiambu, Muranga and Meru through play a supplementary role to Citizen TV. KTN & NTV were also mentioned.

[Adverts on CCS on TV] "The ordinary jiko when it rusts that is the end of it but the improved jiko even if the metal rusts you can still use it as long as the clay is intact." Female Non Users Muranga 36-55y

Magazines and newspapers were rarely read as sources of information or entertainment and there was therefore no mention of recall of any CCS adverts from these sources.

Internet usage was mentioned by urban younger consumers who mostly use social media to communicate with friends

"Facebook, twitter, WhatsApp. My account, what people have updated and on facebook there are links for many stories from media stations like K24, Citizen they post a lot of links."
Female 25-35 Aware not using Inhome Meru

Interpersonal communication channels also emerge as powerful conduits of information and potentially strong credibility. These are word of mouth through friends, promoters of CSS in the field, Church and 'chamas'². Testimonials of usage from current users were mentioned as a source of information on CCS.

"An agent came during a baraza and he was given a chance to speak about envirofit so it was during that baraza." Male Users Bungoma 36-55y.

"And when you visit friends... From the people who have used they will tell you the advantages and disadvantages. .. And when we go to the chamas we talk about those things." Females 36-55 Non Users FGD Muranga

"They were people who were going round telling us there are Jikokoa but they dint show us even in church we were told about them. There is a woman who told me she bought hers in the church." Female 25-35 User Inhome Kiambu

CBOs, NGOs and Sacco's emerged from Male participants as potential avenues of awareness creation including information on CCS. Local community leaders and health experts have taken the responsibility of educating the surrounding community of the need for proper ventilation

I knew through one acre fund. Male Users Bungoma 36-55y

3.2.2 Triggers to uptake

In as much as seeing the stoves at the outlet formed the greatest source of awareness, the final trigger to purchase was upon getting testimonials from friends and relatives. The need for reassurance is driven by the fact the initial outlay is high, and hence impulse buying is low. Therefore word of mouth emerges as an influential channel in driving uptake.

² Chama's are womens groups that meet regularly with a common purpose such as social or financial. There are instrumental for savings and a source of quick and ready credit for members.

3.3 Category Experience

Discusses target audience members' past experiences of CCS and competitor products

3.3.1 Roles and Responsibilities As Pertains Usage And Purchase Of Stoves

Generally, meal preparation is predominantly determined by women in the household. In cases where mothers are not available, the eldest girl child will take over these responsibilities. This is especially the case in the rural areas. In urban area, the house help mostly takes over the responsibility.

The men's role lies in provision of financial resources in the home. This also includes provision of money to buy or actual purchase of food stuffs in the home.

Purchase of stoves in the home is largely influenced by the wife as she has higher interaction with cooking of the food, cooking devices used in the home and the fuels used.

"kitchen stuff they (wives) recommend." Male Users Bungoma 36-55y

Some regional differences were observed. Moderate involvement of men was observed in *Kajiado, Nakuru, Meru* and *Nairobi* where men are mostly involved in financing for fuels & food. On the other hand In *Kiambu* and *Muranga*, low involvement of men in decision making of what is considered "kitchen matters" was observed. A few of the women noted that they do inform their spouses about their decisions. This is only as a formality but not necessarily seeking for their opinion or financial support. Generally the trend showed that the level of urbanisation would determine how much involved the males was; more urbanized males were less likely to be involved in the decision making.

3.3.2 Level of Activity

A typical day normally consists of several activities and this creates a time constraint. This is especially true for women that engage in other income generating activities. This time constraint affects the time available to prepare and cook food. This results in a preference for a stove and fuel that is not only efficient but also;

- 1) Easy to light
- 2) Fast to cook (high heat intensity)
- 3) Requiring minimal attention in-between cooking (allows one to multi-task).

3.3.3 Daily Meal Preparation As Pertains To Type of Stoves

Majority of consumers cook two main meals a day, breakfast and dinner with lunch time meal being left overs of supper from previous day.

Differences emerge in the stove and fuel requirements needed for the two meals cooked. Breakfast and dinner differ in cooking time needed and the heat intensity needed. Breakfast would typically consist of tea plus a snack (e.g. bread). This would require moderate amounts of heat. Additionally time constraint is a factor. Dinner on the other hand is more complex and slower cooking; there is also more time to cook. These factors result in different stove requirements which explain the presence of several types of cook stoves in the same home. This is also illustrated in the table below;³

RURAL	URBAN
Own One Stove	Own Two Stoves
Own a 3-stone (wood) stove <i>'I have a 3-stone stove, no charcoal or gas.'</i>	3-stone (wood) stove and a charcoal stove <i>'I have a charcoal and a 3-stone stove. Charcoal is available and wood is less available. I use charcoal mostly.'</i> 3-stone (wood) stove and an LPG stove <i>'I prefer wood because it is cheaper and I can get it more easily. I use gas every morning for making tea. Gas is faster than firewood and I am always in a hurry in the morning.'</i> Charcoal and an LPG stove <i>'I use gas in the morning and charcoal in the evenings and weekends when I have more time.'</i>
Own Two Stoves	Own Three Stoves
3-stone (wood) stove and a charcoal stove <i>'I use firewood because it is readily available. When it is raining a lot I use charcoal.'</i> 3-stone (wood) stove and a kerosene stove <i>'I have a 3-stone fire and a kerosene stove. But I only use the 3-stone; the kerosene is very expensive.'</i> Charcoal and an LPG stove <i>'I have charcoal and gas.'</i>	3-stone (wood), charcoal and LPG stoves <i>'I use the 3-stone in the morning and on weekends. In the evening and when it's raining, I use charcoal. Paying for gas puts me off, so I use it in the morning.'</i>
Own Three Stoves	Own Four Stoves
3-stone (wood), charcoal and LPG stoves <i>'During the day I use wood. During the night I use charcoal. I use gas during the lunch hours when I come in from the garden.'</i> 3-stone (wood), charcoal and kerosene stoves <i>'I use the kerosene for breakfast. I use the charcoal when it is cold to cook but also to warm the house. I use firewood during the day.'</i> 3-stone, sawdust and LPG stoves <i>'I have wood, sawdust and a gas stove.'</i>	3-stone (wood), charcoal, LPG and electric stoves <i>'I only use the electric cooker when the gas runs out because it is more expensive than gas. I use charcoal but only on rare occasions. Usually, it is either firewood or gas.'</i> 3-stone, charcoal, kerosene and LPG stoves <i>'I have gas, a kerosene stove, charcoal and firewood. I like the gas stove the most, but the one I use the most is the firewood stove.'</i>
Own Four Stoves	

³ Global Alliance for cook stoves. Kenya finance report. 2015

3-stone, charcoal, kerosene and LPG stoves

'I have four stoves but I mostly use wood because of costs; it depends on the income that we are getting.'

3.3.4 Impact of the Kitchen Operating Space to Choice Of Fuel

Smaller houses are associated with poor ventilation. Smaller houses here refer to single roomed houses that are used as the living room, bedroom and a small space for cooking. Such houses tend to have a small window. In some instances, cooking is done outside the door. The pictures below illustrate the space constraints of such houses.

As for the higher SEC who has large cooking space, the houses are well ventilated and as such



Space constraints in Single Roomed houses



issues of ventilation are not present. However, their choice of fuel depends on the perceived hygiene of the stove and considers factors such as cleanliness and safety. This does not imply that these factors are not concerns for lower SEC consumers; rather the choice of stove is largely determined by the cost of the stove. The stoves that offer cleaner fuel choices are more expensive.

3.3.5 Impact of Social Class on Choice of Cook Stove

Regular users of clean stoves from lower SEC live in smaller houses i.e. single or 1 bed roomed house and therefore have limited cooking spaces. With the small cooking space, they choose stoves that require less storage space and are less harmful to health since their houses are not well ventilated.

Some upper SEC consumers live in their own compound homes, either as nuclear families or as extended families.

Consumers who live with extended families tend to cook large amount of food.

3.3.6 Impact of Family Size on Choice of Stove

Large and extended family sizes were also noted in Kiambu and Bungoma. Consumers noted that due to the large family sizes, they opt for cooking options that can take bigger cooking pots such as cooking on three stones. These subsequently utilize cheaper fuels such as firewood and are readily available within their locality. Being in the own compounds also allows for have adequate space in the cooking area and as such issues of ventilation are not a problem.

3.3.7 Consumer Kitchen Operating Space

Previous consumer researches have depicted clearly the picture of the kitchen operating space that the end user operates in. Key insights include – women often do not have working space and are forced to ‘operate from the floor’. Cooking ingredients are placed on the ground and they are forced to bend while preparing food⁴

Studies revealed that there is a need to better understand housing tenure and design of homes and their impact on cooking and health. Clark et al. (2015) reviewed evidence for physical changes in households and the positive impact that some of these can have on indoor air pollution.⁵

The availability of operating space for cooking, creates differences between the higher social class consumer and the lower social class consumer and also between rural vs. urban consumers

Higher vs. lower SEC

Higher SEC have significantly large kitchen/cooking space because they live in larger houses as compared to lower SEC consumers who tend to live in either single or 1 bedroom houses. This limitation does affect the size of cooking stove they use.

Rural vs. urban

In rural areas, the kitchen is mostly detached from the main house and as such they can use any form of fuel to cook since it will not affect the main house.

⁴ IPSOS, Kenya Consumer segmentation study -2014

⁵ Matin et al. What boosts cookstove uptake -2015

In the urban areas, the kitchen is within the main house and as such they are cautious about dirtying the house or causing a nuisance to visitors as they cook. Therefore this impacts on how they choose fuels.

3.3.8 Why Clean Stoves

Previous experience with ordinary/traditional stoves⁶ created the need for clean stoves. Both Prompted and unprompted responses yielded the following complaints with regards to the traditional stoves;

- Smoking
- The amount of smoke produced is high leading to respiratory problems
- Doesn't conserve fuel
- Speed of cooking is slow since heat is not well channeled to the cooking pot
- Besides, the outer material is not insulated and therefore easily burns
- Design - material used doesn't last long and therefore lacks long term economic benefit.

