

# Transforming the Cookstoves Market through Standards & Labeling in Kenya

August 2017

## Executive Summary

The private sector, the government of Kenya, and local and international NGOs, including the Clean Cooking Association of Kenya and the Global Alliance for Clean Cookstoves, seek to transition Kenyan households to cleaner and more efficient stoves and fuels to improve health and reduce environmental impacts. This transition, in part can be enabled through the implementation of standards and labeling (S&L) policies and programs. Well-designed standard programs transform markets by removing poor-performing or low-quality products, while labeling programs encourage and empower consumers and other buyers to make informed decisions about the products they purchase. S&L policies and programs exist in a variety of types, often enable complementary market transformation projects, and can be adapted to most cultures, countries, and markets. The primary principles of S&L include:

- **Testing products** to better understand their performance and to improve confidence among consumers and investors;
- **Establishing performance criteria** for efficiency, emissions, and safety to set a benchmark for manufacturers to meet, based on comprehensive market data; and
- **Conveying information** to producers, consumers, distributors, retailers, and program implementers through labels and public awareness campaigns, to increase awareness of the benefits of clean and efficient cookstoves.

The specific components of an S&L policy or program, such as type (e.g., voluntary vs mandatory), scope (i.e., what products are included), metrics (i.e., what the product is being tested and assessed on), label type, and compliance scheme (aka monitoring, verification, and enforcement) that will be most beneficial to a market are based on that market's technology landscape, policy environment, actors, and consumers.

The status of the cookstoves market in Kenya indicates that S&L policies and programs can support the goal of substantially increasing consumer uptake of cleaner and more efficient cookstoves (also referred to as improved cookstoves, or ICS).

The following key findings were gathered from conversations with cookstove stakeholders, and influence the approach to devising and implementing a cookstove S&L strategy in Kenya:

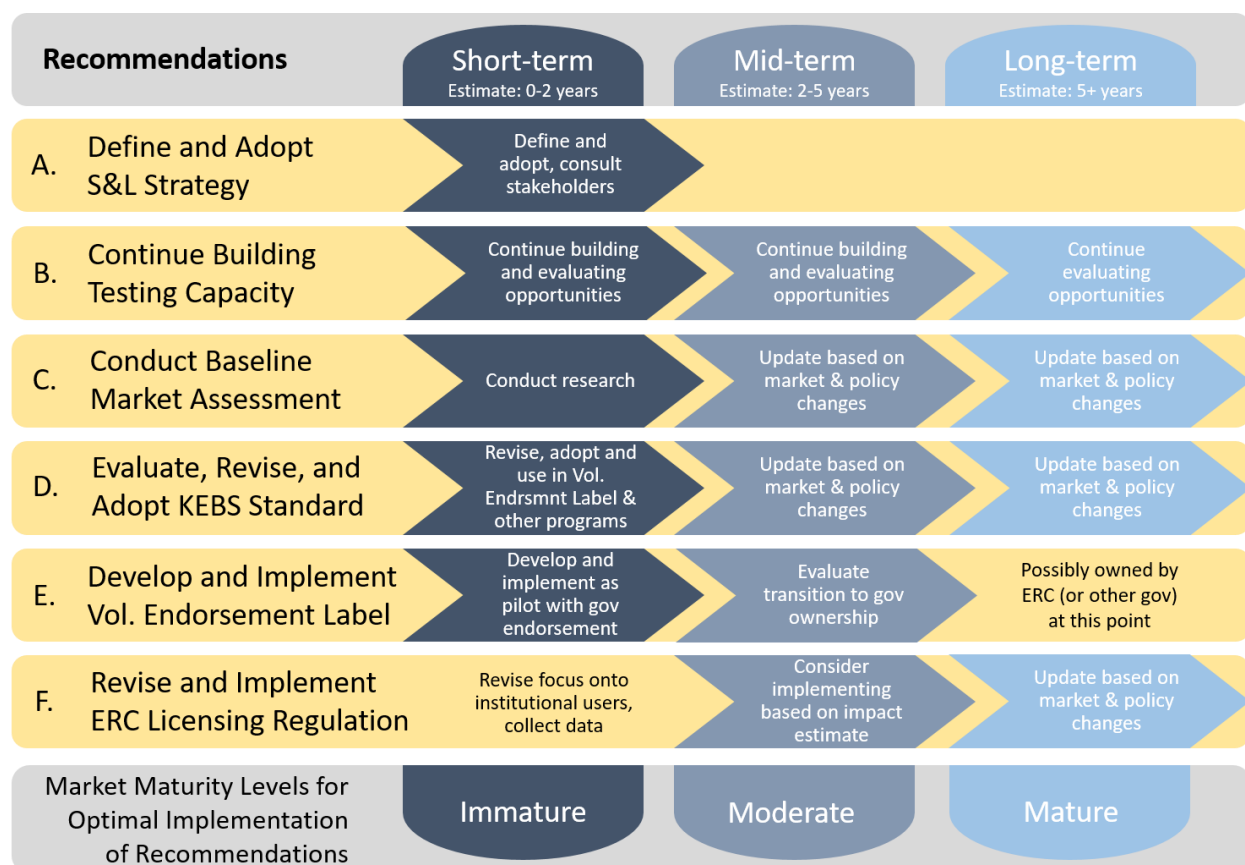
- The national ICS market is growing but not yet mature.
- Improving accuracy and timeliness of testing would benefit all stakeholders.
- Government is engaged in the cookstoves policymaking process and political will exists at multiple levels.
- Multiple, overlapping S&L policies and programs are in existence or development, and need to be coordinated.

- More market and product performance information is needed.
- A legislative and legal framework exists to host S&L programs, but can be streamlined.
- Substandard and counterfeit consumer products are rampant, government resources are limited, and confidence in market compliance is subsequently low.
- Industry and NGO cooperation is high, appetite for S&L is growing, but consumer advocacy is lacking.
- The Clean Cooking Association of Kenya (CCAK) is a well-regarded but young organization.

Based on these features present in Kenya's cookstoves market, and best practices from other appliance S&L programs in markets that share some of them, we recommend designing cookstove S&L programs in Kenya to be: **Voluntary, Technology-neutral**, and use **Endorsement labels**.

A strategy was developed integrating these characteristics and the key findings, as well as specific recommendations for its implementation over the short-, mid-, and long-term. These timeframes are estimated in the graphic below and loosely correspond to the maturity<sup>1</sup> of the Kenyan cookstoves market during which each proposed step should be taken for optimal impact.

Figure 1: Summary of recommendations and estimated timeline



<sup>1</sup> See Annex 4: Market Maturity Levels for Optimal Implementation for an explanation of market maturity levels

## Introduction

Eighty-five percent of people in Kenya cook with solid (biomass) fuels, exposing them to harmful pollutants emitted from burning wood or charcoal. Household air pollution (HAP) is one of the largest risk factors for mortality in Kenya, with 15,000 deaths attributed to HAP annually, and affecting the health of 36 million Kenyans.<sup>2</sup> In addition to the health impacts, cooking with solid fuels releases gases and other emissions that contribute to climate change, including carbon dioxide, methane, carbon monoxide, and short-lived climate pollutants like black carbon.

The government of Kenya recognizes the social and environmental harm caused by open fires and traditional stoves, and is seeking to transition consumers from traditional biomass or charcoal stoves to cleaner, more efficient models, and where possible, cleaner cookstove technologies and fuels, like LPG and ethanol.

To facilitate and accelerate this transition, and enhance the benefits to the Kenyan people and environment, the government of Kenya, in tandem with the local clean cooking sector, can apply best practices from traditional standards and labeling (S&L) programs. These include:

- **Testing products** to better understand their performance and to improve confidence among consumers and investors;
- **Establishing performance criteria** for efficiency, emissions, and safety to set a benchmark for manufacturers to meet, based on comprehensive market data; and
- **Conveying information** to producers, consumers, distributors, and retailers, and to program implementers through labels and public awareness campaigns, to increase awareness of the benefits of clean and efficient cookstoves.

In response to Kenya's interest in cookstove S&L, CLASP, on behalf of the Global Alliance for Clean Cookstoves, was hired to support the design and implementation of a national cookstove S&L strategy. This process included assessing the feasibility of an S&L program, and developing and documenting high-level recommendations, steps, and intervention activities to enact an overall S&L strategy. The strategy was developed based on in-person conversations with more than twenty cookstoves stakeholders during a scoping mission in November 2016. Interviewed stakeholders are listed in Annex 1 (p.33), and include government, industry, NGOs, professional organizations, testing labs, and others.

CLASP met with stakeholders to learn about current cookstoves policies, projects and barriers; past projects and lessons learned; market maturity; and most importantly, the stakeholders' perspectives. Discussions also aimed to uncover the motivations of different stakeholders, how government processes and industry supply chains actually work on the ground, success stories, perceptions of S&L and its potential impact to consumers and industry, and ideal avenues to introduce the concepts of S&L to the cookstove market.

Insights from these conversations were combined with other Kenya cookstoves materials developed for the Global Alliance for Clean Cookstoves,<sup>3</sup> as well as stakeholder feedback on a draft strategy to validate and inform this strategy document.

---

<sup>2</sup> Global Alliance for Clean Cookstoves, *Kenya Country Profile*

<sup>3</sup> Such as the Global Alliance for Clean Cookstoves, *Kenya Country Profile*

## Key Market and Policy Insights

This section outlines key findings from CLASP's interviews of stakeholders. Understanding the technical and sociopolitical characteristics of the current cookstoves sector in Kenya is a critical first step to determining whether an S&L program can be effective. An assessment of market prerequisites, such as the five A's of market maturity, will also identify which S&L characteristics (or approaches to S&L) and intervention options are *most* suitable for accelerating market transformation in Kenya.

### The national ICS market is growing but not yet mature

**Availability** of high-quality, improved biomass cookstoves is mixed across Kenya. Ownership of ICS, including LPG, is high in urban areas, but the market share of factory-made improved biomass cookstoves across the country is only 3%.

**Awareness** of the benefits of ICS is low, especially in rural areas. Many distributors rely on door-to-door sales models to communicate in-person the benefits of ICS.

**Accessibility** of ICS differs dramatically across Kenya, where consumers in urban areas have access to many improved stove types, but few, if any, are accessible to rural communities. Biomass fuel is readily available for all consumers, but LPG is not available in most rural communities.

**Affordability** of factory-made ICS, priced around KSh3,000-4,000 (USD\$30-40), is low for rural consumers, but moderate for urban consumers, especially with increasing prevalence of consumer financing. Affordability of artisan-made ICS is moderately high for most urban consumers, with many products costing around KSh2,000 (USD\$15-20).

**Acceptance** of ICS by consumers is low; one prominent manufacturer mentioned that the industry has only recently, in the past 24 months, started designing stoves to meet user preferences, such as appearance, durability, and function.

### Improving accuracy and timeliness of testing would benefit all stakeholders

The Kenya Industrial Research and Development Institute (KIRDI) and the University of Nairobi are the two testing labs in Kenya. KIRDI is the only one that tests for emissions. KIRDI's self-reported biggest needs were increased technical capacity (via staff training), and more, or more durable, equipment. The former sentiment is shared by manufacturers, some of whom expressed concerns about the accuracy of KIRDI's test results. Equipment malfunctions and subsequent duration of sending equipment to the US for re-calibration introduced multiple-month delays in the testing schedule. Manufacturers highlighted these delays as a major concern for them and risk to an S&L program. Larger manufacturers subsequently test their cookstoves internally or send them to other labs outside Kenya, such as Uganda or the United States.

