



Kenya Consumer Segmentation Study



Executive Summary

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Background

The **Global Alliance for Clean Cookstoves** was launched in 2010 with a mission to catalyze the uptake of clean and efficient cookstoves through a market-based approach to save lives, improve livelihoods, empower women, and protect the environment.

Demand for cleaner cookstoves and fuels has historically been constrained by low consumer awareness of the benefits of cleaner solutions coupled with a cultural attachment to traditional cooking methods and fuels. In order to design effective policies and programs to scale up the use of cleaner cooking alternatives, it is imperative that the barriers to improved cooking technologies be well understood at the household level.

This study is one of a series of studies commissioned by the Alliance to develop a better understanding of consumer needs and preferences around cookstoves and fuels, as well as other key factors related to effective marketing and sales of stoves and fuels, including messaging and promotion, pricing and payment schemes and distribution channels.

This study focuses on Kenya, one of eight Alliance focus countries that have demonstrated considerable potential to foster a robust market for clean cooking solutions. The Alliance's activities in Kenya are guided by a Country Action Plan (CAP) that was developed through locally-led consultations with national stakeholders and adopted in April 2012. The CAP serves Kenyan stakeholders, government and private, as a blueprint to monitor progress toward the 7 million household goal.

The study focused on three preselected segments of the Kenyan market and addressed the following five thematic areas:

- Cooking and household energy needs
- Cultural traditions and implications
- Reaching the consumer
- Marketing Messaging
- Consumer financing

The following slides summarize key findings from each area.

Methodology and Sample

The study examined the three preselected consumer targets listed below, as determined from an earlier high level segmentation study that identified them as having the greatest potential to purchase and adopt clean cookstoves and fuels.

Region	District	Location	Fuel used	Household size	Income level (KES per month)	Head of Household profile
Central	Nyeri	Urban	Charcoal, purchased	More than 3 people	10,000 -20,000	24-54 years in age. Preferably female with primary and secondary school education
Western	Kakamega	Rural	Wood, collected	Around 4 people	9,000 – 13,000	
Coastal	Kilifi	Urban	Charcoal, purchased	Around 4 people	13,000 – 20,500	

The study consisted of qualitative and quantitative components.

Qualitative Research: this comprised of in-home immersions and focus group discussions amongst target consumers as well as in-depth interviews with sector stakeholders.

Quantitative Research: Face to Face (F2F) interviews were conducted amongst the identified segments.

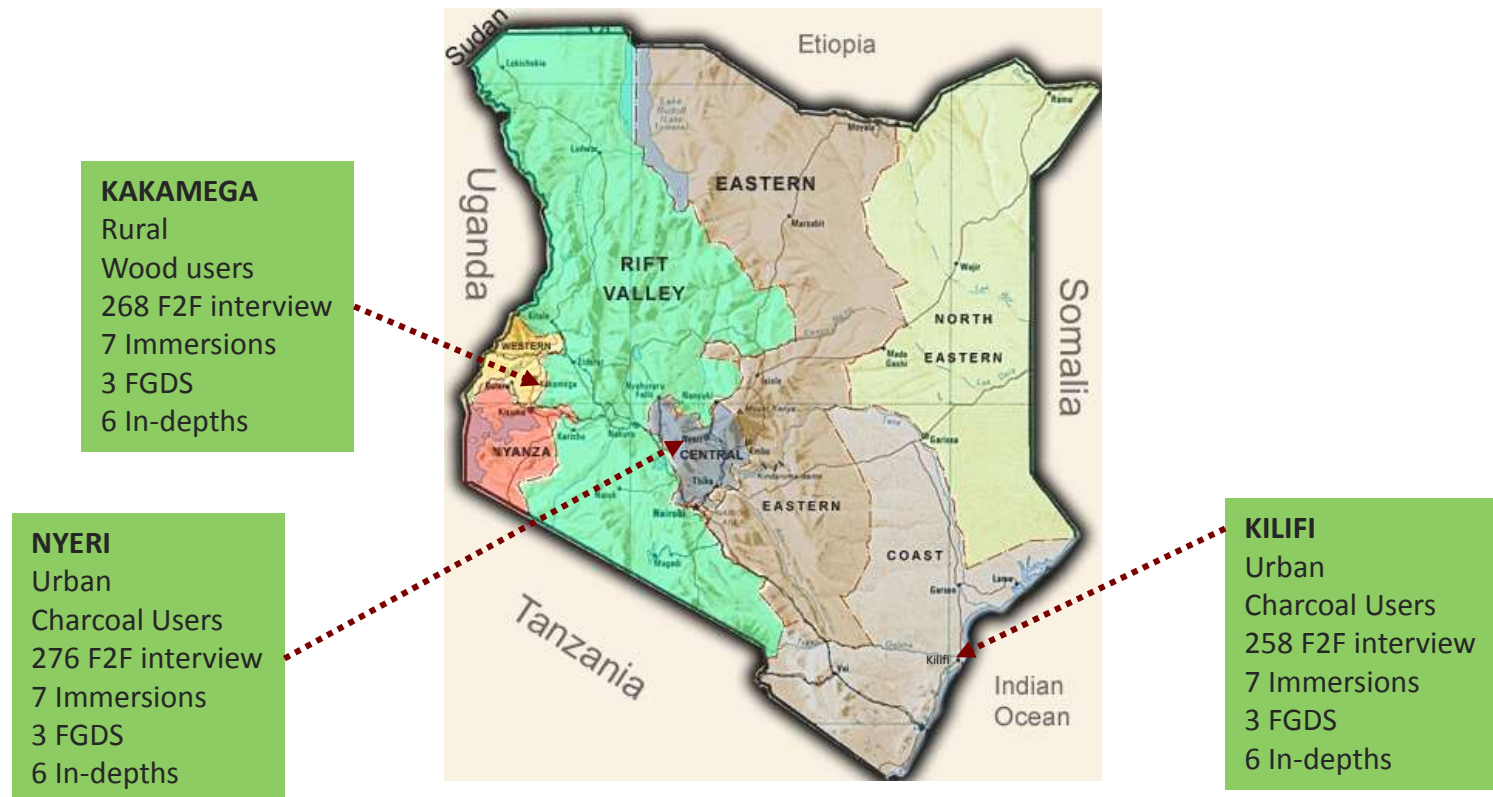
NOTE:

Post completion of the study, a number of information gaps were identified and it also became apparent that adherence to segment criteria for the quantitative component of the study had not been achieved. It is against this background that a second wave of the study was conducted to address these critical issues emerging from wave one.

The report is based on quantitative findings from the second wave while the qualitative information contained has been derived from both study waves.

