

# Social Marketing Plan for Indonesia Clean Stove Initiative Results Based Financing Pilot Program

January 2015

EPA CLEAN STOVE INITIATIVE KNOWLEDGE EXCHANGE SERIES

## Background Analysis

Indoor air pollution (IAP), caused by the burning of solid fuels—including biomass (mainly firewood and agricultural residues), animal dung, and coal—in traditional cookstoves is a leading risk factor attributed to mortality and burden of disease. More than half of the world's population still relies on solid fuels for cooking and heating. In Indonesia, where about 40 percent of households (located mainly in rural and some peri-urban areas) still depend on biomass to meet their daily cooking needs, household burning of traditional biomass for cooking is a major health-risk factor. IAP caused by burning traditional biomass is responsible for an estimated 45,000 premature deaths each year. Women and children are particularly affected since they tend to spend more time in the kitchen or cooking area. Although the share of households using biomass has declined slightly in recent years, some 24.5 million households still use biomass as their primary cooking fuel.

The widespread use of biomass can be attributed mainly to the lack of access to more advanced fuels and stoves and the affordability of such products. To reduce the IAP problem in Indonesia, the Ministry of Energy and Mineral Resources (MEMR) and the World Bank jointly initiated the Indonesia Clean Stove Initiative (CSI), a four-phase program designed to increase household access to cleaner and more efficient cookstoves. Launched in 2012, the Indonesia CSI program is currently in its second phase (phase II), which focuses on piloting the results-based financing (RBF) approach. The main objective of this document is to develop a social marketing roadmap to promote commercially viable clean cookstoves in Central Java, as well as document lessons learned for the scaled-up program planned for phase III.

The market survey conducted among peri-urban households outside Yogyakarta confirms that, even though households would like to reduce the smoke emitted from the burning of solid cooking fuels from their kitchen environment, most are unaware of the associated health risks.<sup>1</sup> The findings also reveal that the vast majority of households in the surveyed area strongly desire to change their cooking environment. However, this desire is not linked to the health threat from IAP or inhalation of smoke emitted from burning of solid fuels. Rather, it is related to the soot deposited on the kitchen walls, ceiling, and pots and pans. In addition, switching to liquefied petroleum gas (LPG) is low priority for how households would like to change the cooking environment. These findings suggest that biomass-using households will continue to use biomass in an unhealthy environment, confirming the need for public awareness-raising and education campaigns to help them understand the health threat from IAP caused by the inefficient burning of biomass fuels using traditional cookstoves.



<sup>1</sup> The market survey was conducted in July–October 2013.



Our proposed approach to helping households dependent on traditional biomass cooking energy access cleaner cooking solutions is to introduce and promote their adoption and use of clean biomass cookstoves. In terms of marketing, these are new products, meaning that most households do not know what a clean cookstove is and thus cannot visualize it. The challenge is to create a way to introduce the clean stove products to ensure that households (i.e., market consumers) can recognize them as such. The key strategy that we use in our marketing plan, outlined below, is brand recognition. Although we cannot promote specific stove brands, we use program-endorsed, clean stove logos, which are affixed to all qualified stoves, to ensure that consumers can identify clean stoves.

## Market Overview

The main target group of the Indonesia CSI pilot program consists of women living in Central Java and Yogyakarta—areas where the pilot is being implemented—who currently use traditional biomass cookstoves. Because women bear higher risk of exposure from smoke compared to other household members and are often the family’s key health-care providers, selecting them as the target group provides a more direct way to raise household awareness of the IAP problem from cooking smoke and the proposed solution. The market survey among peri-urban households outside Yogyakarta reveals that 96 percent of cooks in households are women. Women who still use biomass for cooking can be classified into two mutually exclusive groups: (1) those who use only biomass for cooking or “single-fuel” users and (2) those who use both biomass and LPG for cooking or “dual-fuel” users. Women who use dual fuels can be further classified into three groups: (1) those who use biomass to boil water and supplement LPG for cooking, (2) those who use LPG to supplement biomass, and (3) those who use only biomass to boil water.