### Government is engaged in the cookstoves policymaking process and political will exists at multiple levels

The Ministry of Energy, the Energy Regulatory Commission (ERC), and the Kenyan Bureau of Standards (KEBS) regularly engage with their stakeholders to discuss cookstove policy. The Ministry of Energy has integrated and prioritized clean cookstove actions within the SE4ALL Plan and is supportive of efforts undertaken by the ERC. The ERC is motivated and understands its role in the process, and has started to develop clean cookstove policies, to build upon existing standards under the Kenya Bureau of Standards.

There is no obvious political tension regarding the roles of different government bodies, which presents a particularly unique and ideal landscape for collaboration and flexibility around implementation of different programs.

### Multiple, overlapping S&L policies and programs are in existence or development and need to be coordinated

The clean cooking sector in Kenya, which includes industry, NGOs and government, is currently focused on biomass cookstoves, but there is a market for other cleaner technologies, such as LPG. An improved biomass efficiency performance standard exists, owned by KEBS; the ERC has drafted licensing regulation for improved biomass cookstoves; and the Clean Cooking Association of Kenya (CCAK) has discussed the concept of an industry/membership label.

#### **KEBS Standard**

KEBS has an existing performance standard for improved biomass cookstoves (KAS 1814-1). KEBS certifies qualifying products and issues a KEBS Standardization Mark accordingly (see image to right). The standard mandates a minimum performance threshold for thermal efficiency and safety, and stoves meeting the criteria receive the KEBS Standardization Mark.



*KEBS Standardization Mark*

The standard is currently undergoing review and revision to include minimum emissions thresholds, which was initiated by supported by the broader clean cooking sector through CCAK.

#### **ERC Licensing Regulation**

The ERC developed “The Energy (Improved Biomass Cookstoves) Regulations, 2013,” a draft regulation of biomass cookstoves that imposes a variety of requirements related to licensing, installing ICS, and record keeping, upon a wide range of cookstove industry stakeholders and consumers.<sup>4</sup>

### More market and product performance information is needed

The ERC’s drafted licensing regulation has stalled due to the lack of supporting evidence required to pass the regulation through government, in particular the Ministry of Energy and Petroleum. The ERC requested support from CCAK to gather impact data for each Kenyan state, in order to develop the necessary impact assessment for the proposed regulation.

The Ministry of Health also expressed need for more and better data to support their health programs related to cooking. The latest version of this data may be available from the Global Alliance for Clean Cookstoves.<sup>5</sup>

Some manufacturers and NGOs collect data on the performance of cookstoves on the Kenyan market, both factory- and artisan-made.

---

<sup>4</sup> The Energy (Improved Biomass Cookstoves) Regulations, 2013.

[http://www.erc.go.ke/index.php?option=com\\_docman&task=doc\\_download&gid=57&Itemid=429](http://www.erc.go.ke/index.php?option=com_docman&task=doc_download&gid=57&Itemid=429)

<sup>5</sup> See HAPIT, the Global Alliance for Clean Cookstove’s tool for comparing health impacts of cooking technologies:

<http://cleancookstoves.org/about/news/08-28-2014-hapit-household-air-pollution-intervention-tool-for-comparing-health-impacts-of-cooking-technologies.html>

### A legislative and legal framework exists to host S&L programs but can be streamlined

An S&L program for six appliances is already in place, and six more products are expected to be added soon. The ERC is responsible for the regulation mandating the minimum performance levels for the appliances, while KEBS owns the underlying standard.

The ERC is established under the “Energy Act, 2006” and mandated to regulate the energy sector, among other functions.<sup>6</sup> The “Standards Act” CAP 496 established KEBS with the mandate to promote and manage standards.<sup>7</sup>

With respect to standards compliance (monitoring, verification and enforcement, or MV&E), there is overlap between the mandates of KEBS and ERC. If the ERC passes regulation that references standards developed by KEBS, both may technically be mandated to enforce upon said standard or underlying criteria. Both have recognized this overlap and a joint committee has been convened to address it. For the appliance S&L program, KEBS is responsible for testing safety, whereas ERC is responsible for product performance.

In general, however, KEBS enforcement aims to ensure that KEBS Standardization Marks are applied to certified products, not necessarily to sample and test products to verify the performance matches the performance levels submitted for certification.

### Substandard and counterfeit products are rampant, government resources are limited, and confidence in market compliance is subsequently low

Products with counterfeit labels are a major issue across many industries in Kenya. In 2015, the Kenya Anti-Government Agency reported that the country loses up to KSh69 billion (more than USD\$500m) annually to counterfeit goods.<sup>8</sup>

KEBS has a team of 50 compliance officers stationed across the country to survey all types of consumer goods, test for performance, and enforce accordingly, while the ERC’s team consists of about five individuals. However, manufacturers, government, and other stakeholders have expressed some degree of skepticism about the countries’ ability to effectively monitor and enforce a cookstove S&L program, given limited resources spread across the country and high prevalence of counterfeit products.

### Industry and NGO cooperation is high, appetite for S&L is growing, but consumer advocacy is lacking

Stakeholders in Kenya are extremely cooperative and are already engaged in strong dialogue and action about transforming the cookstoves sector. Many manufacturers and importers (as well as NGOs, government, individuals, testing labs, and other institutions) are members of the Clean Cookstoves Association of Kenya and are engaged in discussions about cookstove policies, including S&L programs.

While some industry players appear eager to showcase and protect their products and help grow the market through S&L, others are concerned with any unnecessary regulatory burdens or have little confidence that S&L can add value at this time. According to at least one larger manufacturer, the “modern appearance” of their stove provided a significant amount of differentiation from traditional

---

<sup>6</sup> The Energy Act, 2006. <<http://www.erc.go.ke/images/Regulations/energy.pdf>>

<sup>7</sup> CAP 496. <<http://kenyalaw.org/lex//actview.xql?actid=CAP.%20496>>

<sup>8</sup> “Kenya loses Sh69 billion to counterfeit goods annually.” <<https://www.standardmedia.co.ke/business/article/2000159299/kenya-loses-sh69-billion-to-counterfeit-goods-annually>>

cookstoves or artisanal ICS. This “differentiation by appearance,” one manufacturer argued, already accomplished a portion of what a labeling program would aim to provide, which, therefore, may make said labels less valuable to them.

There also appears to be significant variation in how different types of stakeholder prioritize emissions performance. For example, many manufacturers advertise the cost-savings, not health benefits of their products. Durability is a major design priority because of the demand for it from consumers. This is especially true for factory made stoves, due to the high price of such stoves compared to traditional stoves.

The consumer voice appears to be missing in the dialogue or very limited. Manufacturers are the primary source of consumer intelligence, but the ongoing Behavior Change Communications (BCC) campaign, and market research from Ghana label (the only known country where market research on proposed cookstoves S&L has been conducted) may offer more consumer insights in the near future.

### CCAK is a well-regarded but young organization

Most stakeholders believe CCAK provides clear value to them and the sector, especially in their ability to advocate on behalf of industry and convene stakeholders meaningfully. Some are willing to pay more in membership fees to increase CCAK’s impact, under the assumption that CCAK needs more capital to increase capacity. CCAK is operating primarily in accordance with the Country Action Plan<sup>9</sup> as well as inputs from its members. However, CCAK is a small organization and lacks experience leading an S&L program. They would need more resources, including financial, staff, and training to administer any S&L programs.

### Key Stakeholders and Roles

The following table lists the required stakeholder roles for developing and implementing an S&L program. Key Kenyan stakeholders are included based on their currently defined mandates, responsibilities, and capacity (including roles associated with the recent appliance S&L program). In some instances there are still gaps or overlaps between stakeholders that need to be addressed, such as who will administer a cookstoves S&L program.

*Table 1: Key Stakeholders and current roles related to potential cookstove S&L programs*

Focus Area	Key Stakeholder	Current Role & Responsibility
<b>Standards</b>	Kenya Bureau of Standards (KEBS)	Government agency mandated to provide standardization services.
<b>Regulations</b>	Energy Regulatory Commission (ERC)	Government agency mandated to regulate the energy sector, and collect and maintain data. Situated under the Ministry of Energy & Petroleum.
<b>Compliance</b>	Kenya Bureau of Standards (KEBS); and Energy Regulatory Commission (ERC)	Government agency mandated to provide compliance and conformity assessment services.
<b>Policy</b>	Ministry of Energy & Petroleum (MEP)	Government ministry mandated to facilitate provision of clean, sustainable, affordable, reliable, and secure energy services for national development while protecting the environment.

<sup>9</sup> Global Alliance for Clean Cookstoves’ Kenya Country Action Plan (CAP): [http://cleancookstoves.org/resources\\_files/kenya-country-action-plan.pdf](http://cleancookstoves.org/resources_files/kenya-country-action-plan.pdf)