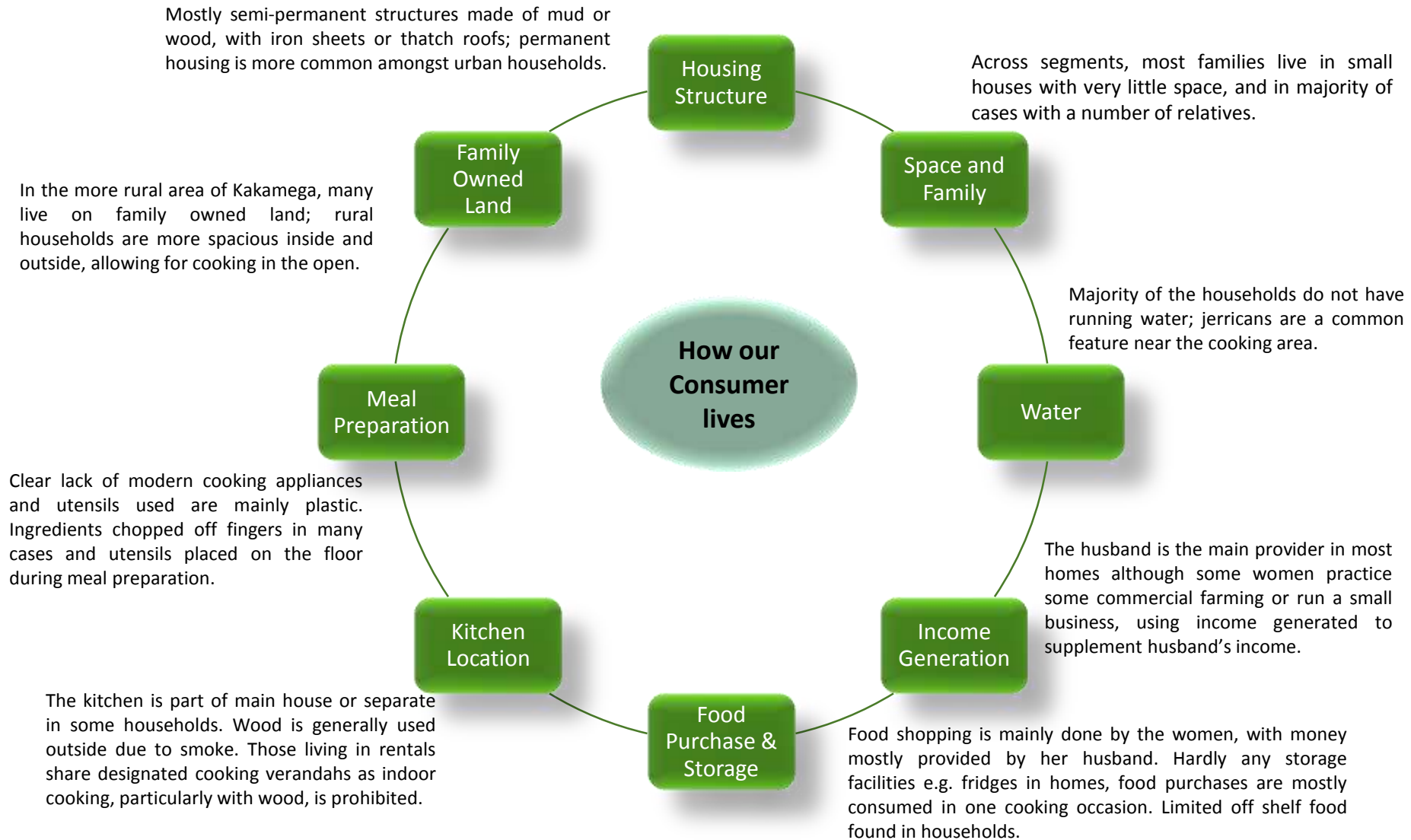
Study Regions

The study was conducted in the Western, Central and Coastal regions of Kenya, within the counties of Kakamega, Nyeri and Kilifi, respectively.



Understanding how the Consumer Lives

The figure below summarizes key characteristics of the consumers within the three study segments



Cooking and Household Energy Needs

Cooking Needs and Preferences

Management of Cooking Tasks

Across the segments, cooking is mainly done by women who are the mothers; daughters assist when they are old enough.

Overall, most of the women spend 2-3 hours per cooking occasion for the main meals; few claim to spend as low as 30 minutes.

Time spent is mainly a function of food type; more time is spent over the weekend when foods that require longer durations such as *Chapatti* and *Githeri* are prepared.

Particular attention is paid to cooking for special occasions with three stone fires and large wood and charcoal stoves often preferred due to the ability to accommodate large pot sizes.

⇒ **Any ICS education or marketing efforts must focus primarily on women; working through women groups would ensure good reach.**

Cooking Positions

Cooking positions vary and are influenced by cookstove or food type; size of kitchen also limits ability to sit due to lack of space forcing some women to stand.

Meals such as *Chapatti* that require the woman's involvement through a relatively long period tend to be performed while sitting.

Warming Food

Once prepared, it is generally perceived as affordable to use a fast cooking stove like kerosene or LPG stoves to warm food that had initially been prepared with charcoal or wood.

Some of the women (who have access to electricity) did express the desire to own a microwave due to the associated convenience and time saving benefits.

⇒ **Improved cookstoves that are easy to light and cook fast would provide an ideal cooking solution in homes that currently use hard to light fuel stoves.**

Cooking Needs and Preferences

Cooking Methods vary across the segments with Nyeri recording higher incidence of frying and stewing whereas boiling is more popular in Kakamega and Kilifi.

The use of multiple cooking methods was recorded for some special foods such as boiling then frying of Githeri or traditional vegetables.

The women consider a number of factors before the decision on cooking method is reached such as food type, cooking duration, availability of fuel, desired taste, health considerations, accompaniments and affordability.

Meal Preparation

Overall, the most popular types of food prepared are; *Ugali*, rice, *Githeri* and vegetables; a slight skew is seen towards *Ugali* in Kakamega and *Githeri* in Nyeri.

The type of meal or food type is the overriding consideration in meal preparation and influences other major factors such as cooking duration and type of fuel.

Time taken to prepare a meal is also a consideration as the women have to consider how much of their time they need to free up to perform other chores or run their small businesses and as expected, this is more of a consideration in the urban segments.

Meal preparation generally does not involve elaborate processes requiring the use of additional appliances. In these households, ingredients such as vegetables are chopped off the fingers rather than a chopping board. Meals are often served directly off the fire.

Frequency of Meals

The majority of households (70%) within the target segments prepare meals three times a day. Frequency is mainly dependent on family activities; families where children and parents do not spend the day at home tend to cook twice a day i.e. breakfast and dinner.

Households with younger children often prepare light meals in between the three standard meal times, such as porridge at 4pm.

Cooking and Household Energy Needs

Current Fuel Types – Usage and Preferences

Fuel Choice Factors: Affordability, availability, cooking speed and ability to cook for long hours are the key drivers of fuel choice.

Majority of women claim to use the fuel they prefer most; affordability and availability consistently emerged as the key main reasons for non use of preferred fuel across segments.

Consumers within the Kilifi segment are relatively more economic driven than those from Nyeri; Nyeri consumers show clear preference for high speed of cooking while Kilifi users are more concerned about the affordability of fuel and its ability to last long.