3.3.9 Attitudes towards Cook Stoves

As much as they are trying to balance between economy and efficiency, they are also looking at stoves that have limited impact on health. This was further observed in their cooking habits.

3.3.10 Usage of Clean Stoves

Generally, people used multiple stoves to maximize on the benefits of each stove available at home. Different cook stoves are used at different cooking occasions across locations and profiles.

For light meals i.e. breakfast and during emergency occasions, consumers tend to use cook stoves that are easy to light. Kerosene and LPG cook stoves are commonly used. Lower SEC consumers tend to use Kerosene as compared to higher SEC consumers who use LPG. This is due to the high initial cost of LPG,

For meals that require long cooking time for instance beans and Githeri, consumers use fuel that burn for longer with minimal cost i.e. charcoal and firewood. This is mostly for peri urban consumers and those who have space.

3.3.11 Feedback on Performance of CCS amongst Users

To large extent current users express high satisfaction with CCS; there are very few drawbacks with regards to performance. The users cited lack of variety of size of CCS and expensive purchase price.

⁶ A traditional stove here refers to the clay jiko and the paraffin stove.

Despite the high purchase price, the operating costs are lower, translating to value for money. Majority say they have no regrets using the fuels.

Overall the users of CCS have seen the benefits and they claim their lives have changed for the better - There has been a significant reduction on the cost of fuel, translating to disposable income that can be put into other use.

The cooking experience has also improved, due to the fact that they are no longer worried about the charcoal running out. Owing to fuel savings, they are able to prepare fuel-intensive foods such as cereals and chapatti on a more regular basis. Meaning they are able save money for use on other things.

Ability to regulate the fuel and given the fact that there is no need to keep replenishing charcoal on the stove means that they have spare time to engage in other activities. A CCS such as jiko koa utilizes less charcoal and cooks for longer as opposed to the KCJ which needs frequent replenishing.

"...Once I leave my githeri on jiko Okoa, I don't keep adding charcoal, I can continue with cleaning dishes and helping kids with their homework, I feel more organized after getting it, 36-55 Kajado..."

3.3.12 Challenges Faced with CCS

Feedback on CCS is generally positive, though the following challenges emerge:

Lack of a variety of sizes – this is a key gap in current offering. Sizes available are small and are perceived unsuitable for larger cook pots. The smaller size is also perceived not to be strong enough thus unable to support a bigger sufuria containing a lot of food.

"...When in have visitors or a party I can't use the Jiko, its small so I use firewood or borrow bigger mabati jikos..." 25-35 Muranga

High initial outlay, particularly for the charcoal based varieties – the current pricing was considered significantly higher than the market average for charcoal stoves. It therefore requires a lot of persuasion and justification on product benefits

"...I wanted to buy a second one so I can have two but the cost is high, I go the first one through chamaa loan, I can't take a loan again..." 36-55 Meru

Poor distribution – CCS are mainly available in modern trade- specifically in supermarkets. they are rarely distributed via traditional trade –kiosks, dukas and mini-markets

"...I got my jiko through sales people who passed by during the market day and sold to us, my friend wants one but I don't see those sales people anymore at the market and I don't know where to get one, they should have more agents.... 25-35 Muranga

3.3.13 Attitudes towards Clean Cook Stoves amongst Non-Users

Older SEC women exhibit patience when it comes to cooking and fuel usage. They noted that cooking is a process and requires adequate time and attention and therefore have learnt to work with what is available over time unlike younger women who are exposed to variety of fuels and are looking to upgrade due to peer pressure

"When I want to cook, I take time to light the Jiko so it doesn't matter what kind of Jiko it is"36-55yrs, Nairobi

"I used to use firewood when I was young but now that I got charcoal so I feel it is a better option"36-55yrs, Meru

For the younger consumer, they perceive functional benefits of CCS of smoking less and conserving fuel to be advantageous. In addition it also comes with the social benefit of being aspirational. The expensive price tag insinuates high purchasing power by the user therefore increased status.

"When my friends talk about clean stoves, I feel left out so when I have it I will be part of them"25-35yrs, Bungoma

"This Jiko is expensive; when someone sees me with it they feel I am of high class" 25-35yrs, Kiambu

"Kids keep on telling me about a neighbour who has this good Jiko. I feel I am a responsible mother when I have it" 25-35yrs, Kajiado

Majority of consumers who are aware of the clean cook stoves feel that the stoves are small and therefore would be insufficient to cook their meals

3.3.14 Perceptions towards Specific Cook Stoves

3.3.14.1 Charcoal

It is associated with middle to lower class consumers. It is affordable owing to its ready availability in small quantities.

It also emits carbon which is harmful to your health, and needs space for storage which is a problem for people with small rented houses.



Traditional charcoal jiko



Kenya Clay Jiko

3.3.14.1.1 Motivators

- Available in small SKUs⁷
- Provides warmth for the house
- Available in close proximity to homes
- Retains heat for longer, the stove can be used for other uses like warming water once cooking is done

3.3.14.1.2 Barriers

- Inconsistent quality depending on supplier
- Fluctuating price affected by rainfall and forest wardens who harass charcoal burners

⁷ SKU refers to Stock Keeping Unit

- During the cooking process, it requires frequent refilling when using for long periods
- When one finished with cooking, the remaining heat is wasted
- Leaves residual odour in the house and on its residents.
- It leaves dirt and ash on the hands of users and the floor.

When I go for chamaa meetings I don't even want to hide my hands because the nails are black from charcoal, 36-55 Meru

My daughter once fainted because we forgot to open windows, you need to be keen when using charcoal, and you need to be there, 25-35 Kajiado

3.3.14.2 Firewood

It is associated with rural use and mass cooking like parties. This is because it is mostly available in rural locations

3.3.14.2.1 *Motivators*

- It is affordable since one can gather it from thickets or buy at affordable prices
- Lasts long since only a few pieces are used at a time making it economical
- Once lit it cooks very fast and can be easily controlled by adding or removing pieces from the fire.

3.3.14.2.2 *Barriers*

- During the rainy weather, they become wet and one struggles to light it
- Emits smoke and leaves residual smell on clothes and hair,
- The soot is hard to clean
- Supply is inconsistent due to discouragement of deforestation

When you come from the village everyone knows because you smell of firewood, the smoke remains even on your hair 25-35 Kajiado

I only use it when I have parties, I don't have the energy to blow and blow to get it lit 36-55 Meru

3.3.14.3 LPG

It is associated with the affluent due to the costs involved. However it is not safe and can only be used under supervision due to the risk of explosion. It is also perceived that one cannot cook certain meals on it like githeri and chapatti since it will run out. Additionally, the heat LPG

produces is not perceived to be evenly distributed and cooks too fast to allow for even cooking. It does not produce tasty meals.

3.3.14.3.1 Motivators

- Clean on hands, utensils and surfaces
- Has no odour
- Easy to light and use
- Cooks fast and does not need tending
- Though has high initial cost its economical in the long run

3.3.14.3.2 Barriers

- Considered dangerous if mishandled and might cause explosions
- Initial acquisition cost is high and the cost of refilling the cylinder is also perceived as high because you have to pay a substantial amount at one go
- Does not have smaller SKUs for small purchases

3.3.14.4 Kerosene

Associated with urban lower SEC. The price is affordable and one can buy as little as you can afford.

The stove is perceived as dangerous thus usage is minimised to emergencies and early morning usage to save on time. Most respondents however given a choice would not choose it over other fuels



Paraffin Stove and Jikos

3.3.14.4.1 *Motivators*

- Available in low SKUs that can be bought when funds are limited
- Easy to light and use
- Fast and does not need tending
- Easy to control

3.3.14.4.2 *Barriers*

- Leaves residual odour
- The cook stove is perceived as risky if mismanaged
- Availability is not consistent
- Quality of kerosene is also not consistent due to adulteration

I am usually afraid my child could drink the kerosene or light up the stove, I keep it very high in the shelf and use it myself, 36-55 Muranga

Sometimes you go to the petrol station and it's not available, or overnight the price fluctuates, it's very inconvenient, 25-35 Kajiado

3.3.14.5 *Sawdust*

It is associated with low income consumers since it is given for free. It is however not easy to use and lighting the cook stove is cumbersome.

Once lit it is however consistent and good for foods that cook for long example githeri.

You have to go with a sack and collect it at the saw mill, you get it for free but you have to get there before others

It is very difficult to light the stove, the sawdust easily crumbles and you have to repeat the whole process again

3.3.14.6 *Biogas*

Most respondents do not have much knowledge about biogas since they have never used it and their perceptions are anecdotal.

It is associated with those that have a higher disposable income since the installation cost is expensive and one needs several cows for regular production.

3.3.14.6.1 *Motivators*

- easy to light and use
- cooks fast
- clean, has no residual odour or dirt on the floor

3.3.14.6.2 *Barriers*

- high initial outlay e.g. piping
- Incurs expert costs
- It has a need for high volumes of cow dung which translates to a minimum of 3 cows in the homestead.
- Requires technical skills to maintain and repair in case of breakdown or malfunction.

It is perceived as quick, clean and safe to use making it almost ideal

It has no smell and it light up like LPG, you don't even need to wash the sufuria 36-55 Muranga

It costs a lot to put up that equipment for converting, and the pipes are also costly and they need an expert to install, you need to have money to afford it 25-35 Meru

3.3.14.7 *Ethanol gel*

Has limited availability thus does not enjoy high awareness or usage

3.3.14.7.1 *Motivators*

- Easy to use
- Has no residual odour
- Clean to use
- Easy to light

3.3.14.7.2 *Barriers*

- Considered expensive and unsustainable in the context of large families
- Availability is low

3.3.14.8 Solar

This is another aspiration for many.

3.3.14.8.1 *Motivators*

- Clean with no odour, ash or soot
- Associated with long term reduction in expenditure on fuel.
- Easy to use and maintain

3.3.14.8.2 *Barriers*

- Its initial cost outlay is high
- Requires expert knowledge to install and repair in cases of malfunction
- Consumers express reservations on how to go about maintenance and repair.

