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# BEHAVIOR CHANGE APPROACHES FOR CLEAN COOKING

## BRIEF 2: STRATEGIES FOR ENABLING ACCESS TO APPROPRIATE CLEAN COOKING TECHNOLOGIES: SETTING UP THE SYSTEM

### DEFINING THE PROBLEM

- ▶ In addition to financial barriers, physical access to modern energy services and solutions is a continuing challenge for large sectors of the market in low and middle-income countries [for more detail on liquidity constraints, see Brief 3 in this series].
- ▶ Often, the supply chains of clean cookstoves and fuels are unreliable, under-developed, and lacking investment and coordination, particularly in remote rural communities. This leads to restricted or sporadic availability, or absence, of clean cooking technology and/or the required fuel at an affordable price. These supply chain challenges are a result of several factors including:
  - To date there has been limited investment in cookstove enterprises. Under-developed markets make it difficult to create cost-effective businesses. Start-up funds are critical to allow businesses to take economic risks, test business models, and build a sustainable market, especially when promoting a new technology to capital-constrained consumers.
  - Unless similar products are already being manufactured locally, production of new technologies requires the establishment of a collaborative network of parties with unique roles. This takes time, investment, and coordination with all supply chain agents, and can easily break down if the market does not quickly prove to be viable.
  - In most situations, new cooking technology continues to be a 'push' product, which requires innovative marketing to increase demand. Due to liquidity constraints, remote communities and entrenched cultural cooking behaviors, providing access to an affordable cooking technology desired by these consumers while making a profit is particularly challenging.
  - Limited effective and efficient distribution networks can immobilize the supply chains. Poor infrastructure resulting from a scarcity of well-maintained road and rail networks can make transportation of new technology difficult and expensive.



Duke University researcher delivers an improved stove in rural Uttarakhand, due to the lack of a supply chain.

Photo credit: Duke University

### POTENTIAL SOLUTIONS

Three USAID|TRAction-funded research projects tested a range of behavior change approaches, with the ultimate goal of increasing the acquisition and correct use of clean cookstoves and fuels [see Introductory Brief in this series]. Although lessons related to maximizing investment are beyond the scope of these projects, the results do provide several lessons on methods to address poor access to appropriate clean cooking technology and/or the required fuel.

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## 1. Appropriate Technology

OVERVIEW	RECOMMENDATIONS	PROJECT EXAMPLES
<ul style="list-style-type: none"><li>▶ The foundation of a successful supply chain is having a product that people value, need, and have the means to pay for. It is therefore essential to identify a clean cooking technology and/or fuel that not only has documented good performance and durability in the field, but is also culturally compatible, accepted, and desired by the target market.</li></ul>	<p>Implement innovative market research methods to establish consumer needs and preferences in all market segments.</p> <p>Use this information to guide the selection of the clean cooking technology to be promoted in a community.</p>	<p>The Impact Carbon team selected four cookstoves based on performance, availability, durability and cost, as well as fuel used by the target market. These were then tested through focus groups and in-home visits to identify the technology best suited to the consumers' needs and aspirations. Each participant was asked to rank the stoves in order of preference. These rankings were then collated and used to select a stove to promote.</p> <p>Experiments carried out by the Duke University team showed that providing consumers with a choice of technology and exploring what consumers wanted, rather than assuming their preferences, was very important. The team observed great variation in the attributes of a cookstove that consumers valued most. Pilot studies showed a high level of interest in an electric coil stove, which was not initially considered for the study.</p>
	<p>Consider the extent and types of fuel available in target communities when selecting a stove to sell.</p> <p>If the intervention uses a fuel type or form that is not easily available, consider if its advantages are offset by the costs of setting up a new fuel system.</p>	<p>The project led by PATH found that poor access to wood, appropriately sized for use in the Top-Lit UpDraft (TLUD) gasifier cookstove, was one of the primary barriers to sustained and consistent use of the stove after purchase. The researchers found that use of the TLUD actually increased when suitably processed fuel was made available.</p>

## 2. Transportation of Products and Provision of Services

OVERVIEW	RECOMMENDATIONS	PROJECT EXAMPLES
<ul style="list-style-type: none"><li>▶ The logistics and costs of transporting not only the final product to the consumers but also the materials to make the stove are important considerations when designing any stove program. Consumers often live in remote communities with no established supply networks; unless this is recognized and addressed, stimulating cookstove demand on its own will have minimal programmatic impact.</li></ul>	<p>Consider the cost of transportation at project outset, as this can contribute significantly to implementation costs and can often result in a more expensive product.</p>	<p>The Impact Carbon team was able to decrease distribution costs by organizing end consumers in a central location, at which point a consumer would pick up the stove and take it back to his or her house.</p>
	<p>Establish that there is a feasible means of transportation that exists or can be created at project outset. In remote communities, this might require drawing on established supply networks for other household products.</p>	<p>The Impact Carbon team established a transportation chain for their project in Uganda. They found that it was cheapest to transport large quantities of cookstoves from the point of importation to the project site warehouse. Using motorcycle taxis, the team was able to inexpensively and effectively disperse smaller quantities of cookstoves.</p>
	<p>Increase investment in complementary infrastructure (roads, electricity, retailer or maintenance networks, credit facilities) to maintain and develop supply chains in rural areas.</p>	<p>The Duke team found that even though awareness of new cooking technology in rural India is increasing, stove supply is fragmented and sparse. The absence of any local supply chain for clean cookstoves at the project location caused major delays and the team was forced to simultaneously develop a stove supply chain from the ground up.</p>
	<p>Guarantee affordable access to maintenance, repair, and replacement services for all consumers.</p>	<p>The Duke team recognized the challenges associated with providing repair services in remote locations, but concluded that an effective maintenance program is vital for continued demand and use of the technology.</p>

## FUTURE STUDY PRIORITIES

Further study is required to explore the following questions across different market segments:

- ▶ What impact does involving women at strategic points along the cookstove supply chain have on sales and use?
- ▶ Would a 'household package' (including items such as cookstoves, water filters, bednets, latrines, etc.) be a cost effective way of increasing access for the rural poor? With several products included, would this promote the establishment of financing options and dissemination channels in areas previously considered to be financially or logistically unviable?

## TRACTION PROJECT OVERVIEW

The Translating Research Into Action (TRAction) Project, funded by the U.S. Agency for International Development, focuses on implementation science—which seeks to develop, test, and compare approaches to more effectively deliver health interventions, increase utilization, achieve coverage, and scale-up evidence-based interventions. TRAction supports implementation research to provide critically-needed evidence to program implementers and policy-makers addressing maternal and child health issues.

For more information on the TRAction Project:  
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