⇒ **It is important for improved cookstoves to be perceived as affordable and capable of fast cooking.**

High Multiple Fuel Usage

Across target segments, there is high multiple fuel usage. Whereas the rural segments such as Kakamega are more likely to interact with wood and charcoal, urban consumers show higher usage of LPG and kerosene as alternatives to charcoal.

Low lapsed fuel usage shows users generally continue to interact with the fuels they try; consumers generally do not stop using a fuel they consumed in the past.

Affordability and health are main reasons for lapsed use with health involving movement by some mothers into 'safer' fuels after having children suggesting higher concerns surrounding smoke where children are involved.

⇒ **Opportunity exists to stress negative effects of smoke and related ICS health benefits in reference to child health e.g. Ads that feature a coughing child or a child with eye problems would capture target consumers' interest.**

Cooking and Household Energy Needs

Current Fuel Types – Usage and Preferences

Factors driving alternative fuel choice

Affordability is the key overall factor driving use of substitute fuels; this is particularly so within the Kilifi segment which also shows preference for fuels that lasts long.

For wood users in Kakamega, key considerations relate to availability, necessary distance to travel and the current weather conditions.

Speed of cooking and time of day are key factors for the Nyeri segment making them most inclined towards cooking fuels and technologies that save time.

Other factors taken into account in alternative fuel choice include family size, ability to warm the house, cooking multiple dishes, occasion and the type of heat the food type requires.

In Kakamega, the key substitute fuel is charcoal particularly during the wet season when availability of dry wood is limited.

Sawdust, maize cobs and fibers are also used in Kakamega with consumption being dependent on availability or seasonality.

Amongst women in Nyeri & Kilifi segments, there is substantial use of kerosene as their alternative fuel.

Kerosene usage is mainly driven by the need to cook fast particularly at certain times of day e.g. when preparing children for school.

The Nyeri segment shows comparably higher LPG usage despite kerosene being relatively affordable, the women in this segment are less price sensitive and consider LPG the more convenient fuel for fast cooking.

⇒ **High multiple fuel usage particularly between wood and charcoal confirms the need to continue to promote wood and charcoal based ICS in the foreseeable future and indicates an opportunity for multi fuel ICS. High alternative usage of LPG also suggests opportunities to transition to exclusive use of LPG by making it more affordable and accessible, in particular for the Nyeri segment.**

Cooking and Household Energy Needs

Fuel Perceptions

Wood

Positives

Affordability is the main motivation for wood use amongst lower income groups
Fast cooking is also a key driver for wood use given the high heat capability
Suited for special function cooking due to the **flexibility in pot size**
Wood is **relatively easily available** particularly in rural locations
Compared to fuels such as Kerosene and LPG, wood is also **avored for cooking the common local foods** such as *Ugali* and *Githeri* well.
Other Factors: Wood is perceived to make food tasty, suitable for long duration cooking, low in wastage once food is ready, can warm the house.

Negatives

Dirty; wood is said to stain cooking pots, walls and floors
Difficult to use when not dry; when not dry, wood is hard to light and goes off when cooking
High involvement cooking; does not allow the woman to perform other chores as food cooks
Dangerous; wood cooking if not well controlled may lead to fires
High levels of smoke leading to unpleasant smell that affects food, hair, clothes - particularly compared to gas, electricity
Other Factors; Requires a lot of storage space, hard to transport

Charcoal

Positives

Easy availability; most state charcoal is easily available
Affordable compared to Kerosene and LPG Gas; this is aligned to the high charcoal usage across segments
Low involvement cooking; charcoal allows the women to conduct other tasks as food cooks
Can regulate heat; a good proportion prefer to prepare *Chapattis* over charcoal due to ability to regulate heat
Cooks evenly; perception is that charcoal is best suited for meals that require to cook evenly such as rice
Other Factors: Safe compared to LPG, less smoky or smelly compared to wood or kerosene, suitable for a variety of food types and warms the house.

Negatives

Lighting process generally takes some time regardless of method employed and particularly if charcoal wet
Dirty if compared to LPG
High in smoke versus LPG, particularly if from some tree types or not well dried
Other Factors; Not as fast as wood, hard to find (only for some)

Cooking and Household Energy Needs

Fuel Perceptions

Kerosene

Positives

Saves time; ideal to use when cooking needs to be conducted quickly

Convenient; favored for being easy to light and preferred for cooking light meals or food warming

Negatives

High smoke leading to unpleasant smell of food, clothes, hair – and affects food taste

Produces soot that stains cooking pots

Perceived as dangerous; due to incidents of stoves exploding, causing fires

Not suitable for all food types; not preferred for Ugali

Expensive vs. charcoal and especially for long duration cooking hence use as alternative rather than primary fuel

LPG

Positives

Easy to use; Gas lights easily, cooks fast and is easy to regulate depending on food type and easy to put off

Clean; usage of gas does not affect cooking pots, walls or the women's hair or clothes.

Negatives

Expensive; some claim they have been unable to afford refill gas cylinders after use

Safety; gas cylinder are known to explode

Not suitable for certain food types; perceived not to cook certain common foods such as *Ugali* well

No indication of fuel left; gas goes off without warning

Cooking and Household Energy Needs

Current Fuel Types – Usage and Preferences

Source of Wood – Most wood users collect wood from their own farms while a good proportion collect it from forests, bushes, shrubs and thickets. Only a few collect wood from neighbors' farms.

It is therefore not surprising that most users less than 1 hour per week and travel a distance of less than 1 kilometer on foot to collect wood.

Source of Charcoal - In both Kilifi and Nyeri segments, charcoal is most commonly purchased from local outlets or traders and street vendors nearby; only a few buy charcoal from mobile distributors or the open air market.

Availability perception; according to more than half of the women, wood is generally less available than it was 3 years ago while charcoal availability perception is relatively positive with most considering the fuel easily available, and more so within the Nyeri segment.

The frequency of charcoal purchase appears to vary greatly across households and is largely driven by household purchasing power with the more financially capable section of consumers purchasing larger quantities less frequently.

A proportion purchase small amounts of charcoal almost daily, and in many cases, all of the fuel purchased is consumed during one or two cooking sessions.

Majority of the women spend an average of Kes. 150-300 per week on charcoal.

The perception by Nyeri consumers that current charcoal prices are fair and their higher LPG usage indicates their ability to spend more on cooking fuel or products vs. Kilifi users.

⇒ **Opportunities exist to promote higher priced ICS in Nyeri compared to the other target segments as well as possibility of fuel savings messaging being more successful in Kilifi.**

Cooking and Household Energy Needs

Current Fuel Types – Usage and Preferences

FUEL STORAGE

The majority of women store fuel inside the house; for charcoal this is driven by the need to ensure it is secure given that unlike wood, it is acquired at a cost. Indoor storage of both wood and charcoal is also driven by the need to avoid the fuels getting wet from rain which results in their being hard to light and high levels of smoke.