Almost all the participants were also not aware of solar panels that can be used for cooking

3.4 Strategies to Behave

Techniques or tactics that members of the target audience use to overcome barriers to use of CCS

3.4.1 *Impact of social class/occupation on choice of cook stove*

Upper SEC consumers alternate between charcoal and LPG. Those living in rural homes in their own compound also use firewood.

Those in lower SEC alternate between charcoal, paraffin and sawdust depending on availability.

3.4.2 *Impact of family size on choice of fuel stove*

Large and extended families use charcoal as it can cook larger amounts of meals for longer periods, and limit LPG and kerosene to warming only. Smaller sized families would use kerosene and LPG more often since the size of meals does not require much heat and relegate charcoal and firewood to boiling cereals and other slow cooking items

3.4.3 *Impact of the kitchen operating space to choice of fuel*

Participants with smaller operating spaces usually end up cooking outside when using charcoal and only cook indoors with LPG. When using kerosene stove they put it outdoors when turning it off to reduce residual odour.

As for the higher SEC who have large cooking spaces, the houses are well ventilated and as such issues of ventilation are not present. Therefore, their choice of fuel is driven by awareness and availability by location

Influencing factors by location:

Nairobi and its environs

Use charcoal, kerosene and LPG. Largely due to the fact that majority of consumers live in either smaller rented houses with limited kitchen space or live in rented houses where they are restricted not to use fuels that dirty the house and its compound.

Bungoma and Njoro

Use charcoal, kerosene, LPG and firewood

In Bungoma, firewood is readily available either within the home compound and is cheap to purchase. Compared to LPG and Kerosene which consumers have to incur transport charges going to fetch them.

“I live in my rural home where I don’t incur any cost of firewood. I just get it within the compound” 36-55yrs, Bungoma

“This region is full of forests so wood for firewood is not a problem. For gas, you have to go to town to buy and that is why I am saying I prefer firewood.” 26-35yrs, Bungoma

Similarly, in Njoro, being a semi-rural area, majority of consumers mentioned readily available charcoal as compared to Kerosene and LPG which has to be purchased from the main shopping Centre.

“Even if you go outside the house, you will find someone selling charcoal. You don’t have to travel to get it” 36-55yrs, Njoro

Muranga and Meru

Charcoal, firewood, sawdust and LPG

Due to the presence of forests in the region, a lot of consumers participate in timber making; therefore easily available saw dust for cooking. Charcoal and firewood are also readily available in the regions

3.5 Brand Associations

This section details consumers' ideas and attitudes and emotional associations about CSS and various CSS brands

The **primary benefits** of a CCS revolve around **functional product performance**. It is said to offer significant incremental value from 'ordinary/traditional' cook stove.

3.5.1 Primary benefits

1. **Fuel efficiency.** Significant reduction in the average amount of fuel used in a day
2. Increased cooking **speed which results in** improvement in the time taken to prepare meal.

3.5.2 Intermediate benefits

3. **Insulation:** the material used to make a CCS is insulated therefore safer. It is easier to handle since the body does not get hot. *"...Even if a child touches the jiko they are unlikely to burn..." A CCS is also safer to have in the house as it will not burn the carpet or the floor.*
4. **Smoke reduction.** this means that a CCS is healthier to use due to the reduced smoke emissions. It's also cleaner since smoke damage to the house is reduced. Reduced smoke also means that ones clothes would not smell of smoke which is unappealing.
5. **Environmental** friendliness. Use of a CCS means less use of firewood or charcoal which implies that less trees are cut down which is positive for the environment.

3.5.3 Hygiene factors

6. **Aesthetics** – visual appeal. Consumers agree that the visual appeal of clean cook stoves sets them apart from ordinary cook stoves.

Fuel efficiency, insulation reducing chances of scalding – particularly amongst children, and the fact that it can be placed on a surface that is not insulated such as formica were the key benefits communicated by friends and relatives regarding the stoves. Some social benefits also got mentioned as communicated by friends and relatives regarding the stoves. These include:


- Better social image amongst friends and family due the prestige attached to CCS.
- Satisfaction with the appearance of the house, particularly when there are visitors – No soot, no staining of the ceilings and wall etc.
- Improved living standards due to saved money that could have otherwise gone to purchase of fuel.
- Better health and a more vibrant family due to less pollution in the house.

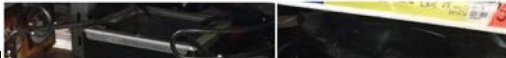

3.5.4 Awareness of CCS brands

Awareness of CCS amongst current users is only limited to a few brands. Across regions, awareness was limited to (in order of repeated mentions):

- Jiko Okoa,
- Envirofit (most respondents referred to this stove as the envirofit stove)
- Rhina

An assessment of some of the brands claims (*based on market visit observations*) The claims appear on the product packaging.

BRAND	PRODUCT FEATURE	DERIVED BENEFIT
	High temperature insulation	High heat retention for faster cooking/ smoke free cooking
	Non-slip stands	Firmer grip of the cooking pot to avoid accidents
	Insulated handles	No burns/scalds
	2X thicker stainless steel chamber	Prolonged life span/durability
	Ash tray	Clean, non- messy emptying process
	Designed in USA	Meets high standards/is of high quality
		Use any sufuria - adoptable
	Strong material	Can withstand the pressure of big sufuria
		Lights fast and easily
		One year warranty

BRAND	PRODUCT FEATURE	DERIVED BENEFIT
<p>ENVIROFIT</p> 	<p>PRODUCT FEATURE</p>	<p>DERIVED BENEFIT</p>
<p>MOTO SAWA</p> 	<p>Smokeless fuel</p> <p>Fuel gel is non-toxic and no-explosive</p> <p>Burns longer and gives higher heat than charcoal, wood and kerosene</p> <p>Cheaper than most conventional fuels</p> <p>Complete combustion</p> <p>Flame regular</p> <p>Slow burn rate - 4.5 hrs. per litre</p>	<p>- no soot, no staining</p> <p>safety</p> <p>Quality assurance</p> <p>Faster cooking rate</p> <p>Low refill costs</p> <p>Environmental friendly, clean emissions</p> <p>Easy to regulate, easy to extinguish</p> <p>Economical</p>

3.6 Beliefs to Change

Barriers to adoption of CCS amongst non-users

For non-users, majority desired to acquire a clean cook stove due to the positive feedback they had heard from friends and the benefits put forward by advertising. The key expected benefits were; saving on fuel, followed by reduced smoke and less carbon emission.

The key barriers which were:

- **The cost of purchase** is perceived to be expensive. Also the size available is perceived to be not value for money
- **Lack of knowledge** on where to get the stoves. The stoves also had low visibility hence reducing recall.
- **Size are seen** as small and therefore perceived as not sufficient for family cooking especially those with large family.

In addition some admit that none of their close friends and relatives were using CCS, hence they needed testimonial to assure their investment.

"...I have heard about jiko Okoa on the radio, but I have to go all the way to the supermarket to buy it, if they could bring it to a nearby duka I would think about it, because seeing it every day would be a reminder..." 36-55 Muranga

These days anything good is associated with the devil, if you have money some people might feel you are a devil worshiper and so forth so many people are used to cooking ugali using ten pieces of firewood so they don't understand how you can prepare ugali with a piece of firewood that is not possible there have to be other forces cooking this food, so you might come across that. Male Users Bungoma 36-55y

In this surrounding cooking is meant for ladies and it's hard for men to convince women that this thing is positive because it's not part of our culture to find men cooking. So if they target women they will acquire more and more people through them. Male Users Bungoma 36-55y

3.7 Acquisition Stories

This section describes how the target audience acquire (buy or receive) cook stoves including CCS

3.7.1 Changing Trends In Place Of Purchase for Cook Stoves

Point of purchase for cook stoves has increased over time across profiles and locations, particularly when it comes to charcoal based stoves. Traditionally, charcoal stoves were mainly available in open air market and from jua kali artisans. However this has changed with charcoal stoves now available in;

- Supermarkets both mainstream and mini
- Neighborhood retail and wholesale shops.
- Door to door hawking by sales people
- Sales people engaging women in the market place and other congregational areas like churches and community barazas
- Chamaas and other such groups like one acre fund where awareness and sales are conducted
- Safaricom offices offer jikos on instalments

i went shopping at Nakumatt and just bought it after good words from the sales lady. Male User Bungoma 36-55y

I was to Safaricom office and I saw that you can buy some jikos's on installment. Male User Bungoma 36-55y

All these emergent channels indicate that competition is growing within the category.

3.7.2 Financing Of Cook Stoves

From past research, willingness to take up financing was dependent on the perceived level of “formality” of the financing option. The most preferred consumer financing options were informal and semiformal mechanisms that did not rely on engagement with a formal finance institution.

Participant’s willingness to take up financing was more dependent on the cost of the cook stove, and was not shown to be dependent on the type of cook stove. Participants were willing to take up informal or semi-formal financing options if they were unable to pay cash.

For low-income participants, the threshold at which they were able to pay cash was much lower than for middle and high-income participants. Informal group savings and layaway with a vendor were the most preferred financing options. Participants were risk averse and preferred to enter into financing models that involved a savings mechanism, like layaway, rather than a borrowing mechanism, like asset finance.

Many cook stoves companies in Kenya are piloting consumer financing options. At the time this research was conducted, a majority of the consumer financing options that cook stove companies were piloting had been running for less than a year. Partnering with MFIs to provide finance for clean and improved cook stoves has had mixed success. Some cook stove companies have had success in partnering with MFIs to provide finance options to consumers, however, many have been unable to establish an effective and working partnership with an MFI.