## Customer Profile

Analysis of the survey reveals that biomass fuels and cookstoves are more popular among older cooks, while younger cooks prefer LPG. It appears that younger people are more attracted to more convenient and modern fuels than older people, who tend to be more accustomed to traditional cooking methods. Single-fuel (biomass only) users tend to be older than dual-fuel (biomass and LPG) users. The average age of biomass users is 48 years, compared to 45 years for dual-fuel users. Single-fuel (biomass-only) households not only tend to be older than dual-fuel households but also poorer; the average monthly cash income of biomass-only households is estimated at IDR 1.4 million, compared to 2.0 million among households that use both LPG and biomass. Based on households’ monthly income and exposure to higher-priced LPG stoves, it is expected that dual-fuel households may be better able to afford higher-priced clean biomass cookstoves. The survey also shows that biomass-only users tend to have a lower level of educational attainment. Only 21 percent of single-fuel users had completed high school, compared to 32 percent of dual-fuel users.



Results of the household survey show that the public is generally unaware of the health risks associated with smoke emitted from the burning of biomass cooking fuels. Among respondent households, 35 percent disagreed with the statement that smoke from cooking is a big health problem, compared to only 6 percent that strongly agreed. Moreover, most of the surveyed households do not believe cooking with biomass makes breathing more difficult, and three-quarters agree that food tastes good when cooked with firewood. The survey findings also reveal that the majority of households have a strong desire to change their cooking environment (i.e., based on the observed soot deposited on their kitchen walls, ceiling, and pots and pans). But switching to LPG as a solution to improving the cooking environment was selected as a first priority by only 8 percent of the households surveyed. This finding provides a key insight into the potential drivers of household adoption and how they might be used to convince consumers to buy and use the new clean cookstoves.

The survey confirms that most biomass users collect, rather than purchase, the fuel. In addition, a larger proportion of single-fuel users collect biomass compared to dual-fuel users (i.e., 82 percent versus 76 percent). Furthermore, most consumers regard biomass fuel as cheap and abundant. About 79 percent of respondent households disagreed that firewood is expensive to use for cooking. Similarly, 74 percent disagreed that firewood is getting harder to collect. Moreover, about 70 percent of the surveyed households disagreed that preparing or cutting wood for firewood is a burden for the family. Finally, 67 of the surveyed households disagreed that firewood is hard to obtain in the market, and 58 percent disagreed that cooking with firewood is inconvenient. These findings suggest that the financial benefits and time savings obtained from using more energy-efficient, clean stoves would not be sufficient motivation for consumers to switch to clean stoves. Therefore, the application of rational behavior to motivate or convince consumers may need to be used in conjunction with other behavioral-change techniques (e.g., awareness-raising activities and education on the health threats linked to cooking smoke and direct advice from community health workers).

With respect to decision-making on stove purchases, the survey results reveal that women are the key household members that decide when to replace an older stove and which one to buy. A woman can independently decide to purchase a lower-cost biomass stove but must consult and/or jointly decide with her husband on the purchase of a more expensive stove. This finding provides further evidence that women are the target audience for the new clean cookstoves