Indoor storage takes a number of forms;

- Around the cooking area in the kitchen, or a veranda
- Charcoal is in many cases stored behind a door or at the corner of a room
- Wood kept above the fire place with the intention of ensuring it dries out

In some households, fuels are kept in stores separate from the main house and these range from permanent (stone) to semi-permanent structures made of iron sheets.

For safety reasons, kerosene is usually kept out of children's reach.

The speed or level of ease with which fuel lights can be a driver or barrier of fuel choice.

LIGHTING FUEL

CHARCOAL: Methods used to light charcoal;

- Nylon or polythene paper, newspapers
- Coconut husks
- Thin wood splinters
- Kerosene on charcoal or at the bottom
- Use of live coals from an already lit stove
- Sawdust

WOOD: to light wood fires, consumers use leaves, thin wood splinters or sawdust; some of the women opt to save time preferring to use kerosene.

Lighting of wood in the case of three stone fire is seen as relatively easier compared to charcoal stoves or ICS due to aeration.

⇒ **The emerging perception that improved cookstoves are difficult to light mainly due to lack of proper aeration, makes it critical to ensure ICS improvements that support the easy to light claim.**

Cooking and Household Energy Needs

Consumer Usage and Attitudes Towards Cookstoves

Cookstoves: Awareness, Ownership and Choice

Awareness of Cookstoves; universal awareness was registered for the 3 stone fire and the charcoal stove (*Jiko Makaa*). The Kerosene wick stove also achieved very high mentions across the segments.

Wood and Charcoal Stoves commonly found in target households: 3 stone fire (wood), Kenya Ceramic Jiko (KCJ), Traditional Metal Stove (charcoal), Kuni Mbili (wood), Jiko Kisasa (wood), Rocket Mud Stove (wood). Many homes also had kerosene and LPG stoves.

Multiple Stove Ownership; Across segments, most women own more than one stove which is not surprising given the multiple fuel use in households.

Choice of Stove; Across segments, this is mainly driven by affordability and how fast it cooks.

Other factors that emerged as key considerations in stove choice include;

- Suitable for cooking of a variety of food types
- Availability of stove
- Cooking stability
- Stove pot size vs. family size

Overall, having an aesthetically pleasing design does not appear to be a key consideration.

Smoke is a slight concern for Kilifi and Kakamega segments while current weather conditions influence stove use in Kakamega due to difficulty in using wet wood in the rainy season.

⇒ **Future efforts to drive ICS adoption should emphasize economic benefits and speed which are easier to relate to - secondary focus on other ICS benefits such as reduced smoke may require more education for impact.**

Cooking and Household Energy Needs

Consumer Usage and Attitudes Towards Cookstoves

Improved Cookstoves (ICS) – Consumer Understanding

When asked to describe an improved cookstove, the women were agreed in opinion that it was *'better than the usual jiko'*.

It emerged that KCJ was not perceived as an improved cookstove with the women referring to other types such as Kuni Mbili and Jiko Kisasa.

**** Reference to ICS in the report therefore relates to other ICS and NOT the Kenya Ceramic Jiko (KCJ). KCJ was not automatically considered an improved cookstove by all as ICS related benefits such as fast cooking, smoke reduction of fuel saving are less obvious particularly if compared with the imported ICS.**

KCJ



OTHER ICS – LOCAL AND IMPORTED



ICS POSITIVE ASSOCIATIONS: listed below are favourable perceptions of ICS mentioned amongst the segments; these were consistent before and after consumers received a description of ICS:

- Time saving as they cook fast
- Produce less smoke
- Fuel saving due to lower than usual fuel consumption
- Appealing in design compared to the conventional wood or charcoal stoves
- Some also were of the opinion that ICS should be durable and have multiple burners.

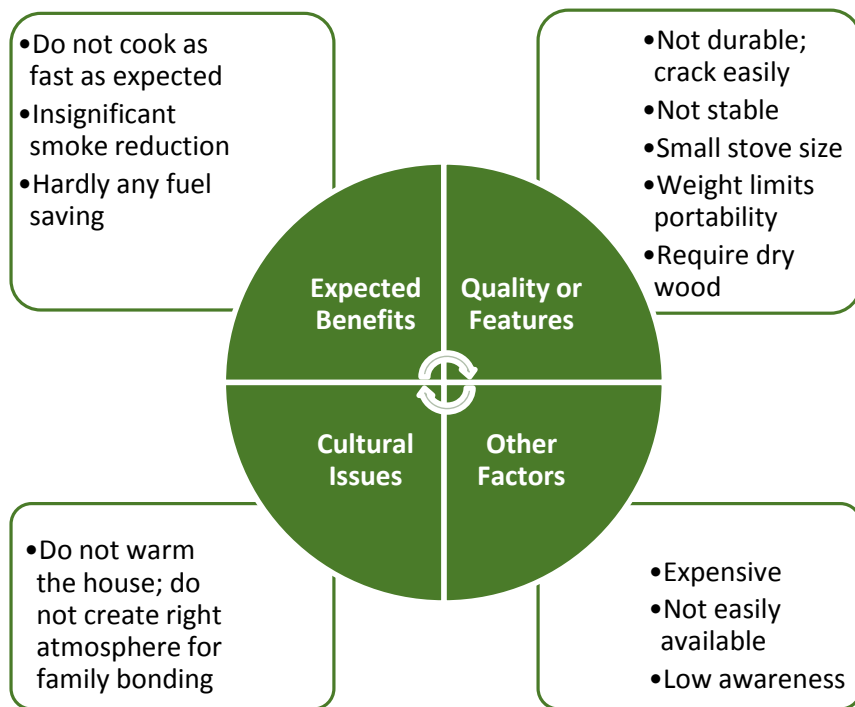
Cooking and Household Energy Needs

Consumer Usage and Attitudes Towards Cookstoves

ICS NEGATIVE ASSOCIATIONS

It became apparent that there are also a number of unfavorable associations of ICS amongst the target segments.

It is important to note that this information is mainly based on local clay stoves, and some from actual consumer experience.



⇒ **It is critical to ensure quality standards and effective after sales service to control negative ICS perception which is likely to limit consumer interest and adoption.**

ICS SUGGESTED IMPROVEMENTS

As expected, consumer suggestions for improvement are very well aligned to negatives highlighted – **but it is critical to note that they would not expect to pay more post improvements.**

ICS are expected to deliver associated benefits:

- Lower smoke levels (chimney to let out smoke)
- Higher fuel saving
- Faster cooking
- Easy to light (well aerated)

Most Key Suggestions:

- Durable; not crack easily
- Stable; for all food types
- Portable; Light in weight
- Ability to regulate heat
- Allows you to perform other chores as food cooks
- Different sizes
- Multiple burners
- Should not go off while cooking

Other General Suggestions:

- **Affordable – the main hurdle**
- Easily available
- Warm house
- Black in color; to avoid unappealing look after use

Consumer Usage and Attitudes Towards Cookstoves

ICS - Source of Awareness

Jiko Kisasa and Kuni Mbili are the most well known ICS brands. Jiko Kisasa posts very high awareness in Kakamega which is not surprising considering this region is a GIZ cluster of focus. ICS awareness levels are generally much lower in Kilifi.