Partnerships with financial institutions are most effective when the financial institution is focused only on the financing aspect. Given that the expertise of financial institutions lies with providing financial services, this is where their services will be most effective in partnership with a cook stove company. While financial institutions are not necessarily expert at selling cook stoves they can be an effective partner to provide expertise on the financial and administrative aspects of consumer financing.⁸

Varied financing options emerged amongst current users. Below is a list of these financing options:

- **From savings:** Accumulating the money for some time to make the purchase
- **Taking loans:** Typically from chamaas and NGO’s such as the One acre fund which was mentioned in Bungoma. The One acre Fund provides farm implements and the cook stove as an offer in the package

There were mixed reactions to the idea of **borrowing money**/taking a **loan** to purchase CCS:

⁸ Global alliance for clean stoves, study and mapping of consumer finance models for clean stoves 2015

Some felt that loans are for ‘serious’ activities that would typically bring yield returns to facilitate repayment of the loan. This segment of consumers felt that household items should be purchased via one’s savings. They tended to be Nairobi participants

Another segment of participants were open to borrowing money to finance the purchase of the cook stove. Borrowing from chamaas emerged as the most preferred option, owing to the flexible repayment and low risk when it comes to repayment. Even amongst this segment, borrowing from banks and other ‘formal’ money-lending institutions was not an option. They shy away from this option owing to the associated high interest rates. They also expressed openness to the possibility of getting the stoves on loan from appointed agents. They felt agents would be specialists in the category as they double as sales agent, advice on the product as well as offer after sales services in the event of need. Majority were familiar with appointed agents, having been exposed to Mkopa, which has appointed agents that sell the solar panels on installments

“...If they had agents like Mpesa you would just walk to them and ask all the questions you have, then they would even deliver..” 25-35 Kajiado

Informal (informal savings via a ‘merry-go-round’), semi-formal (asset finance, layaway, employer loan, remittances) and formal financing options (securing a loan with a SACCO, saving with a formal financial institution, securing a loan with a formal financial institution).

The most preferred consumer finance models were informal (savings via a ‘merry-go-round’) and semi-formal (layaway) financing options. Overall, the general trend was that the less formal the business model was the more participants preferred it.⁹

Table x. Evaluation of Consumer Financing Options

Level of Preference	Business Models
Most Preferred	<ul style="list-style-type: none"> ✓ Informal Savings via a “Merry-go-round” (all income levels) ✓ Layaway with a Vendor (all income levels)
Sometimes Preferred	<ul style="list-style-type: none"> ✓ Saving with a Financial Institution (low-middle and middle income levels) ✓ Employer Loan/Guarantee (middle-high income level)
Seldom Preferred	<ul style="list-style-type: none"> ✓ Asset Finance - Rent to Own (very-low income level)
Least Preferred	<ul style="list-style-type: none"> ✓ SACCO Loan/Guarantee/Savings (very-low, low, low-middle income levels) ✓ Loan from a Financial Institution (all income levels)
Uncommon Usage	<ul style="list-style-type: none"> ✓ Remittances (all income levels)

⁹ Global Alliance for clean cookstoves. Kenya consumer finance report. **study and mapping of consumer finance models for clean cookstoves. 2015**

Informal Savings via a ‘Merry-Go-Round’

With this model, the consumer would make regular monetary contributions to an informal savings group. These groups are often held with women and meet on a regular basis (weekly, fortnightly, monthly). Each time the group meets a different member takes home the collective contributions of the group. The consumer would utilize the money that they receive when it is their turn to collect the group’s contributions to purchase a cookstove.

For participants who were already participating in a merry-go-round, they were asked how often and how much they save with their group. The table below summarizes the responses from participants by income level.¹⁰

Frequency and Amount Saved at Merry-Go-Rounds	Low and Middle Income Level
Low Income Level	Low and Middle Income Level
<i>Weekly Contributions</i>	<i>Weekly Contributions</i>
a) We contribute 150Ksh (USD\$1.7) on a <i>weekly</i> basis	a) We contribute 50Ksh (USD\$.6) on a <i>weekly</i> basis
= USD\$85 yearly	= USD\$28 yearly
b) We contribute 300Ksh (USD\$3.5) on a <i>weekly</i> basis	b) We contribute 500Ksh (USD\$6) on a <i>weekly</i> basis
= USD\$169 yearly	= USD\$288 yearly
<i>Biweekly Contributions</i>	<i>Biweekly Contributions</i>
c) We contribute 200Ksh (USD\$2.3) on a <i>bi-weekly</i> basis	c) We contribute 200Ksh (USD\$2.3) on a <i>bi-weekly</i> basis
= USD\$56 yearly	= USD\$56 yearly
<i>Monthly Contributions</i>	<i>Monthly Contributions</i>
d) We contribute 200Ksh (USD\$2.3) on a <i>monthly</i> basis	d) We contribute 200Ksh (USD\$2.3) on a <i>monthly</i> basis
= USD\$28 yearly	= USD\$28 yearly
e) We contribute 300Ksh (USD\$3.5) on a <i>monthly</i> basis	e) We contribute 500Ksh (USD\$6) on a <i>monthly</i> basis
= USD\$42 yearly	= USD\$71 yearly
	f) We contribute 1,000Ksh (USD\$12) on a <i>monthly</i> basis
	= USD\$144 yearly
	g) We contribute 2,000Ksh (USD\$24) on a <i>monthly</i> basis
	= USD\$288 yearly

¹⁰ Global Alliance for clean cookstoves. Kenya consumer finance report. **study and mapping of consumer finance models for clean cookstoves. 2015**

Of the three clean stoves commonly available, Jiko Okoa tops, and is driven by:

1. Shelf display in the supermarkets
2. Advertisement on radio and TV
3. Use of celebrity 'Wildbroda' in the advert makes the recall higher for consumers

All the clean stoves owned by consumers cost between KSH. 3,500 and 4000. However all participants perceived this to be quite high but the long term saving made it value for money.

Nevertheless, suggested pricing is between KSH. 1000-2000¹¹ with urban consumers willing to pay higher comparing to rural counterparts. The price point of Ksh 1000 – 2000 was largely from non users whose point of reference was a clay jiko.

Availability of the clean stoves is predominantly in the supermarkets in all the regions.

i went shopping at Nakumatt and just bought it after good words from the sales lady. Male Users Bungoma 36-55y

In addition, it is available in retail stores¹² in Meru and a few were sold by sales men who deliver to their homes or Chama like in Kiambu while in Bungoma One Acre Fund offers the same to farmers through loaning

¹¹ The question used to elicit this information during focus groups was: Whats the highest price you would be willing to pay for the clean cook stove/'improved jiko'? The question was asked to non users that are aware of CCS.

¹² A retail store is smaller than a supermarket with few aisles or even having a counter at the front from where a sales person serves cutomers.

3.7.3 Summarizing Consumer Desired Qualities of Cooking Fuel

3.7.3.1 Ideal Cooking Fuel

The following are key emerging needs and expectations out of a good quality cooking fuel. Given consumer interaction with different fuel types, they have different high expectations out an ideal fuel

Functional performance

- **Should be easy to light.** Ease of lighting is a critical consumer requirement. Spending time while lighting the fuel is considered wastage of time that would have been used for preparation of the ingredients for the meal
- **It should be priced at a realistic price point** - Cook fuel is a basic need as it is directly related to food. It is an important expenditure item that has to be budgeted for. Owing to its mandatory usage, consumers are sensitive about the economic value. Purchase price as well as economic advantage during cooking are critical
- **Should be characterised by high heat intensity** - Consistent to ease of lighting, heat intensity has an impact on the speed at which the consumer will cook. Slow-cooking fuel is associated with wastage of time

"...I don't want to wait for 30 minutes for milk to boil...This is one reason why I don't like kerosene. I would rather use firewood..."

- **The quality should be consistent across regions and during all seasons** - There should be quality guarantee. The quality should not change with repeated purchase. This is a weakness that is strongly associated with charcoal and firewood.

"... Today you get a sack of charcoal that lights almost gas... tomorrow you get another that is full of charcoal what will not stop smoking..."

"...You can buy a sack of charcoal and you find that it is more of charcoal dust than charcoal... you feel cheated..."

- **It should be safe to use** – should not expose the user to the risk of explosion or poisoning. Gas is considered highly flammable fuel that can explode easily. Kerosene on the other hand is both highly flammable as well as poisonous if ingested. This is one factor that makes some consumers to place cooking stoves out of reach of children. For instance under bed, in a lockable cupboard etc.




"...I don't the feeling of leaving children in the house with fuel that is highly flammable... it denies me peach of mind..."

- **It should be smoke free (post lighting)** – should not produce smoke post-lighting/while cooking

At the moment, LPG comes closest to the ideal, though cost and inability to break into smaller quantities (below 5kg) is a hindrance to many

- How they feel when they use a fuel that is close to the ideal

[Respondents were presented with a selection of pictures to pick those that represented emotional benefits of using an ideal fuel.]

		
<p>What the picture brings to mind:</p> <ul style="list-style-type: none"> • Happiness • Relaxation 	<p>What the picture brings to mind:</p> <ul style="list-style-type: none"> • Cleanliness • Good health 	<p>What the picture brings to mind:</p> <ul style="list-style-type: none"> • Serenity • Contentment
<ul style="list-style-type: none"> • Relaxed • Comfortable • At peace • Worry free 		
<p><i>"... I should not worry about adding fuel and opening windows in the middle of the cooking process..."</i></p>	<p><i>"... It's like a feeling of being at the beach, totally relaxed with no worries in the world, 36-55 Nairobi"</i></p>	

b. How they feel when they use a fuel that is close to the ideal



What the picture brings to mind

- Too much heat
- Out of control
- Need to be closely monitored



What the picture depicts

- Smoke
- Pollution
- Invasion
- Respiratory issues



What the picture depicts

- Mountain that is hard to climb
- Strive
- Fatigue
- Uncertainty

- Out of control of the situation
- Like a nuisance to their families and neighbors
- Restricted
- Discouraged to cook
- Tired

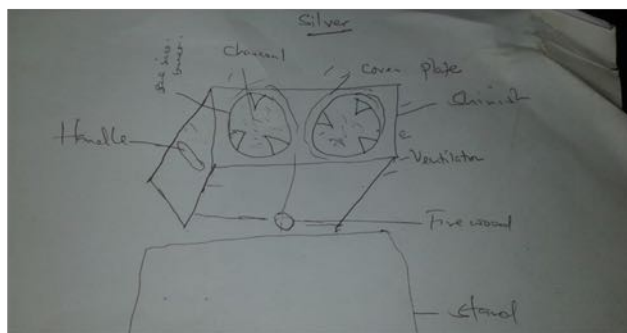
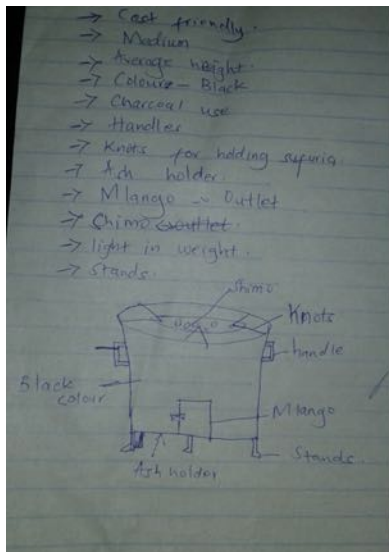
"... Smoke is repulsive to neighbors... they start complaining to the landlord that you are making their clothes on the hanging lines smell... You feel like a nuisance ..."