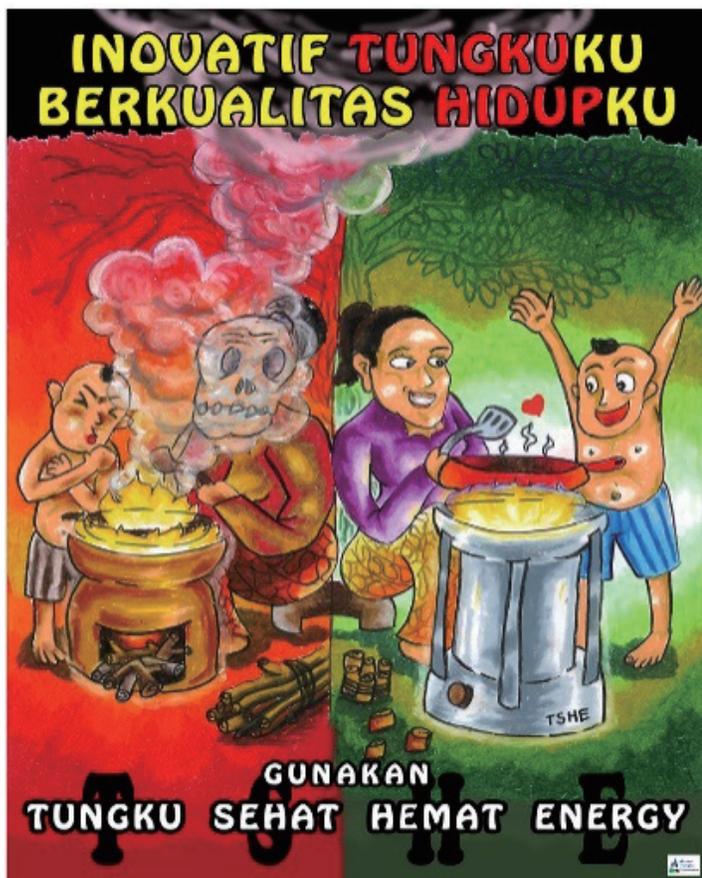
and that it is also critical to involve men.

## Competitors

Four types of traditional biomass cookstoves currently being sold and used by consumers are targeted for replacement by the CSI program—endorsed clean stoves. These traditional competitor stoves are the (1) “Keren,” (2) one/two pothole fixed stove, (3) stove made of stone, and (4) three/five stones. The Keren stove is the most important competitor to the new clean stoves. Considered the most popular type of stove in Central Java, the Keren is inexpensive, costing only about US\$1; however, it is not durable, lasting about 16 months on average. Households with the Keren stove tend to be slightly poorer than those without it. Among households that own and use the Keren, the average monthly income is estimated at IDR 2.264 million, 0.411 million less than that of households that do not own and use it. Cooks in households with the Keren stove tend to be slightly older (i.e., averaging 47 versus 45 years of age). However, average family size and total number of family members eating meals in the household are the same for both Keren users and non-users, at four persons per household.

The one/two pothole fixed stove—the second most important competitor to the new clean stoves—can be classified into self-built fixed stoves made from either (1) mud and brick or (2) brick and cement. Among the 22 percent of households that own self-built fixed stoves made from mud and brick, 15 percent own the two-hole version, while 7 percent own the one-hole version. Compared to all other stove owners, those who own self-built mud and brick stoves are slightly poorer, with an average monthly household income of IDR 2.140 million versus 2.494 million, and older, with an average age of 47 versus 45 years; however, all households cook for a total of four persons on average.





Self-built fixed stoves made of brick and cement are considered more durable than the mud-and-brick type due to the use of cement as the main material. But owing to the cost of cement and need for more skillful builders, the proportion of households using this stove type is estimated at only 9 percent. Like the mud-and-brick, self-built fixed stoves, most brick-and-cement types have two potholes. The average monthly income of households that own and use the brick-and-cement type is US\$290, \$54 higher than that of non-user households. Also, the average age of cooks in households that use the brick-and-cement, self-built fixed stoves is slightly higher than that of non-user households (i.e., 47 versus 45 years old). However, the average number of household members consuming food at home is the same, at four persons.

Beyond competition from traditional biomass stoves, lack of knowledge and adherence to long-held beliefs and traditions comprise perhaps the second largest “competitor” to adopting and using the new clean stoves. Our survey confirms that the general public is unaware of the health threat linked to biomass cooking smoke. As mentioned, three-quarters of the surveyed households agree that food

tastes good when cooked with firewood. Therefore, public education and aware-raising campaigns, along with other social marketing activities, are quite critical to changing ingrained beliefs and traditions.