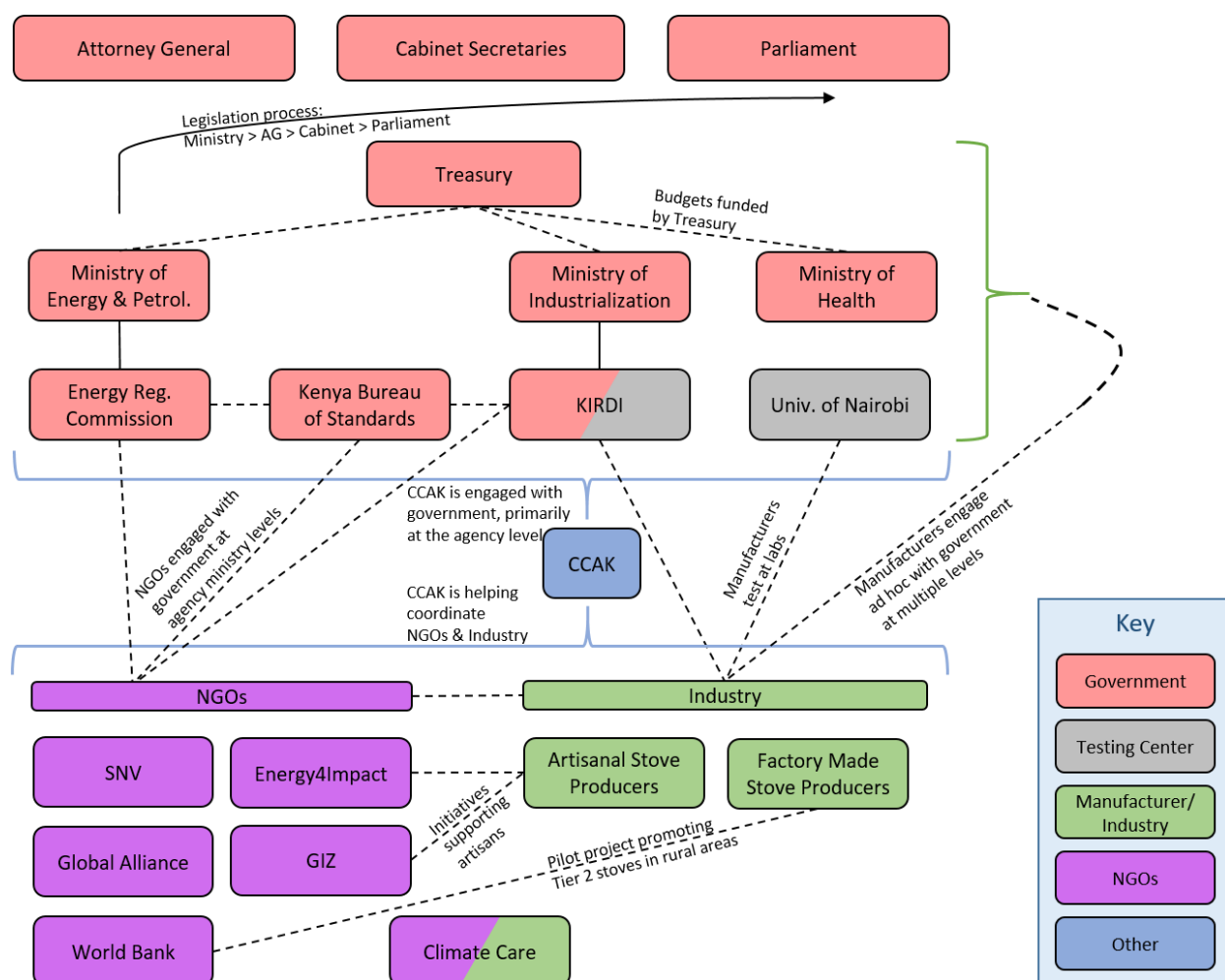


<b>S&amp;L Program Champion</b>	<i>Not yet determined</i>	Government entity responsible for making sure the proposed S&L program moves through appropriate process until put into law.
<b>S&amp;L Program Administrator</b>	<i>Not yet determined</i>	Government entity responsible for administering the S&L program.
<b>Testing &amp; Research Center</b>	Kenya Industrial Research & Development Institute (KIRDI)	Institution operating under Ministry of Industrialization and Enterprise Development that runs the only cookstoves test lab in Kenya with emissions testing capacity. Partners closely with KEBS.
<b>Sector Coordination &amp; Representation</b>	Clean Cooking Association of Kenya (CCAK)	Professional association with 34 paying members comprising representatives from government, academia, private sector, donor agencies, NGOs and individuals active in the clean cooking sector. Interacts closely with ERC.

## Institutional Mapping

Figure 2 is a map of Kenyan cookstove stakeholders and their relationships. This map was developed based on CLASP's 2016 scoping mission, and, while not exhaustive, attempts to represent each sector and most active stakeholders associated with the improved cookstoves market.

Figure 2: Map of Kenya's Institutions and Processes





## Recommended Approach to Designing Cookstove S&L in Kenya

Based upon the key findings compiled from interviews with stakeholders, the maturity of the improved cookstoves market, and international best practice, the following are three recommended characteristics to help define S&L policies and programs in Kenya. These characteristics, or approaches, have been identified as those most likely to increase efficacy and impact, and minimize risk or burden to industry for any S&L program implemented in the short-term.

### Voluntary approach

A voluntary approach is more likely to be effective than a mandatory or regulatory-based approach under the current environment in Kenya. Almost all appliance S&L programs start as voluntary because they are easier to launch and face less opposition from industry.<sup>10</sup> Compared to mandatory programs, voluntary programs also often require significantly less compliance capacity and experience for the implementing organization, which aligns well with Kenya's limited enforcement capacity and brief experience administering the appliance S&L program. Voluntary programs only require compliance of products entered into the program as well as potential false-claims by non-participating or non-eligible products. This offers some flexibility to industry, which may be appropriate given their small market share, and subsequently increases their likelihood of supporting and participating in a voluntary program.

While voluntary programs cannot leverage direct disincentives, there are a variety of complimentary and highly effective market transformation tools available to augment any voluntary S&L program, including tax policy, financial incentives, procurement, awards, awareness programs, among others.

### Technology-neutral approach

A technology-neutral S&L approach – where *all* technologies, such as wood, charcoal, LPG, and ethanol stoves, are eligible under a single program – is more likely to have a greater impact than a technology-specific approach, based on current global S&L best practices as well as technology types available on the market in Kenya. The alternative to a technology-neutral approach is a technology-specific one – where an S&L program only applies to wood, for example, or biomass (wood and charcoal) – which can have perverse disincentives, especially when supply chains for certain technologies or fuels are not well developed. This is the case for LPG and ethanol stoves and fuel supply in rural areas in Kenya. A technology-neutral approach can maximize the benefit of changing market conditions that may benefit different technologies or fuels over time. This is especially relevant for government-led S&L programs, which can take many years to implement, during which markets and consumer preferences may undergo changes.

### Endorsement approach and labels

An endorsement approach is one that encourages and pulls the market toward producing higher quality products by encouraging manufacturers to produce better products in order to receive an “endorsement” that provides a competitive advantage. An endorsement approach, such as using an endorsement label – which allows consumers and other buyers to look for and purchase specifically labeled products – will more likely be effective than an approach that removes or cuts off the worst-performing products in the market. This is due to the low maturity level of the Kenya cookstove market, specifically with respect to

---

<sup>10</sup> In Thailand, all of the S&L programs, which cover 28 products, are voluntary because that approach has been deemed best for the market.

the low number of available, accessible, and affordable cookstoves to major consumer segments (e.g. 75% of Kenyans live in rural areas with less access to factory-made biomass, LPG, and ethanol stoves).

Endorsement labels are also more likely to be effective than comparative labels in Kenya based on current testing realities presented by inconsistencies in stove production and operating. Artisan-made cookstoves, which currently dominate the Kenyan cookstoves market, are a hand-made and therefore non-standardized product. This often results in each unit differing slightly and subsequently performing differently, even if made by the same individual. In addition, the operation of cookstoves is an inherently variable activity that is hard to replicate. While local and international testing is diligently addressing these realities and performance metrics are being tested more accurately and consistently, the margin of error for test results is higher than other consumer products. Endorsement labels communicate in broader terms that a product is of high quality and performance, which requires a lesser degree of accuracy than a comparative label, making them better suited for current testing conditions.

Comparative labels, alternatively, communicate more detailed product information to buyers, such as specific performance levels or “tiers,” which require more acute testing data. Comparative labels provide value when used to compare similar products, such as helping consumers pick between two different products on a shelf. This is a less common shopping experience for many Kenyan cookstove consumers, many of whom buy products in less formal settings or are visited at home directly by individuals selling ICS. Comparative cookstove labels, therefore, will be more appropriate in Kenya when there are a variety of competitive products at varying performance levels available and accessible to buyers when they make their purchase decisions.

## Recommended Cookstove S&L Policies and Programs

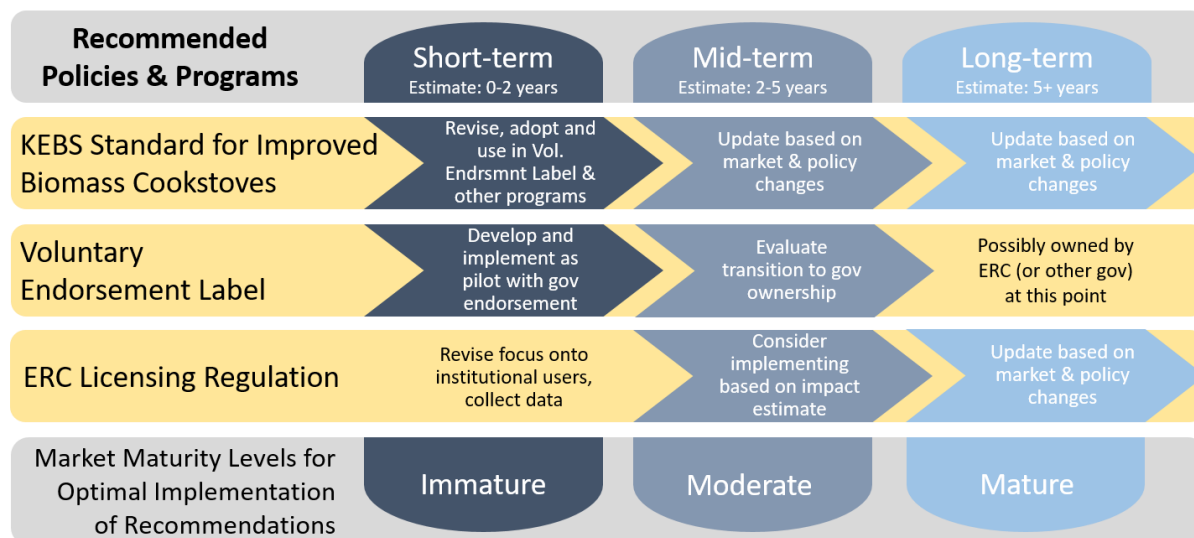
Based on the key findings and the proposed approach to designing cookstove S&L in Kenya, CLASP recommends developing and implementing a voluntary endorsement label for all improved cookstove types, including wood, charcoal, pellets, LPG, and ethanol. Consider the appropriate entity to administer the program: either CCAK, KEBS, ERC, Ministry of Energy and Petroleum, with endorsement and support from the others. The voluntary endorsement label program can act as a pilot program, and if CCAK leads the program, it can eventually be taken over by the ERC or appropriate government agencies. KEBS should finish revising and adopt the improved biomass cookstoves standard, and collaborate with the owner of the endorsement labeling program (and other relevant stakeholders) to use it as the foundation and criteria for the label.

With an endorsement label built on a revised KEBS standard and encouraging uptake of household/residential ICS, the current draft of the ERC licensing regulation for household cookstoves should be revised to focus exclusively on institutional cookstove users, thereby avoiding any potential redundancy across programs. Within each policy and program, and across the strategy, careful consideration and ongoing stakeholder consultations are needed to minimizing burden on industry.

Table 3 (on p.12) details and provides rationale for these recommendations, and elaborates on how they should be integrated. **All three options should be pursued simultaneously**, as explained in more detail in section, “Steps and Activities to Implement Recommended S&L Policies and Programs,” (p.14). However, given the time and detail required to develop and plan the implementation of an endorsement labeling program, and the data and clarity required to evaluate the impact of ERC’s licensing regulation, the latter two would benefit from a longer planning phase than the revision of the KEBS standard.

As the improved cookstoves market in Kenya matures over the mid- and long-term, the currently proposed policies and programs may play different roles as they become better suited to support the given market. Figure 3 provides a timeline for when to implement each of the proposed policies and programs for optimal impact. The timeframes are estimates that loosely correspond to distinct maturity levels<sup>11</sup> of the Kenyan cookstoves market – outlined in Table 2 – specifically with respect to the availability, awareness, accessibility, affordability, and acceptance of improved cookstoves by consumers.