"... If you use fuel you cannot regulate you feel out of control and restricted... You have to be physically present otherwise it will burn the food..."

Implications: Consumers want to feel at peace, happy, relaxed and comfortable about the fuels they are using. They feel out of control, restricted and disappointed about cooking when they use fuel that they are not happy about. Capitalize on these emotions

3.7.3.2 Ideal Cook Stove Features

Consumers express expectations both at functional and structural level, as outlined below:



Functional requirements	Structural requirements
Should deliver on the promise to economise on fuel consumption	The outer material should be insulated to avoid scalding
Should be Affordable – initial outlay should be ‘reasonable’. Proposed pricing ranged between ksh. 1000 – 2000 depending on the location, with urban consumers being willing to pay the higher price range compared to their rural counterparts	Should be made of light weight material to allow portability and manoeuvre around the kitchen
Should be availability of different sizes to suit different family sizes and occasions	Should be made of strong material to withstand heavy cooking pots
Should be versatile in terms of types of fuels it can use e.g. charcoal, briskets, firewood etc.	Should have a tray for collecting ash to avoid making the floor dirty

Should significantly reduce smoke emission compared to 'ordinary' stoves

3.8 Archetype

3.8.1 Detailing Current Users of Clean Stoves

Regular users were sampled from different age bands, locations, gender and SEC¹³. These consumers do not possess high disposable income, but are willing to incur the purchase cost of a CCS due to the long term economic benefit

Across locations, majority of the families were nuclear families, living in rental houses apart from in Bungoma where consumers tended to stay with their extended families.

3.8.2 Detailing Non Users of Clean Stoves

Non users were sampled from different age bands, locations, gender and SEC

They have disposable income, but are not willing to spend required amount on clean cook stove due to insufficient knowledge of the benefits, or limited availability. They remain in status quo and make the best of what they have

Daily meal preparation

Non users living in rented houses show high interest in clean cook stoves as they go through drawbacks of constrained space which forces them to cook outside sometimes to avert smoke

Those living in their own compounds are more relaxed about the effects of charcoal or firewood smoke since they have an option of detached kitchens that do not affect the living area with smoke and the choice to use firewood.

They would ideally cook two meals, morning and night to avoid the hustle of lighting a fire during the day. They would warm the left-over food with kerosene or LPG stoves.

¹³ SEC refers to Social Economic Class which is a method of classification of consumers using various social and economic criteria such as level of education and occupation.

3.8.3 Archetype of a potential CCS user

[For purposes of the archetype we will use the name Mitchell]

Mitchell is 28 years old and lives in Kiambu. She is married with two children. She is a business lady and owns a shop that sells cereals. She is happily married and her husband is formally employed by the county government. Her day is fairly busy and starts at 5.30am. She first prepares the children for school, prepares her husband's clothes then gets ready for work. Part of the preparations includes making breakfast. She also does some household chores before going to work. Most of the time she cooks only breakfast and supper since no one is there during lunch to eat. Meal choice is determined by what is available and affordable.

In the evening she makes porridge or tea for the children when they come from school and for supper she makes githeri, green peas and potatoes and sometimes ugali and greens. Her day is easy so she doesn't mind spending extra time to make her family more comfortable.

She believes she is a caring and loving mother to her family and what frustrates her most is looking incompetent by not having food ready and having a dirty house. Her family is very important to her. She values education and especially her children's education as very important. She also values religion. She prays that one day, her and her spouse will purchase a plot and build a home of their own.

She gets back home between 4 and 6pm and prepares supper. As supper is getting ready, Mitchell helps the children with homework then does some laundry. She serves and has dinner then does the dishes. She then bathes the younger children and goes to bed at 10pm.

She does her shopping and general cleaning on the weekend since she does not open the shop then.

Knowledge and sophistication: Mitchell has seen a CCS during promotions for CSS at the market. She has heard that it emits less smoke and uses less fuel to cook. However, the CCS is very expensive. She is not conversant with the long term dangers of inhaling smoke.

Beliefs to reinforce: Owning a CSS will make her house cleaner and smell better. It will save her time due to reduced cooking time so she can engage in other activities. In the long run, it will save her money from using less fuel. Possessing a CCS would also impress her friends.

Beliefs to change: She believes that the CCS is too expensive. She is also not convinced that the CCS is strong enough to handle heavy sulfurias.

Category experience

She uses a paraffin stove to make breakfast in the morning because it's quick so her family will not run late, and charcoal for everything else. She believes that food cooked with charcoal cooks well and has better taste than food prepared on a gas stove. She also sometimes uses gas when

funds for refill are available. She does have some challenges with using paraffin and charcoal and the main one is the smoke emission from these stoves. The smoke makes the walls dirty and the paraffin fumes leave a residual odour on clothes and furniture. The smoke is also irritating to the eyes and makes her cough.

Acquisition stories: She would consider buying a CCS when the money was available though getting a CCS is not very easy. She has only seen them being sold during some market days by sales promoters.

Strategies to behave: Her house is a two room house with a very small space for cooking. Most times she is forced to cook outside her door to reduce the smoke damage in her house.

Openings: Mitchell likes to watch TV and watches Citizen TV in the evening. She particularly enjoys papa shirandula and watching afrosinema. She also watches vernacular stations. She also uses internet and likes to communicate via Whats App. She is also active on face book. She attends Chama once a month where she saves money and socializes with her friends. None of her close friends own one but if they did she would probably purchase one as well.

Brand Associations: Mitchell expectations from a CCS is efficiency and cost saving. A CCS would also increase her status in her circles. Another benefit would be a cleaner house that smells fresh.

4 Conclusions and Recommendations

4.1 Conclusions

TNS concludes in line with the objectives of the study: establish current knowledge, attitudes, motivations and behaviours around use of clean cook stoves and fuels, identify the key factors that influence knowledge, attitudes and practices around adopting clean cook stoves, establish satisfaction points and pain points surrounding use of clean cook stoves, unearth key barriers to adopting clean cook stoves amongst non-users, and gauge willingness to pay for clean cook stoves.

TNS concludes as follows

- Knowledge of CCS is mainly tagged to particular brands and is based on product attributes. Main concerns as pertains to health are of a more immediate nature such as irritation from smoke with limited mentions of long term effects of indoor pollution on health.
- Key motivations for uptake are fuel efficiency, cooking efficiency, hygiene and status. Challenges that emerge regarding CCS are the initial cost outlay, limited range of sizes of CCS and access owing to poor distribution of the stoves especially in rural areas. Supermarkets did emerge as important points of purchase and awareness creation through shelf displays.
- A gas stove is perceived as the ideal source of heat for cooking but the main barrier is the high initial cost and the refill cost. The CCS cuts across these varying needs and can address them adequately. It can be a close alternative to the gas stove.
- TV is an instrumental channel for information on CCS. Other channels include radio and word of mouth (WOM). WOM emerged as a particularly influential channel for triggering uptake especially through testimonials from other users within the target consumers' circles. Personal sales have also been mentioned as having induced purchase.
- Younger consumers are especially active on social media and can be targeted through such channels. The aspirational aspect of CCS is also a factor that can induce trial with younger consumers.
- Women are key influencers on the decision to purchase and also in the purchasing themselves. Men are in some instances involved in the financing of the stoves.
- Barriers to overcome in order to increase uptake are the initial high cost outlay, increase access to CCS through better distribution and communication of product attributes to address concerns on ability to cook large amounts of food. Other motivators include knowledge of the health and hygiene benefits such less smoke emissions.
- A summary archetype of the CCS user is a consumer from Social Economic Class (SEC) C1-C2 who does not possess high disposable income, but is willing to incur the purchase cost of a CCS due to the long term economic benefit.
- The non-user is also from SEC C1-C2 and requires being convinced on the long term economic benefit to mitigate the barrier of high initial cost outlay.

4.2 Recommendations

Subject to the foregoing findings and conclusions, TNS recommends the following:

- PS Kenya should consider getting a detailed understanding of the willingness to pay beyond the perceptual expensive seen in this study. This should ideally entail a small study that will look at the following:
 - Willingness to pay among non-users probably using discrete choice modelling
 - Potential brand trade-off for current users
- Given the level of competition, PS Kenya should invest on a detailed market study that will look at the market share and volumes depending on the need to either push the entire category or a specific brand. PS Kenya can then learn more from the activities of around the brand/s that has the largest market share.

5 Appendices

- Recruitment questionnaire
- Schedule of focus groups
- Discussion guides
- SEC definitions
- Data collection approach

5.1 Recruitment Questionnaire

INTERVIEWS WITH CONSUMERS	
<p>Respondent's name _____</p> <p>Occupation _____</p>	
<p>Interviewer's name _____</p> <p>Job Number _____ I.D. _____</p>	
<p>DECLARATION:</p> <p>I declare that the respondent, whose name and address appear above, was unknown to me until the interview, and that this interview has been conducted within the ESOMAR-World Market Research Association Market Code of Conduct.</p> <p>I confirm that before returning this questionnaire, I have checked that it meets with and was carried out in accordance with the requirements outlined in the instructions supplied to me for this study.</p> <p>I understand that the information given to me during the interview must be kept confidential.</p>	<p>Interviewer signature.</p> <p>SIGNED:</p>

Introduction:

Good morning/afternoon, my name is _____ from TNS RMS, a global market research company which seeks people's opinions on different products so that manufacturers and service providers can produce what is needed.