- ⇒ **With the exception of Jiko Kisasa in Kakamega, there is need to intensify awareness creation efforts of the range of ICS available if ICS products are to achieve reasonable levels of adoption in the foreseeable future.**

Almost two thirds of the women have been exposed to some form of ICS communication.

Main source of communication across segments was word of mouth followed by women groups, particularly in Nyeri. Other key sources are sales agents for Kakamega as well as open air market and local outlets for Nyeri.

- ⇒ **ICS perception and adoption will continue to be significantly influenced by word of mouth; negative consumer feedback must be minimized to limit spread of negative ICS perception**

As expected, the highest levels of ICS trial and usage were registered for Jiko Kisasa and Kuni Mbili. While Jiko Kisasa registered highest levels in Kakamega, Kuni Mbili trial and usage is higher in Nyeri. For Kilifi, very low trial and no current ICS usage was registered.

Cultural Traditions and Implications

Cooking the way your mother, your community always has

- Social acceptance appears to be a driving factor influencing many aspects of the women's lives including their cooking practices; the desire to conform appears higher in the Kakamega segment.

⇒ **ICS adoption may be hindered by the need for social acceptance, there is opportunity to work with highly regarded opinion leaders such as teachers in rural areas to accelerate ICS adoption.**

Speed of Cooking

Limited use of cooking styles such as simmering or cooking on low heat with most women being keen on fast cooking.

⇒ **The perception that ICS do not generally cook much faster compared to conventional stoves may limit adoption amongst the target segments especially in Nyeri.**

Pot Size

The majority of households routinely require large pot sizes for cooking while most ICS are relatively small in size.

⇒ **Inability to prepare meals in adequate quantities for the family is likely to continue to negatively impact consumer acceptance for small sized ICS.**

Warming the house

For some households, cooking with wood and charcoal is also positively perceived due to the ability of warming the house and creating an atmosphere for family bonding.

⇒ **Overall, benefits of ICS need to be perceived as worth the trade off they would need to make if they moved from conventional stoves. This is likely to be more of an issue in cold regions.**

Ability to cook for long duration of time

A number of common food types such as Githeri require long cooking periods and as such, the women prefer using fuels or stoves that allow them to make good use of their time as they can perform other chores while the food cooks.

⇒ **Adoption is likely to be higher for ICS that do not require the users to add cooking fuel all through the cooking process.**

Perception that certain food types are best prepared on the more conventional stoves

A good number believe that ICS stoves are not appropriate for preparation of some common foods due to the kind of heat they are perceived to generate.

⇒ **ICS communication should stress stove ability to generate the required level of heat to cook popular foods such as Ugali well.**

Reaching the Consumer

Purchase and awareness channels were examined for products similar to ICS, namely solar lanterns, solar panels, water filters, water tanks and insecticide treated nets (ITN).

The influence of word of mouth is significant across all segments and items.

Efforts by NGOs and CBOs appear to be cluster based hence huge variations across regions.

In Kilifi, local outlets are a key source of awareness across the items while women groups appear more of an influence in Nyeri. Despite radio and TV being relatively popular, limited information on these products has been shared through these media.

Saccos and local leaders such as chiefs or politicians received very low mentions as sources of awareness.

Significant variation is evident with respect to where target customers acquire products, although overall, local outlets are the most popular point of acquisition across segments. Sales agents and NGOs/ CBOs register record higher figures in Kakamega for solar lanterns, solar panels and water filters.

Influencers

The decision to purchase a particular household item is most likely to be influenced by friends, women groups and family; other key influencers are NGOs, CBOs, and the media e.g. radio and local traders or outlets.

⇒ **The creation of awareness and distribution of new technologies and products should aim to involve the familiar channels to facilitate easier adoption.**

For women who already own some type of ICS, women groups in Nyeri emerged as the highest acquisition source across target segments followed by sales agents in Kakamega. About a third of Nyeri consumers (32%) acquired their ICS from local traders or open air markets.

It was not surprising to note higher incidence of stoves constructed at the home in the Kakamega segment considering the reasonable adoption of Jiko Kisasa in the area.

Limited info was available for Kilifi, which shows the lowest ICS penetration across segments.

⇒ **Distribution models must be assessed for suitability based on segment market structure so that only those that can sustainably deliver cost effective ICS penetration are promoted.**

Reaching the Consumer

A number of distribution models are currently in use within the ICS sector in Kenya; some of the less conventional ones have developed out of the need to devise ways to achieve deeper penetration of ICS while controlling distribution cost

- Sales through stockists, retail outlets and supermarkets.
- Government departments; energy and agriculture officers at county, sub county or ward levels
- Distributing through entrepreneurs who have undergone stove production training.
- Working with sales agents who in some cases are trained artisans who install stoves.
- Partnerships with CBOs, NGOs, donor agencies
- Selling through groups of women or youth
- Use of 'Boda Boda' to deliver stoves to customers

Some additional distribution models are also being tested for ICS:

- Linking large organized groups such as farmers to suppliers/ distributors and financing institutions such as Saccos thereby providing a product and financing solution for target consumers.
- Capturing the interest of prospective buyers; some stove builders have developed schemes such as requiring customers to purchase an initial ICS, after which they are trained in stove making for their own income generation.

Sector players also suggested creating a database to be managed by the government or another central entity to keep track of certified artisans and suppliers and provide critical information on quality as well as availability of products for potential distributors.

⇒ **Building partnerships is critical; sector players should aim to combine efforts to ensure distribution efforts are matched with access to financing and consumer education for sustainable ICS uptake growth.**

Marketing Channels and Messaging

Based on other products, TV, radio and word of mouth have been the most instrumental in communication of household items in general (although as mentioned earlier, these media have not been commonly used in communication of the selected study items such as solar lanterns, ITN or water filters). Women groups have been relatively effective in Nyeri, CBO/ NGO efforts only seem to register some reasonable levels in Kakamega.

⇒ **Use of the popular communication avenues that have proven effective for other products is likely to boost awareness and promote understanding of ICS benefits resulting in increased ICS uptake.**

Looking at the radio listenership and TV viewership figures across the target segments, local radio seems to be the more effective medium overall and preferably between 5am and 9am in the morning.

The highest mention of effective communication relating to ICS was registered in Nyeri at 41% while the lowest mentions were recorded in Kilifi (7%).

Future ICS Communication

Most Important Message for ICS; considering stove choice factors, it is not surprising that fuel saving and fast cooking aspects of ICS are considered the most key messages for ICS communication.

The desire to be assured of stove durability is clear and overall, there is a perception amongst the women that they would need to see stoves, use them and prove they delivered on the stated benefits before they could commit to preferring them over standard stoves. This may be a function of negative experience with other products, including ICS.