Figure 3: Timeline for implementing recommended policies and programs



<sup>11</sup> See Annex 4: Market Maturity Levels for Optimal Implementation for an explanation of market maturity levels

## Recommended Policies, Programs, and Rationale

Table 3: Recommendation & Rationale for Proposed Policies and Programs

Description	Recommendation	Rationale
<b>KEBS Standard for Improved Biomass Cookstoves</b>		
<p><b>In place and currently undergoing review and revision to include minimum emissions thresholds. The standard currently mandates a minimum performance threshold for thermal efficiency and safety, and stoves meeting the criteria receive the KEBS Standardization Mark.</b></p>	<p><b>Encourage KEBS to finalize revision.</b> However, if possible, instead of implementing and enforcing the standard under KEBS and the KEBS Standardization Mark program, use the standard as the technical guide or criteria for the proposed Voluntary Endorsement Label.</p>	<p>In most S&amp;L programs, the national standard organization develops and owns the standard, and a separate agency is responsible for the policy and implementation of said standard. If the proposed Endorsement Label is supported by industry and other clean cooking stakeholders, implementing and enforcing the standard under a single program (the Endorsement Label) will prevent redundancy and streamline the process for industry.</p>
	<p><u>If a KEBS Standardization Mark is still required on qualifying stoves</u>, in addition to the proposed Endorsement Label, the standard should require that emissions testing (including testing for PM, CO and black carbon and short-lived climate pollutants) be performed, but <b>emissions performance criteria be voluntary, not mandatory</b>.</p> <p>Refer to the Uganda National Bureau of Standards, who are developing ICS standards<sup>12</sup>. Their technical committee review ends 3 August 2017.</p>	<p>Requiring emissions testing will build testing experience at KIRDI and other international labs (for imported stoves) and create a culture of third-party testing within the industry. When emissions testing becomes more consistent and accurate, consider making emissions performance mandatory. Otherwise, inconsistent testing can lead to inaccurate information being used and conveyed in programs, potentially undermining the value and perception of the program, and future S&amp;L and associated market transformation programs.</p> <p>Given the immaturity of the Kenya ICS market, mandatory emissions performance criteria may be less effective at accelerating the market and require more resources to implement at this time.</p>
	<p>To keep poor-quality products from being imported into Kenya, there may be an alternative to a mandatory KEBS performance standard: <b>Strong incentives/disincentives can be tied to performance levels</b> designated by KEBS, such as tariff and tax exemptions/preferences (beyond the recent VAT exemption<sup>13</sup>) for imported products.</p> <p>For domestically manufactured stoves, the proposed Voluntary Labeling Program, and envisioned future ERC regulations would help keep poor-quality products off the market.</p>	<p>If designed and aligned appropriately, performance-based incentives could essentially create a competitive disadvantage for importers trying to bring poor-performing products into the country. The performance levels/criteria designated by KEBS for this program would technically be voluntary, because they wouldn't mandate that all products sold on the market meet a performance level, but instead strongly discourage poor-quality imports from reaching the market.</p> <p>Given that industry has been successfully awarded an annual VAT exemption, future applications for exemptions should be more accessible.</p>

<sup>12</sup> <https://www.unbs.go.ug/attachments/alerts/3/DUS 761, 2017 Biomass stove - Requirements.pdf>

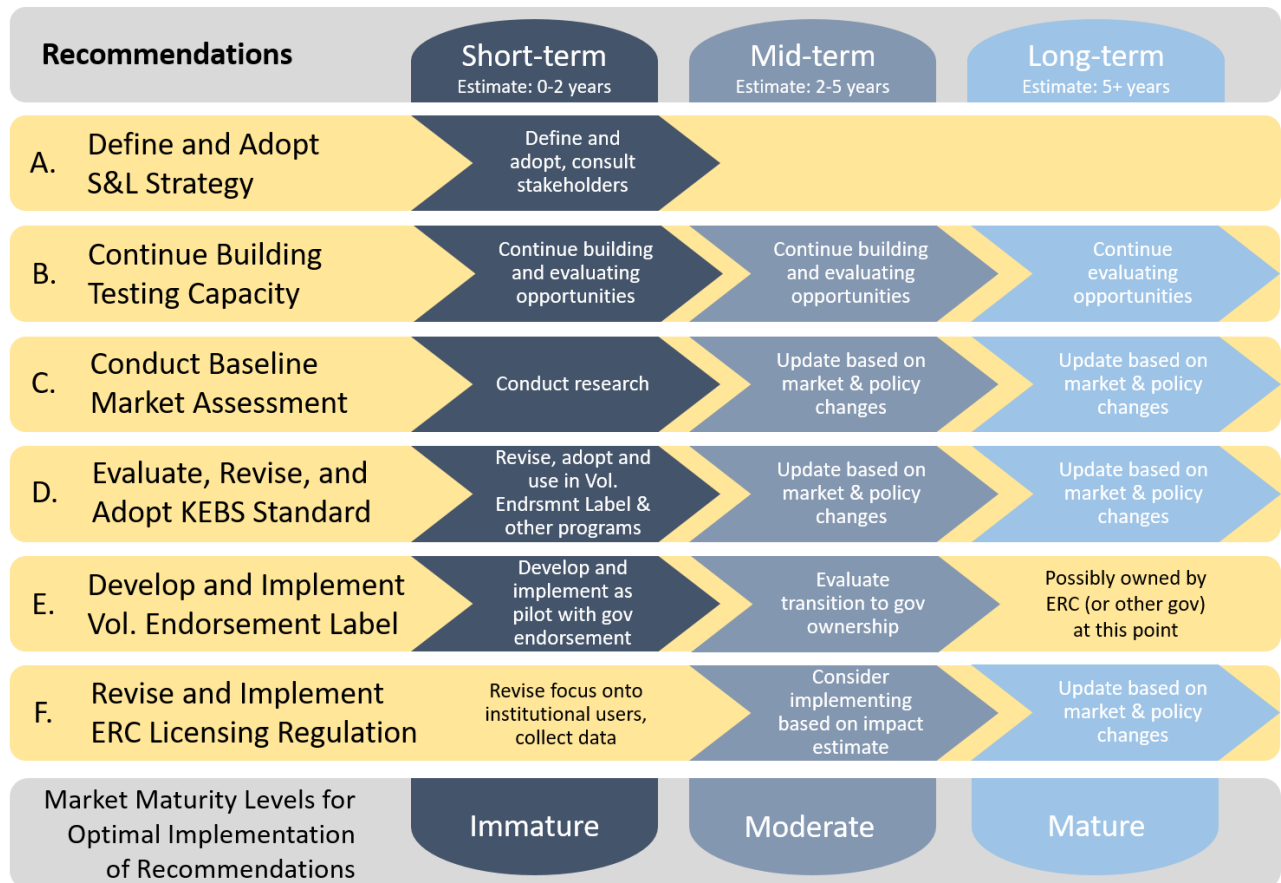
<sup>13</sup> <http://cleancookstoves.org/about/news/06-22-2016-kenya-drops-trade-tax-barriers-to-aid-adoption-of-cleaner-cooking-technologies.html>

Description	Recommendation	Rationale
<b>Voluntary Endorsement Labeling Program for Improved Cookstoves</b>		
<p><b>Currently exists in concept only.</b></p>	<p><b>Develop and implement as a pilot program</b>, administered by the government or sector-led (by CCAK, for example).</p> <p>If a sector-led label is agreed, care needs to be taken to ensure its credibility. This would also require significant investment to develop and implement to bolster CCAK's current lack of experience and infrastructure. The program should be evaluated at a predetermined future date to consider adoption by the government.</p> <p>Seek endorsement of the program from all key stakeholders: CCAK, ERC, KEBS, Ministry of Energy, Ministry of Health, and Ministry of Environment. Include ERC and KEBS in official advisory committee for program, and build the program on the proposed revision of the KEBS improved biomass cookstoves standard. <b>Add (more stringent) criteria to the KEBS standard as needed, such as emissions (including black carbon).</b></p> <p>With the prevalence of LPG and other cleaner technologies, the endorsement labeling program should consider the impact of including all technologies, not just biomass cookstoves.</p>	<p>Given the prevalence of substandard and counterfeit consumer products on the market, the resulting low levels of confidence in KEBS marks, and the general immaturity of the improved cookstove industry, a new and cookstove-specific labeling program may have the highest likelihood of success. Such a label offers a new "brand," upon which consumer confidence, industry credibility, and product quality assurance can be built, without having to use resources to combat existing negative perceptions. Initiating the label as a pilot program will allow for evaluation to measure the label's impact, and create a built-in date to assess whether the government should take over ownership of the program (if initiated as a sector-led label).</p> <p>Sector-led labels can be effective at low or no cost to government. CCAK currently has a strong reputation among industry stakeholders, but it is not clear how they or the improved cookstoves industry at large are perceived by consumers. Sector-led labels face the challenge of overcoming consumer mistrust of what is interpreted as a self-imposed assurance of quality.</p> <p>If a sector-led approach is taken, the label should not be based on, or require paid membership in CCAK, which might further alienate non-CCAK companies and heighten consumer scepticism. Given the nascence of the cookstoves market in Kenya, these risks are outweighed by the potential impact of a less-burdensome labeling program for industry to participate in and the value of leveraging a new brand to designate high-quality products.</p>
<b>ERC Licensing Regulation: "The Energy (Improved Biomass Cookstove) Regulations, 2013"</b>		
<p><b>Currently in development. Imposes variety of requirements on a wide range of industry stakeholders and consumers, including licensing, installing ICS, and record-keeping.</b></p>	<p><b>Revise and begin collecting data. Consider re-focusing current regulation on institutional stoves and users only.</b></p> <p>When the ICS market has matured, consider separate regulation that targets residential household cookstoves and users, if deemed necessary.</p>	<p>The current market offers a good opportunity for regulating the institutional users, where awareness and affordability may be higher than that of residential households. Until the market for residential households matures, there is considerable risk associated with the potential burden of the draft regulation on industry.</p>

## Steps and Activities to Implement Recommended S&L Policies and Programs

This section serves as a preliminary action plan for implementing the recommended approach outlined above. Figure 4 provides a high-level summary of recommendations, and is followed by more detailed steps and activities to implement each corresponding recommendation.

Figure 4: Summary of recommendations



## A. Define and adopt S&L strategy

CCAK, ERC, and KEBS should call together all cookstoves stakeholders to discuss, define, and ultimately adopt a strategy for coordinating and implementing S&L policies and programs in Kenya. *This strategic recommendations document* can serve to as the primary resource for the discussion. Care should be taken to understand how and why each program should be implemented, as well as when. Of particular importance will be the relationship between the KEBS Standard as the foundation for a labeling program or ERC regulation, and the roles of each organization in maintaining that working relationship.

A steering committee to meet regularly to discuss implementation, ideally with representation from ERC, KEBS, and CCAK, should be appointed to enact the strategy and ensure the proposed S&L policies and programs are aligned and optimized to achieve the sector's clean cooking goals.

### Rationale

With multiple proposed or existing S&L programs for cookstoves, coordinating them holistically will prevent redundancy and leverage the commitments from multiple stakeholders. Getting agreement and buy-in on an initial strategy will also streamline the rest of the steps necessary to implement a coordinated set of S&L policies and programs.