I want to ask your opinion about some things, and I want you to be honest with me (I don't want you to give me any compliments) so that we can try to develop products and services that best suit your needs. Could you spare a few minutes of your time to give me your opinion?

YES	1	CONTINUE
NO	2	TERMINATE

If yes, state: This interview will take approximately 10 minutes. We thank you for your valuable time and co-operation.

FIELDWORK SCHEDULE

12 FGDS AND 6 IN HOMES

No.	Location	Segment	Age	Venue	SEC	Time	in homes	
		NAIROBI AND ITS ENVIRONS						
1	Nairobi	Aware of not using	25-35 Yrs.	TNS Offices	C1	10.00 – 12.00 pm		

2	Nairobi	Current users	36-55 yrs.	TNS Offices	C2	03.00 - 05.00 pm	-1	
3	Kiambu	Not aware, not using	25-32 Yrs.	TBC	C1	11.00 - 01.00 pm		
4	Kajiado	Current users	25-32 Yrs.	TBC	C2	11.00 - 01.00 pm	1	
		EASTERN						
5	Meru	Current users	36-55 Yrs.	TBC	C2	11.00-01.00 pm	1	
6	Meru	Aware of, not using	25-35 Yrs.	TBC	C1	03.00-05.00 pm		
		CENTRAL						
7	Muranga	Current users	25-35 Yrs.	TBC	C2	11.00-01.00 pm	1	
8	Muranga	Non users	36-55 Yrs.	TBC	C1	03.00-05.00 pm		
		RIFT VALLEY						
9	Nakuru	Non user	25-35 Yrs.	TBC	C1	11.00-01.00 pm		
10	Nakuru	Current user	36-55 Yrs.	TBC	C2	03.00-05.00 pm	1	
		WESTERN						

11	Bungoma	Non users	36-55 yrs.	TBC	C2	11.00-01.00 pm	
12	Bungoma	Aware but not using	25-35 Yrs.	TBC	C1	03.00-01.00 pm	1

SPECS & DETAILS:

- All respondents should be Kenyan
- All respondents should be female
- All respondents to be aged between 25 – 55 years
- They should be fluent in English or/and Swahili
- Have a good representation of large vs. small households
- Have a good representation of mothers who use different fuel types as their main fuel
- All to be open and articulate – willing to share their points of view
- All respondent should be available to attend the session at the specified time and date

GENERAL SCREENER QUESTIONS

1) Record gender. Please do not ask

Gender	Code	INSTRUCTIONS
Male	1	TERMINATE
Female	2	CONTINUE

2) Please tell me; in which of this age categories do you fall?

Age Group	Code	INSTRUCTIONS
Below 25 Yrs.	1	TERMINATE
25-35 Yrs.	2	RECRUIT
36– 55 Yrs.	3	RECRUIT
56 Yrs. Or older	5	TERMINATE

3) Have you ever attended a market research discussion?

Whether ever attended	Code	INSTRUCTIONS
Yes	1	CONTINUE
No	2	

4) [If ever attended] How long ago did you attend the discussion?

Attendance of focus group	Code	INSTRUCTIONS
Less than 1 year ago	1	TERMINATE
More than 1 year ago	2	CONTINUE

5) Do you or any of your close relatives [living with you]/ or close acquaintances who work for any of the following professions/trade/organisations/companies?

Organisation	Yes	No	INSTRUCTIONS
Advertising	1	1	

Marketing	2	2	IF CODED YES TO ANY OF THE OCCUPATIONS LISTED, TERMINATE
Market Research	3	3	
Journalism	4	4	
Public Relations	5	5	
Sales of cooking stoves	6	6	

SPECIFIC QUALIFYING QUESTIONS

6) a. Which cooking jiko are you aware of?(MA)

b. which do you use?

	a. AWARE OF	b. USE
Efficient	1	1
Kenyan clay jiko	2	2
Normal tin jiko	3	3
NONE	4	4

- A. RECRUIT FOR USERS THOSE WHO ARE AWARE OF AND USE EFFICIENT JIKO
- B. RECRUIT FOR AWARE OF BUT DON'T USE THOSE WHO KNOW EFFICIENT JIKO BUT DON'T USE
- C. RECRUIT FOR NOT AWARE OF AND NOT USING THOSE WHO DON'T KNOW AND DON'T USE EFFICIENT JIKO

7) What fuel do you use? (MA)

	Code	INSTRUCTION
Charcoal	1	CHECK QUOTA

Ethanol	2	
Pellets	3	
Saw dust	4	
Wood	5	
Others (write in)	6	

RECRUITER HAVE A GOOD SPREAD OF FUELS USED AS MOST OFTEN FUELS, I.E WOOD,ETHANOL, PELLETS, SAW DUST AND CHARCOAL

8) How long have you used ajiko?

Duration	Code	INSTRUCTION
More than 1 year	1	CONTINUE
Less than 1 year	2	TERMINATE

9) How often do you use your jiko?

Frequency of use	Code	INSTRUCTION
Daily	1	CONTINUE
More than 3 times per week	2	
2 times or less per week	3	TERMINATE

10) What media do you use

	Code	INSTRUCTION
TV	1	

Radio	2	MUST CODE ATLEAST TWO TO CONTINUE
Newspapers	3	
Magazines	4	
Internet	5	

11) Determining Socio-Economic Status

i Which of the following items do you have at home? [MULTIPLE RESPONSE]			
			SCORE
Ownership	Household help		2
	Fridge / deep freezer		2
	Video recorder		1
	DVD (digital video disk) player		5
	DVD recorder		4
	Blue ray player		4
	Digital camera		1
	1 car		1
	Multiple cars		3
	Personal driver		2
	Color TV (regular)		1
	Plasma/LCD TV		3
	Black and white TV		1
	Home theatre system		2

	Music system		1
	Air conditioning unit		3
	Satellite dish		4
	Cable satellite		3
	Washing machine		4
	Telephone (landline)		3
	Mobile phone		2
	Multiple mobile phones		3
	Desktop computer		3
	Laptop		4
	Tablet (e.g. Ipad, galaxy tab etc)		4
	Wireless internet access		4
	Cable internet access		3
	Dongle internet access (i.e. USB)		2
	Generator		4
Cook	Gas / electric cooker		2
	Microwave		2
	Kerosene stove		1
	Charcoal / wood		0
Toilet type	Inside / outside WC		2
	Pit latrine		1
	None		0

Main water source	Inside / outside borne tap		2
	Bore hole		2
	Well		1
	Stream		0
ii What levels of education have you achieved to date? [MULTIPLE RESPONSE]			
			SCORE
	No formal education / illiterate		0
	Some primary education		1
	Completed primary education		1
	Some secondary education		1
	Completed secondary education		2
	University / Polytechnic: OND (Ordinary National Diploma/Bachelors degree)		3
	University / Polytechnic: NHD (National Honors Diploma/Bachelors with Honors degree)		4
	Post-university incomplete		3
	Post-university complete		5
iii What type of house do you live in? [SINGLE RESPONSE]			
			SCORE
	Villa/Mansion (house with at least 4 bedrooms)		6
	Flat/Townhouse		3

Duplex (2 storey apartment)		5
Mini flat (at least 2 bedrooms)		2
Room and parlour / studio		1
Room		1
High class self-occupied bungalow		4
Low class self-occupied bungalow		1
Other		1

iv What is your occupation? [SINGLE RESPONSE]

		SCORE
Senior management / admin		4
Manager		3
Professional e.g. accountant / doctor / lawyer / surveyor / engineer etc		5
Skilled workers (mechanic, tailoring, carpenters, bricklayers)		2
Unskilled workers		1
Clerical workers		2
Farmer / cattle rearer		1
Unemployed		0

v Can you tell me a bit about you and your lifestyle? [MULTIPLE RESPONSE]

		SCORE
I am a member of a social / recreational club (i.e. a members club)		4

I am a member of gym- not part of a social / recreational club		3
Travel abroad for holidays		5
Read regularly as a habit		3
Spend leisure time with friends		1
Attend social gatherings		1
Like modern fashion		1

TOTAL SCORE FOR Q15i – Q15v		
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A – MUST SCORE 76+

B – MUST SCORE 70 AND 75

C1 – MUST SCORE BETWEEN 56 AND 69

Upper C2- MUST SCORE BETWEEN 46 AND 55- TERMINATE

Lower C2 - MUST SCORE BETWEEN 35 AND 45- TERMINATE

DE – MUST SCORE 34 OR BELOW- TERMINATE

INTERVIEWER RECRUIT SEC C1 AND C2 ONLY

12) How many people live in your household?

	Code	INSTRUCTION
Three and below	1	RECRUIT FOR SMALL FAMILY

3-4 people	2	RECRUIT FOR LARGE FAMILIES
5 people and above	3	

INTERVIEWER ENSURE A GOOD SPREAD OF SIZE OF FAMILIES IN THE GROUP

13) I will read out some attributes, please tell me which are relevant for you

I am able to express my opinion in groups	1	CONTINUE
I am interested in other people's ideas and opinions	2	
I am interested in keeping up with the latest trends	3	
I enjoy socializing and meeting new people	4	
I usually spend my free time at home alone rather than outdoors with friends/family	5	TERMINATE
I am rarely interested in the latest trends	6	

14) Please tell me all the things you can do with a paper clip

INTERVIEW CHECK FOR CREATIVE ANSWERS

Based on your responses, we would like to request for your time to have a deeper discussion about coking stoves. This will take approximately 2 hours.

Agreed; Recruit

Refuse; Thank and close

Respondent Details	
Full Names:	
E-Mail address:	
Mobile Tel No 1:	
Mobile Tel No 2:	
Physical Address of IDI:	
Date of FGD	
Time of FGD	

I certify that this interview was carried out by me in accordance with the briefing instructions I received and that the opinions represent a true and accurate record of the responses given by the respondent named above.