⇒ **The need for ICS communication to emphasize fuel saving and fast cooking cannot be overstated.**

Marketing Channels and Messaging

It is encouraging to note the increasing level of creativity and flexibility being exercised by sector players as a means to drive ICS adoption. Some initiatives mentioned were:

- Showcasing homes where ICS is successfully in use
- Ensuring outlets where customers ‘touch and feel’ products and observe effective product demonstrations
- Initiatives that engage and entertain target consumers; road shows as has been seen with products such as solar as well as radio talk shows such as those run by the ministry of agriculture which involve short skits on benefits are considered impactful.
- Taking the product to the people; in Kakamega, the good levels of uptake particularly for Jiko Kisasa are a function of door to door selling by artisan sales agents.
- Use of SMS to share information; this is commonly used by agricultural officers and has proved effective due to the potential to reach many cost effectively

Some of the suggestions made for future ICS communication include: launch of a national campaign, use of more pictorial rather than text based materials, use of women as ambassadors and emphasizing benefits that the target identifies with most easily; e.g. highlighting need to conserve fuel for increased rainfall to farmers and framing ICS as a means to achieve this goal.

Some success stories with reference to other marketing campaigns were:

- **Quail farming;** effective communication via radio, that highlighted benefits in way of potential profits while advising farmers where inputs (i.e. chicks) could be sourced.
- **School hand washing campaign;** the campaign focused on the impressionable target of children, and they continue to influence mothers and the rest of family to change behavior even today.
- **National Polio campaign;** the campaign was wide in reach, explained the need and how one could get free vaccine and was supported by door to door vaccination efforts in particular areas.

⇒ **The importance of achieving wide reach, effective sharing of relevant benefits and ensuring product availability is critical to achieving successful marketing and in turn, adoption of ICS.**

Marketing Channels and Messaging

Three specific communication concepts were tested with the segments; all concepts were considered easy to understand, relevant and relatively believable with women consistently identifying the intended benefits.

⇒ **In general, women appreciated messages that seemed honest and focused on them as women and mothers.**

FOCUS	COMMUNICATION CONCEPT I Fuel Savings – through efficient heat transfer			COMMUNICATION CONCEPT II Aesthetically pleasing, enrich the cooking experience			COMMUNICATION CONCEPT III Smoke reduction for a cleaner, healthier kitchen		
CONSUMER REACTIONS	Comprehension: message was considered easy to understand. Message takeout: The stove saves fuel and time due to lowering fuel consumption and cooks fast hence saving time. Believability; message was perceived as credible. Uniqueness; emphasis on fuel and time saving. Persuasive power; could be convinced to purchase due to savings potential. Relevance; targets them i.e. women, mothers			Comprehension: the women found the message clear or easy to understand. Message takeout; stoves are good for cooking. Believability; credible. Persuasive power; Could cause them to buy. Relevance; Targets them i.e. women, mothers but how a stove looks is not a key consideration.			Is easy to understand Believable as does not claim stoves produce no smoke at all Message takeout; healthy and safe i.e. good for eyes, chest. More appreciated for wood and interpreted to mean they could cook inside (even with wood). Benefit of cleaner kitchens. Uniqueness; reduction of smoke Persuasive power; would consider buying such a stove. Relevance; targets them i.e. women, mothers		
Communication Message III was the most preferred mainly because it was considered honest with respect to the smoke reduction claim while conveying relevant benefits of health, a cleaner kitchen and the possibility to cook inside when using wood.									

Consumer Financing

Main Payment Modes for Related Household Items

Looking at the payment modes that have been employed in the purchase of related household items, cash payments and credit were the most common.

Other financing modes that received relatively lower mentions included groups, NGOs and MFIs.

Overall, more of the items had been purchased through installment payments in Kakamega segment compared to other segments given their lower income level while higher proportion of items were paid for in cash within the Nyeri segment.

In the case of ITN or water filters, these have mainly been acquired at no cost in Kakamega having been distributed by NGOs/CBOs rather than profit making ventures.

Personal savings, funds from the husband and women groups are the main financing sources for household items purchased across segments followed by family or friends; formal credit financing through Saccos or banks is very low.

With the exception of group financing, most of these funds are not given as a loan but as a form of assistance or support.

Loans obtained by the women in the past have mainly funded income generation ventures and school fees, but some mentioned taking loans for household items such as TV, biogas, LPG stoves and furniture. The Kakamega segment appears most open to taking loans for household items. In Nyeri, many women are of the opinion that loans should be for income generation activities only; there is some perception in this region that obtaining a loan for household items particularly if one is married is an indication of financial problems.

Financing Avenues considered most effective; Preference is for low risk options such as groups and personal savings to finance the purchase of household items with banks and MFI financing being associated with very high interest and the likelihood of losing committed collateral.

⇒ **Increased focus should be placed on groups considering their growing influence, particularly on women, and their ability to self finance purchase of household items.**

Consumer Financing

NOTE: Price Segmentation of Kenyan ICS Market

Unlike other sectors with a cross section of prices, the Kenyan ICS market is largely divided into two segments:

High Price segment; characterized by high quality mostly imported stoves. These are made with more durable materials to withstand high temperatures. Some of the stoves in this segment are; Envirofit, Ecozoom and BURN.

PRICES RANGE FROM Kes. 2,500 to 6,000.

Low Price segment; stoves in this segment are locally made by a variety of producers ranging from relatively established stove builders to individual artisans. Brands under this group are Jiko Kisasa, Kuni Mbili and Rocket mud stoves. **PRICES RANGE FROM Kes. 350 - 1,000.**

When asked about their willingness to pay for an ICS, Kakamega and Kilifi consumers were willing to pay relatively lower prices compared to those from Nyeri, with the majority not willing to pay more than 750 Kes. 64% of Nyeri consumers indicated there were willing to pay more than 750 Kes.

Nearly half of both the Kilifi and Nyeri segments indicated they would not consider financing for ICS, while Kakamega segment consumers showed more interest.

Women in Nyeri are generally more comfortable with longer repayment periods while at least half of their Kilifi and Kakamega counterparts would prefer to pay back a loan within 3 months.

⇒ **Adoption of more expensive imported ICS stoves will be difficult to achieve even with financing suggesting the need to focus on providing cheaper ICS versions particularly for Kakamega and Kilifi.**

For those women who have purchased an ICS before, some claimed to have received financing from Saccos, distributors, suppliers, retailers and stove artisans.

Banks and MFIs such as Equity, Kenya Women and Faulu were also mentioned although they seem to have had limited impact within this sector so far.

⇒ **There appears to be an opportunity to educate the target ICS customers on financial awareness with the particular intention of addressing the fear of borrowing.**

Conclusions and Recommendations

The importance of women

- Women are central to the adoption of ICS given that they are mainly responsible for cooking and are the main decision makers with respect to household items.
- They take pride in providing meals for the families and ICS promotional efforts should highlight how cleaner stoves can also be a source of pride by providing healthier homes for their families.
- These women are also practical and are looking for stoves that are easy to light, cook fast, and require minimal tending so they can manage chores and family, and in some cases, work outside the home.
- Multiple fuel and stove usage is common across all of the segments, with the fuel used mainly driven by affordability and availability.
- Stove choice is also driven by affordability, as well as cooking speed. ICS promotional efforts should emphasize these features, with reduced smoke as a secondary focus that will require more education for impact.
- The ability of stoves to provide even and easily regulated heat also emerged as an important feature critical to cooking many common foods.