### Expected outcomes

- Finalized strategy to guide the development, adoption, and implementation of multiple S&L policies and programs.
- Established committee to enact and maximize proposed strategy.
- Stakeholder awareness, input, and buy-in of proposed S&L policies and programs.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Agree and adopt S&L strategy	<ul style="list-style-type: none"><li>▪ Led by Ministry of Energy</li><li>▪ Inputs from ERC, KEBS, and CCAK</li></ul>	High	Staff time	1-2 months
Appoint a steering committee to enact strategy	<ul style="list-style-type: none"><li>▪ Led by Ministry of Energy</li><li>▪ Inputs from ERC, KEBS, and CCAK</li></ul>	High	Staff time	1 month
Consult stakeholders by hosting stakeholder workshop/meeting and sharing written strategy and plan	<ul style="list-style-type: none"><li>▪ Led by Ministry of Energy</li><li>▪ Select ICS and related cookstove stakeholders</li></ul>	High	\$2,000-5,000	1-2 month



## B. Continue Building Testing Capacity

Actively increase engagement between KIRDI, University of Nairobi, manufacturers (especially those with in-house testing capacity), and regional RTKCs, such as the Centre for Research in Energy and Energy Conservation (CREEC) or manufacturers that conduct internal testing to share best practices, or coordinate staff trainings. Both labs may also benefit from identify a local or regional resource or testing center that can calibrate their equipment as needed to prevent having to delay testing to ship equipment to the US.

Consider conducting a simple assessment of testing demand from the planned S&L programs to compare against the capacity of KIRDI and University of Nairobi, and use the Alliance’s “RTKC business planning toolkit.” If testing demand is expected to outweigh capacity, identify opportunities, such as staff trainings, to address the gap.

### Rationale

All S&L programs must have a testing facility that can perform reliable, unbiased tests. The two testing labs in Kenya, KIRDI and University of Nairobi, need support to build their capacity, according to their own admission, as well as the views of most stakeholders. Increasing engagement will also benefit the industry by providing more transparency around testing, which currently presents challenges to their business timelines.

### Expected outcomes

- Stronger relationships and connections between local and regional testing labs.
- Increased testing capacity at KIRDI and University of Nairobi.
- Increased communication and transparency around testing capacity, barriers, and timelines.
- Increased confidence in testing results and all dependent S&L programs.
- Increased efficacy and impact of all S&L programs.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Increase knowledge sharing by organizing trainings and engage with other testing experts (such as CREEC) in person or via webinars	▪ Led by CCAK, KIRDI, University of Nairobi, KEBS, ERC, or other willing and able	Medium-High	Range from staff time to \$25,000	Ongoing
Conduct evaluation of KIRDI’s testing capacity and needs; use Alliance’s “RTKC toolkit”; consider engaging Aprovecho (test lab), who have provided trainings already	▪ Led by Ministry of Industrialization or consultant	Medium-High	\$10,000-50,000	3 months
Consult stakeholders	▪ Led by KIRDI ▪ All ICS and related cookstove stakeholders	High	Staff time	Ongoing

## C. Conduct baseline market assessment

Collect and compile existing market and technology data from all stakeholders, including manufacturers willing to share. The Global Alliance is a good resource for this data and has provided it to stakeholders in the past. Ensure the most recent data is available, and identify data needs and gaps between what is available and what is needed to support the development and implementation of proposed S&L programs.

Of critical importance is the baseline market assessment, which seeks to understand the number and variety of product types and performance levels available on the market. The market and engineering data gathered and analyzed includes:

- Annual sales volumes
- Sales prices
- Production volumes
- Import and export volumes
- Market share of different technologies and models
- Product efficiency and emission performance
- Product safety and durability information

While complete data is ideal, S&L programs can be successful with incomplete data and best estimates may suffice when necessary. Ask manufacturers and NGOs if they would be willing to share their data.

### Rationale

A baseline market assessment is needed to optimize and justify the design of any S&L policy or program. This information informs the process of setting performance criteria and evaluating the impact of any S&L policy or program. Without it, a program may be too lenient and encourage the uptake of inefficient cookstoves, or be too ambitious and discourage the uptake of efficient and clean cookstoves.

### Expected outcomes

- Data depicting the distribution of products by technology, efficiency, and emissions performance.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Compile existing data and assess data needs	<ul style="list-style-type: none"><li>▪ Led by CCAK</li><li>▪ Inputs from KEBS, ERC, Ministry of Energy, and others</li></ul>	Medium-High	Staff time	Already started
Conduct baseline market assessment	<ul style="list-style-type: none"><li>▪ Led by consultant, in support of S&amp;L Steering Committee</li><li>▪ Support from KEBS, ERC, CCAK, and Ministry of Energy</li></ul>	Medium-High	\$20,000-50,000	3-4 months
Consult stakeholders	<ul style="list-style-type: none"><li>▪ Led by S&amp;L Steering Committee</li></ul>	High	Staff time	Ongoing

## D. Evaluate, revise, and implement KEBS Standard

### Step 1: Evaluate existing standard

Conduct a retrospective evaluation of the current KEBS standards for biomass cookstoves and compare to most recent international best practices identified through the ISO. If possible, determine how it has been implemented to date and its impact on consumer purchasing decisions, manufacturer decisions (such as design and manufacturing choices), and overall ICS performance or market share. A qualitative approach may be the only feasible option.

#### Rationale

Program evaluations can provide justification for the standard/program and its allocated resources. In addition, it can expose any weaknesses or opportunities to improve the program or regulation's efficacy.

#### Expected outcomes

- Evidence of the standard's impact.
- Potential information to improve the standard and its impact.
- Increased industry and consumer confidence in the standard.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Conduct retrospective standard program evaluation	▪ Led by KEBS or consultant	Medium	Staff time	1 month
Consult stakeholders	▪ Led by KEBS ▪ All ICS and related cookstove stakeholders	High	Staff time	Ongoing

### Step 2: Review and revise KEBS standard

- Use a committee to review the existing standard, with significant input from the standard evaluation (detailed above in Step 1), and revise to:
  - 1) Include a requirement for testing emissions – but, if possible, do not mandate a minimum threshold for emissions performance at this time. In the meantime, KIRDI can offer emissions results and potentially suggestions on improving stove design, and vice-versa; manufacturers can offer KIRDI advice on testing emissions.
  - 2) If needed, change the existing efficiency criteria to match policy goals and market conditions (rely on inputs here from the *baseline market assessment*).
  - 3) Incorporate international best practices, such as test procedure, metrics, reporting guidelines, from ISO/TC 285.
  - 4) Consider broadening the scope of the standard to include all improved cookstove technologies, such as LPG and ethanol, not just biomass stoves.
- Consult directly with stakeholders throughout the entire process of reviewing and revising the standard, especially soliciting input from manufacturers and retailers.
- Estimate the expected impact of the revised standard on industry and others influenced by the new criteria and broadened scope, present to stakeholders.

- Align the standard with the Endorsement Label program and the ERC Regulation, and ensure that the standard can serve as the underlying technical guide or criteria for these other programs.
- Follow established process to adopt the standard.

#### Rationale

Requiring emissions testing will build testing capacity at KIRDI and other international labs (for imported stoves), and create a culture of testing within the industry. However, emissions testing accuracy should be improved and verified before KEBS enforces emission performance. Otherwise, inconsistent testing can lead to inaccurate information being used and conveyed in S&L and other market transformation programs, and potentially undermine the value and perception of the program, as well as S&L programs generally. A technology-neutral approach to any S&L policy is more likely to have a greater impact in Kenya in the short-term due to the availability of a variety of clean products.

Estimating the potential impact of the standard will help ensure the performance criteria is appropriately set and provides industry with evidence that their perspective is considered.

#### Expected outcomes

- Revised standard more appropriate for sector goals and Kenya market based on stakeholder input.
- Estimated impact of revised standard.
- Buy-in from industry and other stakeholders into the standard.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Draft revised standard (incl. emissions, efficiency, int'l best practice, scope)	<ul style="list-style-type: none"> <li>▪ Led by KEBS technical committee</li> <li>▪ Inputs from Ugandan draft standard</li> </ul>	High	Staff time plus KEBS' rate	2-3 months
Estimate potential impact of revised standard	<ul style="list-style-type: none"> <li>▪ Led by KEBS or consultant</li> </ul>	Medium-High	\$10,000-25,000	1-2 months
Align with other S&L programs (domestic and regional) within S&L Steering Committee discussions	<ul style="list-style-type: none"> <li>▪ Led by KEBS or consultant</li> <li>▪ CCAK and ERC necessary</li> <li>▪ Potentially others (MoE)</li> </ul>	Medium	Staff time	Ongoing
Consult stakeholders	<ul style="list-style-type: none"> <li>▪ Led by KEBS</li> <li>▪ All ICS and related cookstove stakeholders</li> </ul>	Medium-High	Staff time	Consultation period: 2 months
Adopt standard	<ul style="list-style-type: none"> <li>▪ Led by KEBS</li> </ul>	High	Staff time	TBD

### **Step 3: Ensure Testing Capacity**

- Ensure testing capacity and resources are available to test products according to the standard and manage the demand.
- If testing capacity is insufficient, develop an implementation plan to ensure capacity at local facility, or identify and accredit an alternative lab with sufficient capacity.

#### Rationale

Reliable testing is fundamental to the success of any S&L program, and requires a reliable testing facility. Without either, quality cannot be assured and even speculation of unreliable testing can undermine industry and consumer confidence, which would be detrimental to any S&L program, but especially a voluntary program, such as the Endorsement Label (which is built upon the KEBS standard).

Expected outcomes

- Accredited lab with full capacity to meet demands of proposed S&L programs.
- Consumer and industry confidence in testing results and dependent S&L programs.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Assess testing capacity and resources	▪ Refer to <i>Recommendation B (p.16)</i>			
Identify and accredit lab as needed	▪ Led by KEBS	Medium-High	\$TBD	Ongoing

## E. Develop and Implement Voluntary Endorsement Labeling Program

### Step 1: Develop program plan with stakeholders

- Develop a highly detailed implementation plan for the Voluntary Endorsement Labeling Program that includes identifying the organization to lead the program, as well as program goals, approach, scope, roles, and compliance. Based on inputs from stakeholders, here are some high-level preliminary recommendations:
  - Lead: Decide among CCAK, ERC, KEBS, and Ministry of Energy.
  - Goal: A simple endorsement label to encourage uptake of cleaner more efficient stoves
  - Approach: Pilot program, voluntary, endorsement label.
  - Scope: Technology-neutral (so any product that meets the performance criteria is eligible, regardless of fuel-type or other technological feature). Consider costs and benefits of delineating residential from institutional stoves, especially in context of the proposed ERC regulation possibly refocusing on institutional stoves.
  - Role: CCAK, KEBS and ERC (and possibly Ministry of Energy) should serve in prominent roles, if not leading the program, including on review committee for submitted products.
  - Compliance: Use hard-to-counterfeit label designs and solicit tips from the sector to rely on self-reporting of non-compliance or misused labels.
- Consult stakeholders directly throughout the development of the plan through workshops.
- Ask CCAK, ERC, KEBS, and/or Ministry of Energy to officially endorse the labeling program.
- Discuss and, if possible, document any potential intention for the government to have the option to take over the Voluntary Endorsement Labeling Program at some point in the future.