Interviewer names _____

Mobile number _____

Signature _____

Date _____

5.2 Schedules of the focus groups

NO.	LOCATION	SEGMENT	AGE	DATE	VENUE	SEC	TIME
NAIROBI AND ITS ENVIRONS							
1	Nairobi	Male Aware of not using	25-35 Yrs.	1 st Sep 2016	TNS Offices	C1	10.00 – 12.00 pm
2	Nairobi	Females Current users	36-55 yrs.	1 st Sep 2016	TNS Offices	C2	03.00 – 05.00 pm
3	Kiambu	Females Current user	25-35 Yrs.	2 nd Sep 2016	TBC	C1	11.00 – 01.00 pm
4	Kajiado	Females Not aware, not using	25-35 Yrs.	2 nd Sep 2016	TBC	C2	03.00 – 05.00 pm
CENTRAL							
5	Muranga	Females Non users	36-55 Yrs.	5 th Sep 2016	TBC	C1	03.00-05.00 pm
6	Muranga	Females Current users	25-35 Yrs.	5 th Sep 2016	TBC	C2	11.00-01.00 pm
EASTERN							
7	Meru	Females Current users	36-55 Yrs.	6 th Sep 2016	TBC	C2	11.00-01.00 pm

8	Meru	Females Aware of, not using	25-35 Yrs.	6 th Sep 2016	TBC	C1	03.00-05.00 pm
RIFT VALLEY							
9	Nakuru	Females Non user	25-35 Yrs.	5 th Sep	TBC	C1	11.00-01.00 pm
10	Nakuru	Females Current user	36-55 Yrs.	5 th Sep 2016	TBC	C2	03.00-05.00 pm
WESTERN							
11	Bungoma	Males Current users	36-55 yrs.	7 th Sep TBC	TBC	C2	11.00-01.00 pm
12	Bungoma	Females Aware but not using	25-35 Yrs.	7 th Sep TBC	TBC	C1	03.00-01.00 pm

5.3 Discussion guides

5.3.1 PROJECT COOK STOVES IN HOMES GUIDE

INTRODUCTION

10 MINS

To profile the consumer and understand their values

- Moderator's name, TNS, Market Research
- Explain that don't work for any of the companies or products that we will be talking about, so don't mind what is said about them
- Opinions, no right or wrong answers ... want their honest views
- Importance and value of participant's contribution
- Explanation of audio recording
- Confidentiality of discussions
- Approximate time the discussion will take place – appx. 2 hours
- Respondent introduction:
 - Name
 - What they do for a living
 - Does anyone else work in that household?

Now I would like you tell me a bit more about yourself...

- How would you describe your daily routinetake me through it...Is it different over weekdays and weekends?
- What things are important to you? Why are they important?
- If you think about the next 2 – 3 years; what are some of the things that you would like to achieve?

- How many people live in your household
- What is your relation to these people
- Who are your key influencers in the society? Who are your role models (local)
- What social circles are you part of? When and how do you bond/ meet them? What do you talk about?

- Talking about meals, what meals do you normally cook? Why those?
- How many times do you cook in a day?
- Does this change? What causes the change?
- Do you use any other cook stoves besides what you are currently using? What brings about the change?

COOK STOVE USE OBSERVATION

MODERATOR ASK THE RESPONDENT TO LIGHT THE COOK STOVE AND PROCEED TO COOK LIKE SHE NORMALLY DOES, THEN PROCEED WITH THE FOLLOWING LINE OF QUESTIONS

- What materials are used to light the cook stove? What are the reasons for choosing those
- What method is used to light the cook stove
 - Does this change sometimes? What reasons bring about the change?
- How long does it take to light?
 - How much fuel is put in the cook stove
 - How easy/difficult is it to light the cook stove
- How does the size of the cook stove compare with the sufuria used
 - What is the strength of the cook stove in regards to the weight of the sufuria
- What is the speed of cooking
 - Does she add fuel during the cooking process
 - How is this done?
 - How often does she open or shut the door, what is the reason for this?
- After cooking how long does she leave the food on the cook stove? Why?
- What does she do with the remaining heat after the food is done?
- Are there any challenges respondent faces with the cook stove?
 - What can make it easier/ how can they be addressed?

If you could talk to the manufacturers, what would you suggest to make the cook stove better?

MODERATOR ASK THE FOLLOWING SECTION AFTER OBSERVATION OF NON USERS

NON USERS OF CLEAN COOK STOVES

- In your opinion, what is the definition of a clean cook stove /” improved jiko”?
- How would you describe it?
- What are your perceptions of clean cook stove /” improved jiko”s? What do you think of them?
- What are they used for?
- What benefits do you think they have?
- And what are some of the drawbacks to using them?
- How would the clean cook stove compare with the jiko you are currently using?
- Which do you feel would be better? Why?
- Pricing
- How much do you think the clean cook stove /” improved jiko” cost?
- How did you feel about this?
- What’s the highest price you would be willing to pay for the clean cook stove /” improved jiko”?
- What price would be too low?

WRAP UP

5 MINUTES

CHECK WITH CLIENTS FOR ANY OTHER QUESTIONS

THANK RESPONDENTS AND CLOSE

5.3.2 PROJECT COOK STOVE DISCUSSION GUIDE FOR FGDS

OBJECTIVES OF THE STUDY

- Consumer understanding
 - Profile consumer demographics
 - Understand household composition
- Category understanding
 - Fuel repertoire
 - Merits and demerits of each fuel type
- Brand understanding
 - Establish brands repertoire, consumed brands
 - Evolution over time
- Untapped opportunities
 - Establish opportunities within cooking stoves
 - Understand ideal stove

INTRODUCTION

To profile the consumer and understand their values

- Moderator's name, TNS, Market Research

- Explain that don't work for any of the companies or products that we will be talking about, so don't mind what is said about them
- Opinions, no right or wrong answers ... want their honest views
- Importance and value of participant's contribution
- Explanation of audio recording
- Confidentiality of discussions
- Approximate time the discussion will take place – appx. 2 hours
- Respondent introduction:
 - Name
 - What they do for a living
 - Does anyone else work in the household
 - How they like spending their free time

Now I would like you tell me a bit more about yourself...

- How would you describe your daily routinetake me through it...Is it different over weekdays and weekends?
- What things are important to you? Why are they important?
- If you think about the next 2 – 3 years; what are some of the things that you would like to achieve?
- How many people live in your household
- What is your relation to these people
- Who are your key influencers in the society? Who are your role models (local)
- What social circles are you part of? When and how do you bond/ meet them? What do you talk about?

CATEGORY UNDERSTANDING Understand current repertoire of fuels used
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Measuring consumer knowledge and practice on fuels used

- What are all the types of cooking fuels that are available to you?
- What occasions are suitable for each fuel type? Why? –
- Yourself do you use different fuels ?
- If yes, which ones?
- And when and why? to cook different foods? Why do you do this?
- How satisfied are you with the fuels you use
 - Which ones give the best satisfaction,
 - And which ones give the least?

- How often do you buy the fuels? What quantity and at what cost?

MODERATORS PROBE FOR THE FOLLOWING PARAMETRES IN TERMS OF SATISFACTION

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- Cost
 - How satisfied are you with the cost of your fuel?
 - How much would be affordable to you
- Availability
 - Where do you get fuel from?
 - How do you feel about this source? Why do you say so?
 - Is this convenient for you? If not where would you want to get it –
- Health impact on the family
 - How do you feel about the fuel you use in terms of
 - safety (use)
 - health
- Storage
 - Where do you store your fuel?
 - How do you feel about this?
- Ease of lighting
 - How do you light your fuel
 - How do you feel about this procedure
 - How should the fuel be to light easily?
- Speed of cooking
 - How fast does your fuel cook?
 - Do you feel your current fuel is sufficient?
 - Should this differ with different types of food?
- Environmental impact
 - How do you think your fuel impacts the environment?
 - Why is it important that the fuel is friendly to the environment?
 - What kinds of people use the different fuel type? How would you describe them

MODERATOR PROBE ON WOOD, CHARCOAL AND GAS

- Do you wish there was something better? What is your definition of ‘better fuel’? How well do clean cook stove /” improved jikos fit within the needs for ‘better’ cooking solutions?
- If cost was not an issue, which fuel would you want to use? How would you feel using the fuel they like best?
- Have the fuels you use changed over your life? What is changing?

BRAND SIGHT GALLERY EXERCISE
USE BRAND SIGHT GALLERY PHOTOS

MODERATOR BRING OUT THE BRAND SIGHT GALLERY PHOTOS AND EXPLAIN TO RESPONDENTS THE PROCEDURE

- We are now going to talk about the different cooking fuels you are aware of and use. I would like you to flip through the folder and select any 3 pictures that you feel corresponds well to the feelings/sensations/emotions you have when thinking about your fuel type (MENTION BRANDS RELEVANT TO GROUP). Now, from the 3 you have selected, try and zero down to one picture.

MODERATOR NOTE: Once all respondents have chosen a picture, ask them to hold up the picture, say the number out loud for the recorder.

- Amongst all the different types of fuel you are currently using, which ones are the **most important** to you that you can do without, and which ones are **not very important**, you feel you can do without them?

UNDERSTANDING PERCEPTIONS OF CLEAN COOK STOVE /" IMPROVED JIKO"S
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Let us now talk about clean cook stove /" improved jiko"s

- When I say '**clean cook stove /" improved jiko"s**' what immediately comes to your mind – it could be anything?
- Please tell me all the types of clean cook stove /" improved jiko"s that you know of –

MODERATOR – PLEASE NOTE THESE ON FLIP CHART FOR SUBSEQUENT DISCUSSIONS

Amongst current users of clean cook stove /" improved jiko"

- What is your source of awareness/how did you come to learn about clean cook stove /" improved jiko"s?
- Which sources of awareness do you consider as most effective, and the most reliable?
 - When is your primary consumption time of your favorite source of entertainment and/or information?
 - If internet is mentioned: which sites? FB, Twitter,
 - If Roadshow is mentioned: what elements of the roadshow do you remember?
- What were you told about the clean cook stove /" improved jiko"s that made you want to try them out?
 - Why was this important to you?
 - What do you like about them,
 - And what do you dislike?
- What do you typically cook with the clean cook stove /" improved jiko"s?
 - How often do you use the clean cook stove /" improved jiko"?
 - What amount of food do you usually cook with the clean cook stove /" improved jiko"s? How do you feel about this
 - Do you have any unmet needs in regards to what you use the clean cook stove /" improved jiko"s for?
 - Is there any cooking/heating you can't do with the clean cook stove /" improved jiko"s? How can this be improved?
 - In such instances what is your alternative?
- What do you think people think of you when they see you using clean cook stove /" improved jiko"s? Why?
- Do you use other types of clean cook stove /" improved jiko"s? What need do they cater for that the clean cook stove /" improved jiko" does not meet
 - What would you recommend to improve the clean cook stove /" improved jiko"sin this aspect?
- If you were to tell a person who does not know much about clean cook stove /" improved jiko", what would you tell them about it? -
 - Where can they get them?
 - What are the benefits?
 - What are the challenges?