⇒ **Targeting women and addressing their needs and preferences is critical to achieving penetration of ICS.**

Efforts should be tailored by segment

- While affordability and accessibility were consistently the main drivers of fuel choice across the segments, important variations among the segments emerged.
- Nyeri seems to have the most experience with LPG and place the most emphasis on fast cooking and is the least sensitive to price so opportunities exist to promote more exclusive use of LPG within this segment by making it more affordable and accessible.
- The Kilifi segment was the most sensitive to the price of fuel and placed the most emphasis on a stove delivering fuel cost saving benefits so marketing to this segment should be tailored accordingly. This segment also showed significant use of kerosene as an alternative fuel, with LPG seen as desirable, but expensive. This suggests the Kilifi segment might be a viable secondary focus for LPG as efforts to make it more affordable come to fruition.
- Since collected wood is the primary fuel for women in Kakamega, fuel savings is valued most by them. This segment also showed high use of charcoal in addition to wood, suggesting opportunities for multi-fuel ICS. Social acceptance within the community, and “cooking the way their mothers always have” is an important consideration for this segment and represents a possible hindrance to ICS acceptance. Opportunities to work with highly regarded local opinion leaders to address this issue should be explored.

⇒ **Tailoring efforts by segment will increase efficiency and effectiveness of ICS promotion activities.**

Conclusions and Recommendations

ICS need to deliver quality that meets consumer needs

- Among the segments studied, there is reasonable awareness of ICS, with two thirds of the women having been exposed to some form of ICS communication. Overall, women understand ICS to provide fuel and time savings, produce less smoke, and be more appealing in design compared to conventional stoves. Some were also of the opinion that ICS should be durable and have multiple burners.
- However, for many with past experience using ICS, negative value perceptions exist due to non delivery of the expected ICS benefits of fuel saving, fast cooking and smoke reduction and this is likely to impact consumer acceptance; this unfavourable perception mainly relates to local mud stoves.
- In addition, there are numerous suggested improvements for ICS revolving around aspects such as stability, different pot sizes, easy portability, ability to regulate heat and warm the house.
- Information from sector players shows that the sector suffers lack of standardization and due to the low margin on stoves, many compromise the stove production process or quality of materials. This is clearly an issue that needs to be addressed in order to restore confidence for consumers and ensure delivery of desired benefits. Also key to emphasize is effective after sales service to boost customer satisfaction.

⇒ **It is critical that the quality of particularly local stoves be improved and standardized for restoration of consumer confidence in ICS.**

Leverage groups and other existing channels

- Women groups are growing in influence countrywide and possess a key advantage by virtue of many being self financing, which helps address the ICS affordability hurdle. Some women have already accessed other products, as well as financing, through these groups and some appear to have already played a key role in ICS awareness creation, particularly in Nyeri.
 - The power of word of mouth emerged as a key influencer throughout the study and could be further leveraged using groups, ensuring even wider reach of education on ICS and benefits.
 - Local retail outlets were the most popular purchase channel for household products overall, suggesting a clear opportunity to leverage a channel regularly being accessed by the target segments. Door to door sales also appear to be an effective means of selling household products and ICS, mainly for the rural Kakamega segment.
 - Partnerships with government officers like agricultural extension workers and community health agents also offer opportunities to leverage their existing visits and outreach efforts to spread awareness of ICS and distribute products.
 - Sector players also suggested creating a database to be managed by the government or another central entity to keep track of certified artisans and suppliers and provide critical information on quality as well as availability of products for potential distributors.
- ⇒ **Channels already reaching the target segments should be leveraged whenever possible, with groups, local retailers and government officers offering clear opportunities.**

Conclusions and Recommendations

Activate multiple channels for awareness raising and marketing

- For awareness raising and marketing, emphasis should be placed on approaches that ensure wide reach and clearly outline the most relevant benefits to the target consumers. Efforts should also be supported by product availability and should clearly indicate where the consumer can find the product.
 - While radio, TV and other mass media do not appear to have been used to promote the specific household items examined in the study, they were cited as an effective means of spreading information about other products and could be tested for ICS. Looking at the radio listenership and TV viewership figures across the target segments, overall, local vernacular radio is the more effective medium to use.
 - The most important messages across segments revolve around fuel saving, fast cooking and durability. Through specific message testing, however, it emerged that health benefits and the ability to cook inside were also factors that could influence stove purchase. In general, women appreciated messages that seemed honest and focused on them as women and mothers.
 - Women also emphasized that they would need to see and trial stoves to be assured they really do deliver the stated benefits, indicating the need to complement any mass media efforts with local level demonstrations and outreach. This could include “showcase homes” where ICS are already in use, as well as road shows that provide entertainment and education on ICS, as well as demonstration opportunities. The use of the aforementioned local channels already reaching the consumer should also be leveraged for awareness raising and marketing.
- ⇒ **Awareness raising and marketing efforts should utilize multiple channels, clearly outline benefits relevant to target consumers, and offer opportunities for women to see and test ICS.**

Women need to be convinced ICS are good value for money

- The target segment consumers are struggling to make ends meet as evidenced by the modest housing conditions and lack of kitchen appliances meaning that affordability remains a major hurdle to ICS uptake. Across segments, funds to purchase household items are mostly sourced from personal savings and spouses, with some utilizing women groups and chamas as well.
 - Most of them demonstrate a reluctance to borrow which is linked to a fear of loans due to limited financial awareness, and for some, in particular in the Nyeri segment, borrowing to purchase household items is perceived as an indication of financial problems. Few have accessed formal credit from banks or MFIs.
 - In addition, cited willingness to pay for ICS fell well below the prices of imported stoves, with close to half of the Nyeri and Kilifi segments indicating they would not be interested in financing for a stove. The Kakamega segment showed higher interest in financing for ICS and seems to have some experience using credit to purchase other products, but overall the preference among the segments seems to be for low risk options like personal and group savings.
 - This further supports the need to leverage groups for ICS promotion and financing, and also suggests a need to educate consumers on financing, in particular to address the fear of borrowing. Perhaps most critical is the need to convince women that ICS are good value for money and will indeed deliver an improved cooking experience.
- ⇒ **Considering their limited exposure and apparent reluctance towards loans as well as their low disposable incomes, reasonable ICS adoption can only be achieved if the women perceive the stoves as good value for money.**