#### Rationale

Given the program's proposed design as an endorsement and voluntary label, CCAK is best suited to administer it, but will require technical support and resources. Justification for the approach and scope are outlined in the "Conclusions and Recommended Approach to Kenya Cookstove S&L," earlier in the document.

Ideally, the label would be a pilot program that the ERC (or other government agency) would administer fully in the long run. Having CCAK lead it now may make sense due to the nascence of the market not requiring a mandatory program or regulatory approach. However, in order to maintain program sustainability, government is best suited to own the program long term.

#### Expected outcomes

- Detailed program plan, heavily informed by cookstoves stakeholders.
- Stakeholder buy-in for the endorsement labeling program.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Develop implementation plan	▪ Consultant and owner	Medium-High	See <i>Aggregate Estimated Budget (p.27)</i>	2 months
Consult stakeholders	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium-High		

## Step 2: Identify program criteria

- Consider using the KEBS standard as the foundation for the Endorsement Labeling program. Additional or alternate criteria will likely be necessary.
- Form a technical committee, including at least CCAK, KEBS and ERC, to identify performance and other product criteria (such as safety, durability, or standardization) for the program. Include thermal efficiency and any emission parameters that can be reliably tested. If possible, use existing committees (from other programs or initiatives) to reduce redundancy and minimize administrative needs.
- Estimate the potential impact of the program based on the proposed criteria, including qualitative data such as expected industry participation and number of qualifying products on the market.
- Consult stakeholders throughout the process, especially manufacturers.

### Rationale

The criteria should balance the social goals of the program (e.g. reducing emissions exposure, reducing inefficient biomass fuel consumption) with the market status of technology. For example, if only social goals are considered, criteria might be set at the equivalent of Tier-4 for emissions performance. However, given most biomass stoves on the market in Kenya are Tier 2 or below, this would preclude almost all biomass stoves from qualifying for such a program. As a result, instead of driving the uptake of improved biomass stoves that are Tier 2 or better, they would be absent from said program. Therefore, it is essential to solicit input from all stakeholders to balance the overall goals and set the appropriately criteria.

### Expected outcomes

- Appropriately set performance criteria to achieve program goals and enable industry.
- Stakeholder buy-in for the endorsement labeling program.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Draft program criteria	<ul style="list-style-type: none"><li>▪ Jointly led by CCAK, KEBS, ERC and/or consultant</li><li>▪ All ICS and related cookstove stakeholders</li></ul>	Medium-High	See <i>Aggregate Estimated Budget (p.27)</i>	3-4 months
Estimate potential impact of program	<ul style="list-style-type: none"><li>▪ Led by owner or consultant</li></ul>	Medium		
Consult stakeholders	<ul style="list-style-type: none"><li>▪ Led by owner</li><li>▪ All ICS and related cookstove stakeholders</li></ul>	Medium-High		

## Step 3: Design endorsement label and communications campaign

- Conduct market research focused on the following label elements to inform the label design and communications campaign:
  - Visual design
  - Technical specifications that the label will communicate
  - Other attributes to include (such as brand name)
  - Any information to inform communications campaigns (such as purchasing priorities)



- The research – which can be quantitative or qualitative – should solicit input from a variety of stakeholders, including consumers (urban and rural), institutional users, retailers, and manufacturers.
- The design of the label needs to reflect the goals of the policy or program, consumer comprehension (such as using visuals instead of text), and avoid counterfeiting and misuse of the label (such as including QR code or holographic material).
- Use the market research to inform a communications campaign strategy by identifying the best messages and channels (TV, radio, community groups...etc) to communicate with different market actors.

### Rationale

Market research enhances the chance of program success by making sure the label and communications campaign are designed to present information to consumers and industry in as useful and accessible a manner as possible. Involving a diverse range of stakeholders will increase acceptance of the label by industry and the public.

Communications efforts are key to the success of labeling programs, to ensure industry and government understand the value of the program, and consumers learn to associate the label with quality products. Kenyan stakeholders have all expressed that consumer education and awareness is key to any clean cookstove programs.

Any communication efforts should be aligned, coordinated, and built upon existing behavior change communication efforts, such as the BCC campaign currently being run by PSK and PAC.

### Expected outcomes

- Market research data on household consumers, institutional users, and industry that can inform current (and potentially future) label designs and communications campaigns.
- Final, informed endorsement label design.
- Communications campaign strategy.
- Buy-in from stakeholders to the label design and communications strategy.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Conduct market research	▪ Led by owner or consultant	Medium	\$50,000	4-9 months
Design endorsement label	▪ Led by owner or consultant	Medium-High	\$2,000-10,000	
Design communications campaign	▪ Led by owner or consultant	Medium-High	\$20,000	
Consult stakeholders	▪ Led by owner or consultant ▪ All ICS and related cookstove stakeholders	Medium-High	Staff time + workshop cost	

#### Step 4: Develop compliance scheme

- Finalize a compliance strategy and plan, with considerable input from KEBS and ERC, or other experienced compliance, anti-counterfeiting, or consumer protection entity, such as Kenya Anti-Counterfeit Agency or Kenya Association of Manufacturers.
- Explore low-resource-intensive options for monitoring, verifying, and enforcing use of the label. Consider the following options:
  - Industry self-policing, streamlined with a website or hotline for sending tips/notices of non-compliance.
  - Product database or registry accessible to public for product reference.<sup>14</sup>
  - SMS-based consumer verification of products (use QR codes if/when available).
  - Annual audit of registered products, which can include verification testing.

#### Rationale

Given the voluntary nature of the program, the program owner can hold program participants accountable (e.g. by signing a contract and accepting the rules and consequences of non-compliance with the program), but not counterfeiters outside the program without leveraging intellectual property and/or consumer protection laws. In the longer term, as the program gains more attention and provides increasing value to participating companies, more stringent compliance mechanisms may be necessary, such as post-market verification (i.e. sampling and testing products from the market) and enforcement.

A product registry or certification database and process can reduce the need for post-market verification and other resource-intensive compliance efforts because products are tested up front and made publicly available to consumers and other buyers.

#### Expected outcomes

- Final compliance plan.
- Buy-in from stakeholders.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Finalize compliance strategy and plans	<ul style="list-style-type: none"><li>▪ Led by owner</li><li>▪ Anti-counterfeit specialist or consumer protection organization</li></ul>	Medium	See <i>Aggregate Estimated Budget (p.27)</i>	1-2 months
Build product database/registry	<ul style="list-style-type: none"><li>▪ Consultant</li></ul>	Medium	\$50,000-150,000	TBD
Consult stakeholders	<ul style="list-style-type: none"><li>▪ Led by owner</li><li>▪ All ICS and related cookstove stakeholders</li></ul>	Medium-High	Staff time	Ongoing

---

<sup>14</sup> Guide to Developing Lighting Product Registration Systems:  
[http://clasp.ngo/~media/Reports/2016/MVE%20Guidance%20Notes/Developing\\_lighting\\_product%20registration\\_systems\\_February%202016.pdf?la=en](http://clasp.ngo/~media/Reports/2016/MVE%20Guidance%20Notes/Developing_lighting_product%20registration_systems_February%202016.pdf?la=en)

## Step 5: Finalize and launch program

- Finalize program rules and terms of reference that govern the program. This document will be essential for providing industry with the information they need to participate meaningfully in the program, and overall transparency.
- Finalize an implementation plan that clearly defines implementation needs, such as financial and staff resources, and process, such as the steps to certify qualified products.
- Host workshops, as needed, to detail and define how to align the labeling program with the KEBS standard and ERC regulation, as well as any regional S&L cookstoves programs.
- Consult stakeholders to solicit feedback and seek buy-in

### Rationale

If a sector-led labeling program is chosen, CCAK will be tasked with the challenge of overcoming potential skepticism about the credibility of fairness of the program. A highly transparent process with clear rules is essential. Consult stakeholders in-person throughout the process of finalizing the program and ensure their buy-in before launching – especially industry because their participation in the program is voluntary.

### Expected outcomes

- Final program rules and terms of reference based on stakeholder inputs.
- Final implementation plan.
- Clear expectations from CCAK, KEBS and ERC about the role and complementary relationship between Endorsement Labeling Program, KEBS standard, and any ERC regulations.
- Buy-in from stakeholders.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Finalize program rules/terms of reference	▪ Led by owner	Medium	See <i>Aggregate Estimated Budget (p.27)</i>	4-9 months
Finalize implementation plan (Fees, staff, other resources)	▪ Led by owner	Medium		
Align with other S&L programs (domestic and regional)	▪ Led by owner ▪ KEBS and ERC necessary	Medium-High		
Consult stakeholders	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium-High		
Launch program	▪ Led by owner	Medium		

## Step 6: Launch communications campaign

- Rely on the communications strategy and market research to scope out communications projects and campaigns aimed at raising awareness about the Endorsement Label with consumers and industry, including retailers who may not have played as significant a role in other stakeholder consultation efforts.
- Carry out targeted education and communications campaigns for the Endorsement Label, with a specific focus on the culture of quality, the impact the programs can make, and how consumers should use the labels.

### Rationale

As previously described, communications efforts are key to the success of labeling programs, to ensure industry and government understand the value of the program, and consumers learn to associate the label with quality products. Kenyan stakeholders have all expressed that consumer education and awareness is key to any clean cookstove programs.

Any communication efforts should be aligned, coordinated, and built upon existing behavior change communication efforts, such as the BCC campaign currently being run by PSK and PAC.

### Expected outcomes

- Extensive multi-media communications campaigns that leverage the existing Behavior Change Communication campaign.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Scope and launch campaigns	<ul style="list-style-type: none"><li>▪ Led by owner or consultant</li></ul>	Medium-High	\$TBD	TBD
Consult stakeholders	<ul style="list-style-type: none"><li>▪ Led by owner</li><li>▪ All ICS and related cookstove stakeholders</li></ul>	Medium-High	Staff time	Ongoing

## **Step 7: Evaluate program**

Program evaluations attempt to quantify impacts and benefits of an S&L program. Plan program evaluation during the early stages of program development or immediately after (instead of waiting to think about evaluating a program years after inception). Program evaluation can take multiple forms, and if resources are limited, conduct a qualitative assessment or simply monitor and assess the program against its pre-determined activities and targets.

### Rationale

Program evaluations can provide justification for the program and its allocated resources. In addition, it can expose any weaknesses or opportunities to improve the program or regulation's efficacy.

In order for the ERC or other government agency to take ownership of the labeling program, a thorough program evaluation analysis that highlights the impacts and benefits will justify and streamline any transition.

An evaluation of a cookstoves labeling program could have global benefits because few, if any, such evaluations of such programs exist. Lessons learned could benefit hundreds of millions of cookstove users under any similar programs that are implemented in the future.