### *Social Marketing Objectives*

The main objectives of our social marketing efforts are threefold. The first objective is to raise public awareness and educate consumers about the danger of smoke emitted from burning biomass fuels in traditional biomass cookstoves. The second objective is to introduce clean biomass stoves that have passed the designated stove-testing laboratory’s requirements for stove emissions, efficiency, and safety. It is considered that these clean stoves, which are endorsed by the CSI program, can provide a cleaner living environment than traditional biomass stoves, save fuel, and meet safety requirements. Finally, the third objective is to convince consumers to replace traditional biomass stoves with the clean cookstoves endorsed by the CSI program. Consumers can distinguish program-endorsed clean cookstoves from traditional biomass stoves by observing the endorsement logo affixed to the side of all qualified clean cookstoves.

It should be noted that each specific brand of clean stoves endorsed by the CSI program will be promoted by its respective Market Aggregator (MA). In this respect, the program will focus only on recognizing all clean cookstoves endorsed by the CSI program.

### *Marketing Strategy (Mix)*

To meet these social marketing objectives, the CSI pilot-program promotion effort consists of two major activities.<sup>2</sup> The first is to raise public awareness and educate the public about the danger of smoke emitted from the burning of biomass fuels using traditional biomass stoves. The second is to promote the use of clean cookstoves, as distinguished by the program-endorsed logo affixed to all clean stoves sold in the market. In short, we communicate with consumers on the problem and identify its cause. We then introduce the solution by encouraging consumers to replace traditional biomass stoves with program-endorsed clean stoves. The emphasis is on making sure that consumers can correctly identify program-endorsed clean stoves simply by viewing the CSI endorsement logo. Endorsement logo recognition is emphasized because (1) consumers are not able to visualize what clean cookstoves look like, (2) clean cookstoves come in various shapes and designs, and (3) each MA is responsible for promoting its own brand.

<sup>2</sup> In the commonly known “4P” marketing mix, these related activities fall within the Promotion category (figure 1).

## Product

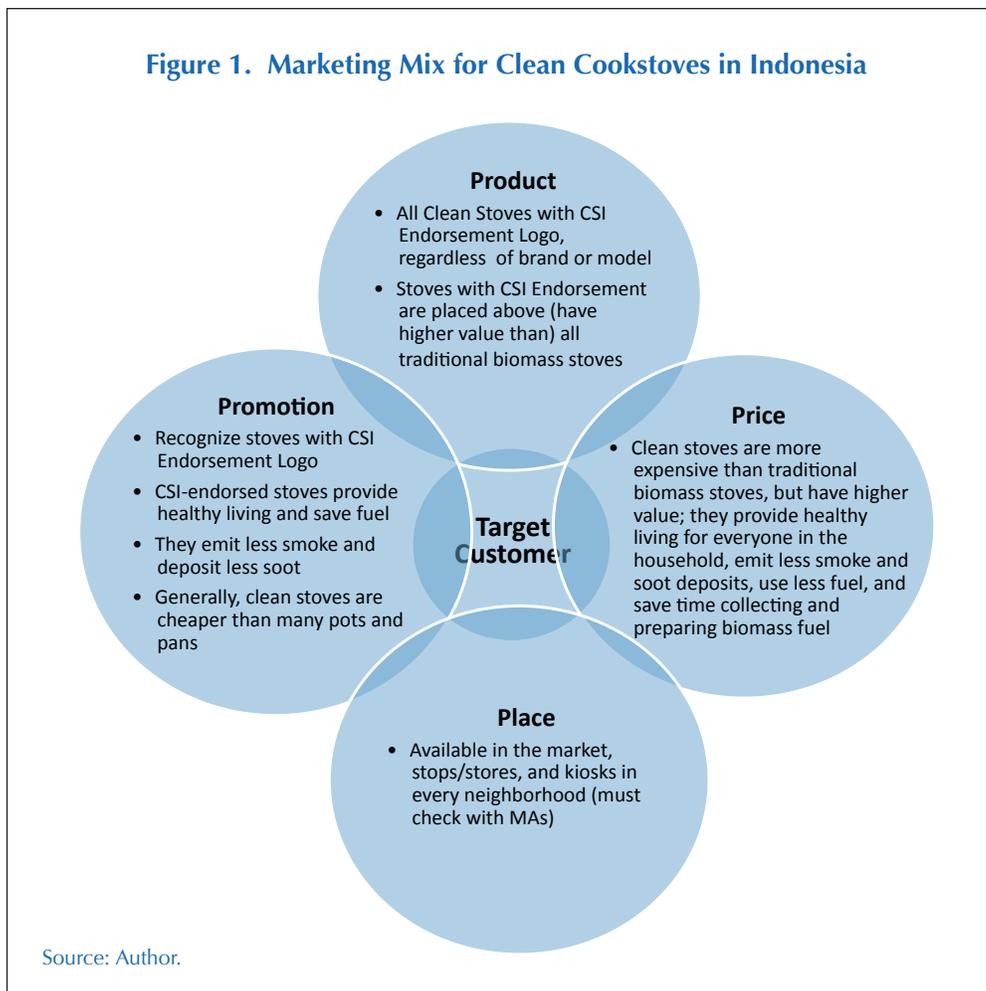
In the context of our marketing efforts, “product” refers to all CSI program–endorsed clean cookstove products (figure 1). At the program–promotion level, “clean stove product” refers to all clean stoves that receive endorsement since each MA is responsible for marketing its own brand. On the contrary, the CSI program is responsible for promoting all clean stoves that receive endorsement from the program. Since clean stoves are more expensive than most traditional biomass stoves, our promotion strategy, described below, is to place all program–endorsed clean stoves above all traditional biomass stoves. All program–endorsed clean stoves have higher value than all other biomass stoves. The main justification is that, as a result of thorough testing, these stoves have proven to be significantly better than the baseline stoves in terms of particulate matter (PM) emissions, carbon monoxide (CO) emissions, and thermal efficiency.<sup>3</sup> In addition, all program–endorsed clean stoves are made of metal, have passed safety requirements, and are expected to last at least one year. They