Segment Profiles



The Kakamega Segment

How they live	Household Items	Cooking and Household Energy Needs	Cookstoves	Cultural Traditions and implications	Reaching the Consumer	Marketing Messaging	Consumer Financing
<p>Semi permanent structures mainly mud and wood with iron sheet or thatch roofing.</p> <p>Some of the homes are on family owned land.</p> <p>Households are characterized by lack of running water and limited kitchen appliances.</p> <p>Diet mainly includes common staple foods due to low disposable income.</p>	<p>Are the most likely segment to involve husbands in decision to buy H/H items.</p> <p>For the study selected H/H items, CBOs/ NGOs registered as highest source of awareness and products for ITN, water filters and solar lanterns.</p> <p>Purchases of H/H items are made more in credit than cash payments.</p>	<p>Boiling is most common cooking method</p> <p>Ugali is most common within this segment.</p> <p>Special occasion food is fried free range chicken.</p> <p>Charcoal is the main fuel alternative and is most used during wet season when wood is hard to find.</p> <p>High awareness of other fuels e.g. LPG.</p> <p>Focus on fuel saving.</p>	<p>Reasonable ICS awareness and highest for Jiko Kisasa followed by Kuni Mbili.</p> <p>Show slight concern for smoke.</p> <p>ICS awareness mainly through word of mouth and sales agents.</p> <p>Highest ICS trial and usage is for Jiko Kisasa.</p>	<p>ICS adoption may be inhibited by the need to cook the way their society always has or by the lack of large ICS pot sizes.</p>	<p>ITN is the one item amongst selected H/H items for the study that had been acquired the most.</p> <p>Sales agents and CBOs/ NGOs are the most popular source of selected similar H/H items.</p> <p>ICS acquired mostly from sales agents in this segment.</p>	<p>Higher radio vs. TV and mostly between 6-8pm; main TV channel is Citizen followed by KTN while popular radio stations are Citizen, Radio Jambo and Mulembe.</p> <p>Highest source of awareness for H/H items is radio, word of mouth and TV; radio seen as the most effective.</p> <p>Effective previous communication for ITN and water filters.</p>	<p>Higher interaction with mobile money i.e. Mshwari.</p> <p>Channels accessed for funds to buy H/H items are savings, spouse and women groups.</p> <p>Segment that is most open to loans for H/H purchase.</p> <p>Willing to pay lowest amount for an ICS and consider loan from lowest level and desire to pay in less than 3 months.</p>

The Kilifi Segment

How they live	Household Items	Cooking and Household Energy Needs	Cookstoves	Cultural Traditions and implications	Reaching the Consumer	Marketing Messaging	Consumer Financing
<p>Some semi permanent and permanent housing comprising of stone walls, iron sheet roofing.</p> <p>Most are rentals with a common cooking area for wood.</p> <p>Many involved in small scale businesses such as kiosks, selling fruits or vegetables.</p> <p>Households are characterized by lack of running water and limited kitchen appliances.</p>	<p>Less likely to involve husbands in H/H items purchase decision especially compared to Kakmega segment.</p> <p>Local outlets are the main source of awareness as well as point of purchase for H/H items.</p> <p>Of the selected H/H items, most effective communication was for ITN.</p> <p>Segment where ICS communication was considered the least effective compared to other segments.</p>	<p>Most common cooking method is boiling, unlike Nyeri segment.</p> <p>Likely to prepare Pilau for special occasions.</p> <p>Kerosene is the main alternative fuel; LPG seen as too costly.</p> <p>Consider charcoal prices expensive and higher than were 3 years ago compared to Nyeri; charcoal considered less available vs. 3 years ago.</p> <p>Focus on fuel cost saving.</p>	<p>Lowest awareness and trial of ICS with hardly any current usage.</p> <p>Pay some consideration to smoke as a stove choice factor.</p> <p>Most ICS awareness has been generated by word of mouth.</p>	<p>ICS adoption may be inhibited by the need to cook the way their society always has or by the lack of large ICS pot sizes.</p>	<p>Water filters followed by water tanks are the H/H items said to have been acquired the most in Kilifi.</p> <p>Local outlets are particularly popular as a source of H/H items in this segment.</p>	<p>Relatively high levels of TV viewership and lower radio listenership; TV watched the most between 6pm – 8pm in the evening.</p> <p>Most popular TV channels are KTN followed by Citizen while Citizen, Pwani and Baraka are the favoured radio stations.</p> <p>Greatest source of awareness for H/H items is TV, word of mouth and radio with TV being considered most effective.</p>	<p>Channels accessed for funds to buy H/H items are savings, spouse and women groups.</p> <p>Willing to pay less and take loan for lower amount compared to Nyeri consumers.</p> <p>If took loan, most would like to repay in less than 3 months.</p>

The Nyeri Segment

How they live	Household Items	Cooking and Household Energy Needs	Cookstoves	Cultural Traditions and implications	Reaching the Consumer	Marketing Messaging	Consumer Financing
<p>Some semi permanent and permanent housing comprising of stone walls, iron sheet roofing.</p> <p>Most are rentals with a common cooking area for charcoal.</p> <p>More compared to Kakamega segment are involved in small scale businesses such as kiosks, selling fruits or vegetables.</p> <p>Households are characterized by lack of running water and limited kitchen appliances.</p>	<p>Less likely segment to involve husbands in decision to buy H/H items compared to Kakamega segment.</p> <p>For the study selected H/H items, groups registered as highest source of awareness with ITN and water tanks having been mostly been acquired from local outlets.</p> <p>They show the highest propensity to pay cash for H/H items.</p>	<p>Unlike the other segments, they prefer stewing and frying.</p> <p>Githeri is most common within this segment.</p> <p>Mukimo is likely to be prepared for their special occasions.</p> <p>Their desire for fast cooking and convenience drives high usage of LPG as an alternative fuel.</p> <p>Perceive charcoal prices as fairer and lower than were 3 years ago compared to Kilifi;</p>	<p>High ICS awareness for Jiko Kisasa followed by Kuni Mbili mainly from word of mouth and women groups.</p> <p>Higher trial and usage of Kuni Mbili ICS.</p> <p>Focus on speed of cooking/ time saving.</p>	<p>Most likely to be reluctant to adopt ICS if perceived as slower than conventional stoves or as not well suited for long duration cooking as required for Githeri.</p>	<p>Most acquired H/H items were water tanks</p> <p>Local outlets and groups the popular sources of products.</p> <p>Highest ICS acquisition seen from groups - and markets.</p> <p>Greatest source of awareness for H/H items is TV, word of mouth, radio and groups with these same sources also being considered the most effective.</p>	<p>High levels of TV viewership and radio listenership.</p> <p>TV watched the most between 6pm – 8pm in the evening.</p> <p>Citizen is the most popular TV channel while favoured radio stations are Inooro, Kameme and Coro.</p> <p>Most effective communication was for ITN.</p> <p>ICS communication seen as most effective in this segment.</p>	<p>Most willingness to pay more for ICS and take higher loan amounts for the same.</p> <p>They are also comfortable with longer repayment periods vs. the other segments.</p> <p>Some perception exists amongst women in this segment that borrowing for H/H items is not wise and is indicative of financial difficulties especially if married women.</p>