### Expected outcomes

- Program monitoring plan and program assessment.
- Evidence to justify the continued implementation of label program.
- Industry and consumer confidence in the program.
- Potential information to improve the impact of the program.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Monitor and evaluate program	▪ Led by owner or consultant	Medium	\$TBD	Ongoing
Consider transition to government (ERC) ownership	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium	Staff time	1-2 months

### Aggregate Estimated Budget (for Activity E Steps without itemized budgets)

Many of the budgets for activities under *Recommendation E: Develop and Implement Voluntary Endorsement Labeling Program* are not easily disaggregated. Steps 1, 2, 4, and 5 are heavily interrelated, will require support from a consultant, and will be more efficiently implemented in a coordinated fashion. The budget for these aggregated activities, presented below, is estimated between \$250,000 and \$400,000. This budget is in addition to the estimated budgets detailed in the previously outlined steps.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Step 1. Develop program plan with stakeholders			\$250-400,000	
Develop implementation plan	▪ Consultant and owner	Medium-High		2 months
Consult stakeholders	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium-High		
Step 2. Identify program criteria				
Draft program criteria	▪ Jointly led by CCAK, KEBS, ERC and/or consultant ▪ All ICS and related cookstove stakeholders	Medium-High		3-4 months
Estimate potential impact of program	▪ Led by owner or consultant	Medium		
Consult stakeholders	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium-High		
Step 4. Develop compliance scheme				
Finalize compliance strategy and plans	▪ Led by owner ▪ Anti-counterfeit specialist or consumer protection organization	Medium		1-2 months
Step 5. Finalize and launch program				
Finalize program rules/terms of reference	▪ Led by owner	Medium		4-9 months
Finalize implementation plan (Fees, staff, other resources)	▪ Led by owner	Medium		
Align with other S&L programs (domestic and regional)	▪ Led by owner ▪ KEBS and ERC necessary	Medium-High		
Consult stakeholders	▪ Led by owner ▪ All ICS and related cookstove stakeholders	Medium-High		
Launch program	▪ Led by owner	Medium		

## F. Revise and Implement ERC Licensing Regulation

### Step 1: Revise scope and develop program plan

- Review the draft ERC licensing regulation and revise the scope of to focus exclusively on institutional users.
- Define the high-level goals, approach, scope, roles, and tentative compliance approach for implementing the regulation.
- Consult stakeholders on the revised scope and program plan to solicit necessary input from manufactures, retailers, institutional users, consumer groups, CCAK, KEBS, NGOs, and all cookstoves stakeholders that may be influenced by the proposed regulation.
- The revised regulation would also benefit from legal consultation to help it pass through the necessary legislative steps, including the Minister of Energy, Attorney General, the Cabinet, and Parliament.

#### Rationale

Institutional stoves and user appear to be a more appropriate audience for cookstoves regulation, given their smaller number compared to residential users/households, and the government's ability to more effectively monitor and enforce use of cookstoves by institutions. Institutional and residential users are also very different in nature, and likely warrant completely independent regulations.

#### Expected outcomes

- Revised regulation focusing on institutional cookstoves and users.
- Buy-in from industry and other stakeholders into value of proposed regulation.
- Increased chance the regulation passes through legislation process and results in desired impact.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Revise to focus primarily on institutional stoves	▪ Led by ERC or consultant	Medium-High	Staff time	2-3 months
Consult stakeholders	▪ Led by ERC ▪ All ICS and related cookstove stakeholders	Medium-High	Staff time	
Consult legal expertise	▪ Led by ERC ▪ Legal experts	Medium	Staff time	

### Step 2: Collect or conduct research

- Begin collecting data that will inform the revision of the regulation to ensure it is appropriately designed to achieve the defined goals. This should include gathering market details such as the share, cost and performance of institutional stoves, priorities and financial means of institutional stove users, and the current and potential role of ICS technicians, among others topics.
- Coordinate research efforts and existing data with CCAK and KEBS to avoid duplication. Evaluate the potential impact of the proposed regulation.
- Consult stakeholders to present the research or engage throughout the data gathering process.

### Rationale

The ERC has requested support from CCAK to collect data that justifies the need for the proposed regulation. For example, the current regulation draft requires that all manufacturers (and other industry members) have licensed ICS technicians on staff, but there is no data indicating that individuals with such expertise are available in the market. Market data that provides more detail into the business models and supply chain will help inform the final revisions and validate the regulation.

### Expected outcomes

- Market data on institutional stoves, users, and supply chain to inform and justify regulation.
- Estimated potential impact of regulation to justify regulation.
- Buy-in from stakeholders on regulation.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Perform institutional stove research	▪ Led by CCAK or consultant on behalf of ERC	Medium	\$50,000	3-4 months
Estimate potential impact of regulation				
Consult stakeholders	▪ Led by ERC ▪ All ICS and related cookstove stakeholders	Medium-High	Staff time	

### **Step 3: Revise, adopt, and implement regulation**

- Based on feedback from stakeholder consultation, finalize the regulation language, implementation plan, and compliance plan. In the latter two, care must be taken to define the specific roles – such as who will guide the regulation through the legislation process – and responsibilities of ERC and other relevant actors, such as KEBS and its cookstoves standard.
- ERC should work with KEBS to leverage their existing expertise and any available resources for compliance (i.e. monitoring and enforcement).
- Through each of these steps, care should also be taken to minimize unnecessary burden to industry or institutional users, many of whom may have limited resources, such as schools and hospitals.
- The regulation and its implementation need to be fully aligned with the KEBS Standard and Endorsement Label. If possible, we recommend building the regulation's performance criteria on the KEBS Standard, so long as the Standard is appropriate for institutional stoves.
- Consider harmonizing regulation with regional or neighboring national standards.

### Rationale

Implementation and compliance responsibilities overlap between ERC and KEBS, and therefore clearly defined roles are necessary. ICS manufacturers have also expressed concerns over the burden any regulation may impose upon their industry, which is nascent and still working diligently to establish a presence in the broader cooking market.

Strong alignment with the KEBS Standard and Endorsement Label are necessary to maximize the impact of each policy and program and avoid confusing industry and consumers.



#### Expected outcomes

- Final regulation, submit through the Ministry of Energy and Petroleum, passed into law.
- Final implementation plan to guide implementation, including guiding regulation through the legislation process.
- Final compliance strategy and plan.
- Strong alignment with KEBS Standard and Endorsement Labeling program.
- Buy-in from stakeholders on regulation.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Finalize draft regulation	▪ Led by ERC or consultant	Medium	Staff time or \$50,000-100,000	6 months
Finalize implementation plan	▪ Led by ERC or consultant	Medium		
Finalize compliance strategy and plan	▪ Led by ERC or consultant	Medium		
Align with other S&L programs (domestic and regional)	▪ Led by ERC or consultant ▪ KEBS and CCAK necessary	Medium		
Consult stakeholders	▪ Led by ERC ▪ All ICS and related cookstove stakeholders	Medium		
Adopt regulation	▪ Led by ERC	Medium	\$TBD	12 months
Implement regulation	▪ Led by ERC	Medium		Ongoing

#### **Step 4: Evaluate program**

Program evaluations attempt to quantify impacts and benefits of an S&L program. Plan program evaluation during the early stages of program development or immediately after (instead of waiting to think about evaluating a program years after inception). Program evaluation can take multiple forms, and if resources are limited, conduct a qualitative assessment or simply monitor and assess the program against its pre-determined activities and targets.

#### Rationale

Program evaluations can provide justification for the regulation and its allocated resources. In addition, it can expose any weaknesses or opportunities to improve the program or regulation's efficacy.

An evaluation of a cookstoves regulation for institutional stoves and users could have global benefits because few, if any, such evaluations of such programs exist. Lessons learned could benefit hundreds of millions of cookstove users under any similar programs that are implemented in the future.

#### Expected outcomes

- Program monitoring plan and program assessment.
- Evidence to justify the continued enforcement of the regulation.
- Industry and consumer confidence in the program.
- Potential information to improve the impact of the regulation and program.

Activity / Intervention	Involved Parties	Potential for Success	Estimated Budget (USD)	Estimated Time
Monitor and evaluate program	▪ Led by ERC or consultant	Medium	\$TBD	Ongoing

## Complementary and Future Market Transformation Considerations

In addition to the S&L policies and programs detailed above, complementary recommendations and market transformation programs can be considered in Kenya.

### Lobby Kenya Treasury for Cookstoves Funding and Tax Exemptions

Based on commitments to promote health, social, and environmental benefits associated with cleaner cooking from the Ministry of Energy and Petroleum, Ministry of Health, and Ministry of Industrialization, there may be an opportunity to leverage their combined influence and overlapping needs to coordinate funding requests from the Treasury for cookstove initiatives (S&L programs, procurement, research, testing capacity, or others). The Ministry of Energy has already offered to take the lead on this effort.

The Ministry of Energy, KEBS, CCAK, manufacturers, and others can lobby the Treasury to strategically remove taxes and duties on ICSs and ICS parts. Tax exemptions and incentives should be connected to performance levels designated by the KEBS standard to discourage poor-quality products from entering the Kenyan market. These schemes can also be tied to the Voluntary Endorsement Label, but may be best suited when connected to KEBS standards due to KEBS' relationship to Customs & Border Control under the Kenya Revenue Authority.

Additionally it would be valuable to assess the impact of existing exemptions of imported ICS on the availability, affordability, and accessibility of ICS, as well as the prevalence of poor-quality cookstoves on the Kenyan market. This evaluation would also consider the effectiveness of these exemptions (tied to voluntary performance standards) as an alternative to (mandatory) minimum performance standards for imported stoves.

### Consider Regional Alignment and Coordination Opportunities

Efforts on cookstove S&L are underway in multiple countries, including Kenya, Uganda, Ghana and Nigeria. There is incredible value in learning from others experiences and lessons learned, as well as identifying opportunities for cross-border collaboration where there are common threads or markets. This is particularly important where differences in approaches, regulations, standards, and conformance assessment measures pose barriers to the movement of goods from one country to another within the region.

Opportunities for regional alignment and coordination should be considered – especially with the Uganda National Bureau of Standards, who have developed ICS standards – and can be easily addressed through study tours, or regional workshops to share experiences. Consider inviting neighboring practitioners and policymakers to participate, network, and/or exchange best practices during an independent workshop or any of the planned S&L stakeholder consultation forums. If successful, this could potentially create a network of S&L policymakers and practitioners across regions to sustain an exchange of ideas and best practices.

### Government or NGO Procurement Programs

Procurement programs usually involve coordinating a large-volume purchase agreement (often by organizing multiple interested parties) for products meeting specific technical performance. These programs encourage supplier to introduce new (usually more ambitious) products by reducing risk through the purchase agreements. It also allows buyers to specify types and performance levels of the

products they are willing to buy. Governments and large NGOs interested in ICS can use procurement programs to encourage manufacturers to develop cleaner, more efficient cookstoves. One of the best means to establishing a procurement program and attracting large-volume buyers is an existing quality assurance program that can be easily leveraged.

An Endorsement Labeling program could provide the necessary criteria for a procurement program, for the Government of Kenya or international entities, such as the World Bank. The Endorsement Label and underlying product registry would provide an easy way for buyers to identify clean and efficient cookstoves, as well as a strong network to communicate interest with cookstoves manufacturers and suppliers.

### Local, Regional, or Global Awards Programs

Awards programs are voluntary competitions that demonstrate performance levels of current technology, and highlight innovation that can further push the boundaries of products and companies in the market. They can be similar to voluntary endorsement labeling programs, in that they test and convey product performance levels. Like labeling programs, awards programs are strong platforms to build complimentary market transformation initiatives around, including incentives, procurement, innovation, communications, and capacity building programs.