resemble modern home appliances when compared with traditional biomass stoves, which are made of terracotta, clay and cement, cement and brick, or stone.

## Price

Each MA is responsible for setting the price and/or pricing policy of its own brand of stove. However, it is expected that the Results–Based Financing (RBF) subsidy provided by the program to each MA and CSI marketing efforts carried out by the program will have some impact on the overall stove costs and ultimately the retail price of program–endorsed clean stoves. In any case, it is certain that retail prices of all program–endorsed clean stoves will be significantly higher than those of most traditional biomass cookstoves. To justify the higher price, the CSI program will communicate with consumers as part of its promotion campaign to reinforce the notion that program–endorsed clean stoves have positive value (e.g., provide healthy living), compared to all traditional biomass stoves (figure 1).

**Figure 1. Marketing Mix for Clean Cookstoves in Indonesia**



<sup>3</sup> Testing results are available in the public domain.



- (i) Raise awareness and educate consumers about the danger from indoor air pollution (IAP) created by burning biomass fuel in traditional cookstoves,
- (ii) Introduce clean cookstoves (new stove products) as the solution, and
- (iii) Ensure that consumers can correctly identify program-endorsed clean stoves simply by viewing the program-endorsement logo affixed to qualified stoves. While similar to brand-recognition promotion campaigns, the recognition emphasis of this approach is on the program-endorsement logo placed on all qualified clean stoves.

After setting up our promotion objectives, the next steps are to ask what promotion activities we will carry out, where we will implement them (area/scope of coverage), and how we will carry them out. Since the CSI pilot program involves a broad range of stakeholders (including the Directorate of Bioenergy of the MEMR, the World Bank, Yayasan Dian Desa [YDD], Renewable Energy, Environment, and Solidarity Group [GERES], and several MAs), two final questions are who will conduct which activities and who will coordinate them.

**What?** Promotion activities usually involve communicating with our target audiences. Therefore, the simple question is what are we communicating to them? The simple answer is the danger of IAP, the introduction of new stove products as the solution, and ensuring that they can recognize program-endorsed clean stoves. The household survey has confirmed that fuel and time savings are not the main drivers of household adoption and thus are insufficient reasons to convince consumers to switch to program-endorsed clean stoves. Therefore, we need to combine rational behavior (e.g., recognition of fuel and time savings and less observed soot deposits) with other behavioral-change techniques (e.g., raising awareness that the health threat from cooking smoke exists, promoting education, and involving direct advice from community health workers) to convince consumers so they will be motivated to switch to program-endorsed clean stoves.