Amongst non-users of clean cook stove /" improved jiko"s (that are aware about their existence)

- Which sources of information do you consider as most effective, and the most reliable?
 - When is your primary consumption time of your favorite source of entertainment and/or information?

- If internet is mentioned: which sites? FB, Twitter.If Roadshow is mentioned what elements of the road show do you remember
- What are all the types of cook stoves that are available to you?
- And which ones do you use?
- What is the function/role of each type of cook stoves? What is each ~~clean~~ cook stove type used for?
- Which do you prefer using the most? Why?
- In your opinion, what is the definition of a clean cook stove /” improved jiko”?
- How would you describe it?
- What are your perceptions of clean cook stove /” improved jiko”s? What do you think of them?
- What are they used for?
- What benefits do you think they have?
- And what are some of the drawbacks to using them?
- Pricing
- How much do you think the clean cook stove /” improved jiko” cost?
- How did you feel about this?
- What’s the highest price you would be willing to pay for the clean cook stove /” improved jiko”?
- What price would be too low?
-

MODERATOR LADDER ON THE BENEFITS TO GET DEEPER UNDERSTANDING

- What do you think of the people who use them?

PERSONIFICATION EXERCISE

- If a clean cook stove /” improved jiko” were to turn into a human being what sort of a person would it be
 - Gender, occupation, SEC, personality

Moderator Repeat the personification exercise for Kenyan claystoves

- Of these two people who do you feel closest to?
 - why are you not using the clean cook stove /” improved jiko”s

- What can be done to make you want to use them?

CLEAN COOK STOVE /" IMPROVED JIKO"SBRAND UNDERSTANDING
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To identify brand repertoire

MODERATOR ASK THE FOLLOWING SECTION TO USERS OF CLEAN COOK STOVE /" IMPROVED JIKO"S

- What brands of clean cook stove /" improved jiko"s have you ever used?
 - How did you learn about these brands?
- And which brand do you currently use?
 - Why did you choose this particular brand?
- And which brand would you never use?
 - Why not?
- If you were to tell someone about the clean cook stove /" improved jiko"that is not aware of it, how would you describe the stove?
 - What is the key importance you would mention about the clean cook stove /" improved jiko"?

- Think of the time you were buying the clean cook stove /" improved jiko". What factors did you consider when choosing a clean cook stove /" improved jiko"sbrand?

MODERATOR WAIT FOR SPONTANEOUS MENTIONS THEN PROBE ON THE FOLLOWING FACTORS.

- Price
 - i. How much did you pay for the clean cook stove /" improved jiko"?
 - ii. How did you feel about this?
 - iii. What's the highest price you would be willing to pay for the clean cook stove /" improved jiko"?
 - iv. What price would be too low?
- Durability
 - i. Strength of material

- What do you think of the material the clean cook stove /” improved jiko” has?
 - If you were to choose what material would you prefer?
 - Manufacturer/ brand name
 - i. Which brand do you perceive to be good? Why do you say that?
 - Local versus imported brands
 - i. What are the strengths of local brands?
 - ii. What are the strengths of imported brands?
 - Design
 - i. Size? What would be the ideal size for a day to day cooking? And what would be the ideal size for occasional cooking?
 - ii. Length of foot stands, how high would they want the clean cook stove /” improved jiko”s to be?
 - Quality (moderator get parameters of quality)
 - Availability
 - i. What channels of distribution would you suggest?
 - ii. Where would you want it to be sold? Why there?
 - Purchasing outlets
 - i. Where do you buy clean cook stove /” improved jiko”s? Why did you choose this place?
 - ii. How did you feel about buying it there?
 - iii. Where would you be happy to find it?
 - Storage of the clean cook stove /” improved jiko”
 - i. Where do you store the clean cook stove /” improved jiko”s? Why do you choose there?
 - ii. How do you feel about this storage area
-
- Thinking about a few years back, have you changed the brands you are using? If yes why? If no what makes you happy about the cook stove?

 - Are there any challenges you are facing with the clean cook stove /” improved jiko”s?

MODERATOR WAIT FOR SPONTANEOUS MENTIONS THEN PROBE ON THE FOLLOWING PARAMETRES OF CHALLENGES

- Ease of use
- Ease of storage?
- Speed of cooking?
- Amount of fuel used?
 - Addition of fuel during cooking process
- Types of food it can cook?
- Type of fuel it is compatible with?
- Accessibility of the fuel?
- Size of clean cook stove /” improved jiko”s in proportion to sufuria?
- Sizes of clean cook stove /” improved jiko”s available in the market? How many different sizes would they want
- Quality of material?
- Ease of lighting

Moderator understand design constraints leading to this

Looking at the overall performance of your clean cook stove /” improved jiko”

- Which of your **needs** is it **meeting** well?
- And which of your **needs** is it **NOT meeting** well?
- Given a chance to **change** your current brand, **what would you change?**

And what would you leave the same that you are ok with?

UNDERSTANDING EMERGING NEEDS

Establish gaps in the market that can be opportunities to tap into

- Looking at the brands we currently have in the market, is there anything missing that you would wish could be changed?

Ideal brand:

- Imagine that you were in a position to create ideal clean cook stove /” improved jiko” for you. One that suits your needs best. How would it be?

ALLOW FOR SPONTANEOUS REACTIONS BEFORE PROBING ON THE FOLLOWING IF NOT MENTIONED:

- How should the clean cook stove /” improved jiko”swork? Describe it to me in depth...
- What about the **design**? How should it look like? – Colour, sizes,material type, components etc.
 - What structure should it have to suit your cooking positions, and size of cooking area?
- What should it be able to cook?
- What else wouldyou expect the clean cook stove /” improved jiko”s to deliver? –

MODERATOR LIST CONSUMER EXPECTATIONS

- Of all these things you desire to get out of the clean cook stove /” improved jiko”s, which ones would you say are a **MUST HAVE**? I.e. those things that the clean cook stove /” improved jiko”s must deliver/that are critical for you? And would make you go out and get one?
- And what would you say is **LESS CRITICAL**? Those things that you can do without?

Thinking of the **clean cook stove /” improved jiko”s currently in the market**, is there any that is **close to this description**? What about this clean cook stove /” improved jiko” makes you say so

Media selection

- If the manufacturer were to communicate about the clean cook stove /” improved jiko”s what would be the best media to use, so as to reach people like you?

Purchasing services

- Would you be open to borrowing to allow purchase of a clean cook stove /” improved jiko”?
- Who makes the final decision on borrowing and financing purchases in the home?
- From what channels would you feel comfortable to borrow from?
- What is the maximum amount of money you would be willing to borrowto buy a clean cook stove /” improved jiko”

After sale services

- What services or support would you require after taking the clean cook stove /” improved jiko”s home?

- Where would you wish the service provision location to be? In case of any problem, where would you want help to be offered?
- What more information about the clean cook stove /” improved jiko” would you want to have?

WRAP UP

CHECK WITH CLIENTS FOR ANY OTHER QUESTIONS




THANK RESPONDENTS AND CLOSE

5.4 Social Economic Class definitions

Social Economic Group	Definition
AB	Fully qualified professional: senior manager / government officer; professor/lecturer; graduate, secondary school teacher; owner of large farm; other business
C1	Junior/Middle manager: foreman; senior clerk; qualified technician e.g. laboratory, nursing, owner or manager of medium sized farms, non graduate (P1/S1) teacher
C2	Skilled worker, e.g. mechanic, carpenter, part qualified technician, non graduate teacher (P2/P3/UT) junior clerks. Owner of small farm, chief

<p>DE</p>	<ul style="list-style-type: none"> - Semi skilled/part trained manual worker; house servant; waiter/steward; shop assistant. Forestry worker; game scout; owner of small plot selling some produce - Subsistence farmers, plus irregularly employed unskilled workers (labourer, casual, watchman, sweeper, etc) NB by convention the E class with no regular cash income is only recognized in rural areas
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5.5 Data collection approach

1.	Desktop research	
		<p>In line with the TOR the first step was to do a desk top review and analysis of current existing information on clean cook stoves. This involved reviewing research results of previous researches conducted on clean cook stoves; going through fact sheets and reviewing available articles on the clean cook stoves. This information formed the basis of our research, as it helped identify existing information as well as establish informational gaps related to clean cook stoves.</p> <p>A summary of the results is annexed in this document</p>
2.	Formative research	
	<p>2.1. Focus groups</p> 	<p>The second step was to conduct the formative research, whose design and implementation was heavily influenced by the output of the desktop review. Focus group forums were conducted in order to gain an in-depth understanding of:</p> <ul style="list-style-type: none"> • The consumer –demographics and psychographics • Consumer relationship with the wider cook stove category • Current state of play when it comes to brands of clean cook stoves • Untapped opportunities that PS Kenya can leverage on
	<p>2.2. Home visits</p> 	<p>Home visits were used to compliment the focus groups, as they enabled the researcher to understand the everyday context of the consumer by observing them in their natural setting/from their homes. In home observations were carried out amongst 6 females, some being users and others non-users of CCS</p> <p>An observation guide was used to guide the introductory sections. Probing and observation took a natural course. The session lasted 50 - 60 minutes</p>