Awards programs attempt to solve the problem of unclear or missing information on the availability and quality of products on a market. Therefore, they are best suited when there is demand for such information, from entities that can use it to make procurement decisions, and benefit from complementary incentive programs. Awards programs can offer more flexibility than labeling programs and can be adapted to target different sector goals by changing competition design and scope, such as location (e.g. Kenya vs Guatemala, urban vs rural), market scale (e.g. national vs regional), technology (e.g. biomass vs LPG vs all), and objectives (e.g. quality assurance vs innovation), and frequency (e.g. annual vs biannual).

## Annex 1: Stakeholders Interviewed

List of stakeholders CLASP meet with or spoke with during the scoping mission.

Table 1. Stakeholder meeting list

Date	Organization	Individual(s)	Location
14-Nov	Independent Consultant	Joseph Njuguna	Nairobi
14-Nov	Clean Cookstoves Association of Kenya	Myra Mukulu	Nairobi
14-Nov	Kenya Bureau of Standards	Alex Mboa	Nairobi
14-Nov	BURN Manufacturing	Boston Nyer	Nairobi
15-Nov	GIZ	Walter Kipruto Maxwell	Nairobi
15-Nov	Climate Care	Tom Morton	Nairobi
16-Nov	Energy Regulatory Commission	Fenwicks Musonye Nickson Bukachi Pavel Oimeke	Nairobi
16-Nov	Ministry of Energy and Petroleum	Faith Odongo	Nairobi
16-Nov	University of Nairobi	Professor Jacob Kithinji	Nairobi
16-Nov	Ministry of Health	Gamaliel Omondi	Nairobi
17-Nov	Stockholm Environment Institute	Mbeo Ogeya	Nairobi
17-Nov	SNV	Caroline Toroitich	Nairobi
17-Nov	World Bank Group	Richard Hosier	Nairobi
18-Nov	Envirofit	Tim Rump Perminus	Nairobi
18-Nov	Practical Action  Population Services Kenya Clean Cookstoves Association of Kenya	Mattia Vianello Jechoniah Kitale Wawira Nyagah Myra Mukulu	Nairobi
18-Nov	Energy 4 Impact	Godfrey Sanga James Gatimu	Nairobi
18-Nov	Global Alliance for Clean Cookstoves	Daniel Wanjohi	Nairobi
2-Dec	Kenya Industrial Research and Development Institute	Nathan Bogonko	Skype
6-Dec	Ecozoom	Oli Raison	Skype
7-Dec	Berkeley Air  Global Alliance for Clean Cookstoves	Dana Charron Michael Johnson Kirstie Jagoe Chrissy Carmody	Conf Call
8-Dec	Global Alliance for Clean Cookstoves	Daniel Wanjohi	Skype

## Annex 2: Descriptions of Key Stakeholder & Notes from Scoping Mission

### **Kenya Bureau of Standards (KEBS)**

KEBS is mandated to provide standardization and conformity assessment services through: 1) Promotion of Standardization in commerce and industry; 2) Provision of testing and calibration facilities; 3) Product and system certification; 4) Undertaking educational work in standardization and practical application of standards; 5) Maintenance and dissemination of International System of Units (SI) of measurements. KEBS is a statutory body established under the Standards Act (Cap 496) of the laws of Kenya.

Testing is primarily outsourced to KIRDI, who have greater capacity.

KEBS is able to accept proposals for standards for any product, from any stakeholder.

With respect to enforcement of standards, there is overlap between the mandates of KEBS and ERC. If the ERC passes regulation that references standards developed by KEBS, both may technically be mandated to enforce upon said standard or underlying criteria. Both have recognized this overlap and a joint committee has been convened to address it. For the appliance S&L program, KEBS is responsible for testing safety, whereas ERC is responsible for product performance.

In general, however, KEBS enforcement aims to ensure that the KEBS Standardization Marks are applied to certified products, and sampling and testing products to verify that actual performance matches the performance levels submitted for certification happens on a case-by-case basis.

The biggest barriers for KEBS, in general, are consumer awareness and education of the benefits of better products; confidence in the KEBS Standardization Mark; accuracy of actual performance versus stated performance.

### **Energy Regulatory Commission (ERC)**

ERC is mandated to 1) Regulate electrical energy, petroleum and related products, renewable energy and other forms of energy; 2) Protect the interests of consumer, investor and other stakeholder interests; 3) Monitor, ensure implementation of, and the observance of the principles of fair competition in the energy sector, in coordination with other statutory authorities; 4) Provide such information and statistics to the Minister as required; and 5) Collect and maintain energy data; among others. ERC sits under the Ministry of Energy and Petroleum.

A draft regulation for cookstoves has been developed by the ERC, but they are currently challenged with gathering the supporting evidence (data in particular) required to pass the regulation through government. This is reflective of the nascence of the market and limited data availability. This represents a strong start to the process, but demonstrates that further efforts are required to ensure successful and impactful implementation of this regulation. Non-regulatory approaches to moving the cookstove market can help feed into this process over time, providing data and experience before adopting long-term regulation.

### **Ministry of Energy and Petroleum (MEP)**

MEP is mandated to “facilitate provision of clean, sustainable, affordable, reliable, and secure energy services for national development while protecting the environment.” Renewable Energy is one of four technical Directorates under the Ministry with an objective to “promote the development and use of energy technologies, from the following renewable sources: biomass, (biodiesel, bio-ethanol, charcoal, fuel wood), solar, wind, tidal waves, small hydropower, biogas and municipal waste.”

The Ministry of Energy has integrated and prioritized clean cookstove actions within the SE4ALL Plan and is supportive of efforts undertaken by the ERC.

### **Kenya Industrial Research & Development Institute (KIRDI)**

KIRDI is a multidisciplinary institution operating under the Ministry of Industrialization and Enterprise Development, with a “mission to undertake industrial research, technology, and innovation and disseminate findings that will have positive impact on national development.” KIRDI operates the only cookstoves test lab in Kenya with capacity to measure total emissions. KIRDI has partnership with KEBS to do testing for KEBS Standardization Mark and improved biomass cookstoves standard.

### **Clean Cooking Association of Kenya (CCAK)**

CCAK is a fee-based membership association of stakeholders involved in the clean cooking sector in Kenya. CCAK coordinates meetings, advocates on behalf of members and the industry, and attempts to further the goals and activities outlined in the Kenya Country Action Plan. CCAK is operating primarily in accordance with the Country Action Plan as well as inputs from its members.

Most stakeholders believe CCAK provides clear value to them and the sector. Some are willing to pay more in membership fees to increase their value, under the assumption that CCAK needs more capital to increase capacity and impact.

### **Behavior Change Communication (BCC) Team**

The BCC team includes the Global Alliance for Clean Cookstoves, Population Services Kenya (PSK), Practical Action (PAC), and Berkeley Air. The BCC campaign is developing a communication campaign to promote high-performing cookstoves in target regions around Kenya.

### **University of Nairobi**

The University of Nairobi is a test lab in Nairobi with capacity and experience testing cookstoves for thermal efficiency, safety and ambient emissions. They do not have the equipment for testing total emissions according to the ISO test method.

### **Ministry of Health**

Ministry of Health plays an important role as a member of an inter-ministerial committee focused on clean cooking. There may be opportunities for the inter-ministerial committee to strategically aggregate their shared vision of cleaner cooking in Kenya to allocate funds from their budgets (set by the Treasury) toward clean cooking.

### **Energy 4 Impact (E4I)**

E4I works closely with artisanal cookstoves makers, encouraging them to officially register their businesses and improve the quality of their cookstoves. There may be an opportunity to leverage the E4I

network of cookstove artisans to develop and promote the ERC licensing program, which currently references the need for a supply of ICS technicians.

#### **SNV**

SNV helped develop the Country Action Plan and participates in an advocacy role in the clean cooking sector.

#### **GIZ**

GIZ works closely with rural artisan cookstove makers and offers a large network across the country, developed over 10 years.

#### **Joseph Njuguna (Independent Consultant)**

Joseph is a highly experienced S&L expert in Kenya. As an independent contractor, Joseph championed and helped put in place the S&L program for six electric appliances over the past six years, with three additional products currently pending review for inclusion.

#### **Large Manufacturers of Factory-Made Cookstoves**

This list includes, but is not limited to, BURN Manufacturing, Ecozoom, and Envirofit. “Factory-made” describes cookstoves that are improved and manufactured in factories through mechanized process, which increases substantially the consistency or standardization of their product line.

Currently, BURN Manufacturing produces the only locally manufactured factory-made stove, all others imported.



## Annex 3: Additional Findings and Notes from Scoping Mission

### Policy

There is not current tax exemption associated with the KEBS Standardization Mark. In order to give products with a KEBS Standardization Mark tax exempt status, the Ministry of Energy, and the Ministry of Finance would need to be involved.

### Manufacturers

Manufacturers and importers demonstrate great enthusiasm in driving change to the clean cookstove sector. Many are members of the Clean Cookstoves Association of Kenya and are engaged in the policy making process. Some appear eager to showcase and protect their products and help grow the market through S&L, while others are resistant to any unnecessary regulatory burdens or have little confidence that S&L can add value at this time. Most expressed some degree of skepticism about the government's ability to effectively monitor and enforce an S&L program, given limited resources and high prevalence of counterfeit products on the market.

According to some larger manufacturers producing factory-made products, the “appearance” of their stove provided a significant amount of differentiation from traditional cookstoves or artisanal ICS. This “differentiation by appearance,” one manufacturer argued, already accomplished a portion of what a labeling program would aim to provide, which, therefore, may make said labels less valuable to them.

The national ICS market is immature. For example, user-focused cookstove designs have really only been considered in the past 24 months.

Durability is a major design priority because of the demand for it from consumers. This is especially true for factory made stoves, due to the high price of such stoves compared to traditional stoves. Across the cookstoves sector, however, there is no consensus on how to define durability, according to one manufacturer.

Consumer knowledge and awareness of the benefits of clean cookstoves is low.

### Business Models & Supply Chain

Cookstoves are distributed from manufacturers through a variety of channels, including business-to-business, and business-to-consumer. Sales to supermarkets, women's groups, and retailers are much higher in Kenya for some larger manufacturers due to the very high prevalence of microfinancing and mobile lending in the country. Business models, however, differ significantly between companies and appear to be highly dynamic.

As in other countries, transportation of products is a major barrier given their weight and size relative to their price (especially compared to the low cost of traditional stoves or three-stone fires).

### Competition

The ICS market is competitive and players are “jockeying for space in the sector.” This perspective differs quite dramatically from other countries, where manufacturers appear to act more as partners attempting to compete against the market share owned by traditional cookstoves.

## Annex 4: Market Maturity Levels for Optimal Implementation

At the following levels of availability, awareness, accessibility, affordability, and acceptance of improved cookstove by consumers, the market is defined as *Immature*, *Moderate Maturity*, and *Mature*. Accordingly, the recommended policy and program steps outlined in Figure 3 should be taken.

Table 2: Market maturity levels for optimal implementation

	Short-term Immature	Mid-term Moderate Maturity	Long-term Mature
Availability	Moderate	Moderate / High	High
Awareness	Low	Moderate	High
Accessibility	Moderate	Moderate / High	High
Affordability	Moderate / High	High	High
Acceptance	Low	Moderate	Moderate