**Where?** We will communicate with our target audiences at both the regional and community levels. At the regional level, the goal is to reach as many potential household consumers as possible; at the level of selected local communities, the aim is to reinforce these messages through direct contact (box 1).

**How?** At the regional level, the program will communicate with target audiences through mass media, including

## Place

The CSI program is based on the market mechanism and has no direct influence on where and how the MAs sell their stove products. However, it is expected that the program will indirectly influence the MAs' decision on where to place their stoves (e.g., in local shops/stores, kiosks, and markets) in order to reach as many customers as possible. The awareness-raising and education campaigns, which are part of the promotion activity, will cover the Central Java region where the pilot program is being implemented. It is expected that the area coverage of campaign activities will influence each MA to place its own stove brand in the same area where such activities are occurring. However, we recognize that this is a pilot; as the first step for selling stoves, some MAs may still rely on existing distribution and retail networks or establish their own. We should therefore consult with the Market Facilitator in order to inform the public of where they can shop for and purchase program-endorsed clean stoves.

## Promotion

The fundamental objectives of the CSI promotion activities are to:

newspapers, TV, radio, billboards, posters, and competition to produce promotional material (video and print media). At the community level, we will rely on social-support techniques, including mobilization of local government officials to introduce the CSI program, engaging community health workers to raise awareness and educate our audiences in the selected communities, and conducting cooking demonstrations and road shows in the selected communities and local markets (box 1). It is important to note that we cannot carry out promotion campaigns in every community. However, to reach wider audiences, we should invite the local media to record and air or advertise the events for TV news and/or newspaper.

**Who?** As mentioned, the Indonesia CSI program encompasses a variety of organizations, including the Directorate of Bioenergy, the World Bank, YDD, GERES, the Market Facilitator, and several MAs. Therefore, it is important that each organization has specific roles and responsibilities. It is clear that each MA is responsible for promoting its own brand and all other organizations are responsible for raising public awareness and promoting all program-endorsed clean cookstoves. However, close coordination among the program supporters and between the program supporters and each MA is critical to ensure that promotion activities are implemented effectively and efficiently.

**Leading and Coordinating.** The Indonesia CSI Program Management Office (PMO), set up within the Directorate of Bioenergy to oversee pilot-program implementation, will lead and coordinate all promotion activities. It is important that the PMO, which can represent the government and overall program, contact mass media and local government officials to convey the promotional messages.

### Box 1. Communicating with Target Audiences to Promote Clean Stoves

Regional Level
<ul style="list-style-type: none"> <li>• Mass media (TV, radio, and newspapers, including talk shows, interviews, news, and advertisement)</li> <li>• Billboards and posters</li> <li>• Competition to produce campaign materials</li> </ul>
Community Level (Selected)
<ul style="list-style-type: none"> <li>• Mobilizing local government officials to introduce CSI program</li> <li>• Engaging local health workers in awareness-raising and education campaigns</li> <li>• Conducting cooking demonstrations and road shows in communities and markets</li> </ul>

Source: Author.

Promotion Activities. At both the regional and community levels, the promotion activities implemented must be quite focused and aim at meeting our three social marketing objectives (tables 1 and 2). Simply stated, we will inform consumers about the cookstove smoke problem, introduce a solution, and introduce clean cookstoves. The strategy to introduce clean cookstoves focuses on a brand recognition approach, which, in our case, is the program-endorsed clean cookstove logo. Each MA will promote its own brand, but every qualified stove sold under the program will have an endorsement logo affixed to its side. By promoting all program-endorsed stoves, we remain neutral.

With respect to the timing for implementing each of these promotion activities, the PMO will coordinate with YDD,

**Table 1. Promotion Activities: Regional Level**

Media activity	Lead agency	Supporting agency
<ul style="list-style-type: none"> <li>• Radio/TV talk show</li> <li>• Press release</li> <li>• Advertisement or public-service messages via radio and TV (e.g., air short video clip)</li> <li>• Contact news media to publicize other promotion activities, including:               <ul style="list-style-type: none"> <li>o Workshops to educate local health officials;</li> <li>o Cooking demonstrations in selected villages and local markets; and</li> <li>o Meetings with village officials to raise awareness and introduce CSI program and program-endorsed clean stoves.</li> </ul> </li> </ul>	PMO/Directorate of Bioenergy	<ul style="list-style-type: none"> <li>• YDD/Alliance to provide technical information, implement selected activities, and facilitate information dissemination.</li> <li>• Market Facilitator to provide information linking with MAs.</li> <li>• Additional consultants may be hired with World Bank funding support.</li> </ul>

Source: Author.

**Table 2. Promotion Activities: Community Level**

Media activity	Key implementers/responsibilities
<ul style="list-style-type: none"> <li>• Conduct workshops to educate and raise awareness of local health offices</li> <li>• Conduct public awareness, introduce CSI program and program-endorsed clean stoves in selected villages (also invite media to participate)</li> </ul>	<ul style="list-style-type: none"> <li>• Directorate of Bioenergy/PMO send invitation and coordinate local government agencies</li> <li>• YDD implements</li> <li>• Market Facilitator may suggest focused areas</li> </ul>
<ul style="list-style-type: none"> <li>• Conduct road shows and cooking demonstrations (e.g., a mobile cooking demonstration focused on traditional market days (“hari pasaran”) or particular days when large traditional markets are in operation and/or a rented kiosk in selected villages to conduct cooking demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• GERES, with support from YDD, conducts road shows and cooking demonstrations</li> <li>• MAs</li> <li>• Market Facilitator coordinates MAs</li> </ul>
<ul style="list-style-type: none"> <li>• Print posters, CSI program logo, and program-endorsed clean stove logo and distribute to PMO and MAs. For example, print a poster with a program logo and the message “We sell clean stoves with program-endorsed logo;” the poster can be given to the MAs for distribution to their retail shops/stores. Recognition of the program-endorsement logo is key to consumers’ ability to identify clean cookstoves in the market.</li> </ul>	<ul style="list-style-type: none"> <li>• YDD or additional consultants with World Bank funding support</li> </ul>

Source: Author.

GERES, and especially the MAs to ensure that every MA has the opportunity to participate directly in the promotion activities and/or reach out to the community and are visible in the community and media.

## Conclusion

The clean cookstoves that we are promoting are completely new products to consumers, and each brand has its own design, shape, and look. The marketing activities carried out by the CSI program cannot promote any specific design, shape, and look. Rather, the program emphasis is on promoting stoves that pass the testing requirements of program-designated laboratories. As a result, the CSI program has chosen to market and promote clean cookstoves using consumer recognition of the program-endorsed, clean cookstove logo, which is affixed to all qualified clean stoves—a strategy similar to the brand-name recognition approach.

Providing a solution to IAP caused by the burning of biomass in traditional cookstoves—one of Indonesia’s least recognized, serious public-health issues—requires changing long-held traditions and ingrained cooking practices and habits. As a result, marketing and promoting clean cookstoves, compared to introducing other new products to the market, tend to be more complex. To ensure the effectiveness of our marketing and promotion activities, the planned engagement with consumers and stakeholders consists of implementing various activities based on empirical evidence and behavioral-change frameworks. These activities include (1) launching campaigns to shape public knowledge, (2) providing community and social support, (3) offering financial incentives in the form of RBF subsidy, (4) providing stove choices by ensuring that consumers have several brands and models/types of clean stoves from which to choose in the market, (5) establishing clean-cookstove standards, and (6) empowering women’s decision-making ability to purchase clean stoves.

This note was written by Voravate Tuntivate with inputs from Yabei Zhang and edited by Norma Adams. The findings, interpretations, and conclusions are those of the authors and do not necessarily reflect the views of the World Bank or funding agencies.

Photo Credit: The Indonesian Clean Cookstove Alliance