

From Cleaner Cookstoves to Clean Cooking Thinking beyond technology to a systems approach

This brief is intended for everyone who is concerned with the wellbeing of the majority of people in Kenya who use traditional methods of cooking/fuels. About 15,400 women and children die annually in Kenya due to indoor air pollution mainly from smoky kitchens. This overview is for those who wish to understand better the relationship between cooking technologies/fuels and what impact it has on other areas of development. The details include the importance of a holistic approach in addressing cooking energy on demand and supply and the need for active participation of both the public and private sectors. This brief calls for everyone to act now.

Focus on cooking rather than cookstoves

Biomass accounts for 68% of total energy consumption in Kenya. Almost all households in rural areas depend on firewood and 82% and 34% of urban and rural households, respectively, depend on charcoal for cooking and heating purposes. Several people are engaged in production, transformation, transportation and sale of wood and charcoal, making them important sources of income in rural and urban areas. As a result, stocks of woody biomass are diminishing, exacerbated further by poor management and utilization in unsustainable ways. Use of cleaner cookstoves is one of the options to reduce wastage in fuel and emissions.



The most common way to address this problem has been to promote the dissemination of more efficient biomass cooking technologies. However, by focusing on technology, many other important aspects of cooking are neglected, such as multiple fuel choices, variety of cooking practices, societal and cultural norms, spillover effects related to cooking, such as space heating and insect repellent. As such, we call for initiatives that focus on 'clean cooking,' where it is not just about having the technology, but using it too; thereby adopting a systems approach to improving cooking practices and harnessing the cross-sectoral linkages.

Cookstoves and fuels

More efficient biomass cooking technologies are often referred to as 'improved' or 'cleaner' cookstoves. The first refers to efficiency while the second implies reduced health risks and climate impacts. The Global Alliance for Clean Cookstoves (GACC) is working to achieve consensus on an international system for rating stoves based upon four-tiered performance categories: fuel use and efficiency, total emissions, indoor emissions and safety. For the purposes of this paper, we follow the GACC's preference for using the term 'cleaner cookstoves.'

In the past years, progress has been made in disseminating cleaner and more efficient cooking technologies for biomass utilization in order to move people away from cooking on inefficient stoves or the traditional three-stone fire. Currently, a number of programmes, projects and private investments (GIZ EnDev Kenya, Envirofit, Burn Manufacturing, Ezy Life, Multilink, GVEP-DEEP programme among others), have been initiated to address issues surrounding cooking energy with a focus on cooking technology.

Despite all these initiatives, only about 24% of the country's approximately 6.4 million rural households have been reached. Many people

without cleaner cookstoves still do not know where to get them, although they often desire to acquire them. This continues to contribute to unsustainable harvesting of biomass with negative impacts on the environment. Meanwhile, almost no interventions address fuel issues.

Holistic approach towards clean cooking

There is a strong relationship between cooking energy and other development sectors including agriculture, education, health, water and environment, among others. Clean cooking has an impact on improved productivity and well-being of the rural and urban communities. The end result would be poverty eradication and contribution to sustainable development.

However, for many years cooking energy has been considered separately from the perspective of individual sectors, either from an energy, a forestry, a health or even nutritional angle. Actors in these sectors usually do not collaborate, which might be the reason why the uptake of clean cookstoves has been so slow over the past decades. Looking at the impacts of clean cookstoves on a multitude of facets of human well-being, it is obvious that a holistic approach is required to speed up their dissemination rates.

Box 1. GIZ EnDev Kenya

GIZ EnDev Kenya is one such programme where clean cookstoves are being mainstreamed in other sectors. Partners are supported to include stoves related activities in their day to day work. For example:

- Health – mainly involves HIV infected and affected persons. The main aim is to encourage people to buy and use cleaner stoves so that they need less time for firewood collection, reduce workload and avail warm meals for the sick. HIV infected and affected people are encouraged to adopt manufacture and sale of stoves as an income generating opportunity, either for the caregivers or support groups.
- Education – promotion of improved cook stoves (ICS) in schools to help children get their meals on time and reduce the need to carry firewood to school everyday (in some schools) and to ensure that meals are properly cooked for better health.
- Water Sector – Partnering with GIZ – Programme on Water Resource Management Authorities (WRMA). Through WRMA stove promotion has been introduced to a number of Catchment Conservation Associations members as a conservation strategy.
- Agro-industries – mainly tea and coffee factories. Partnership with KTDA has supported introduction of cleaner cookstoves to all contracted farmers and workers in various factories. EnDev currently works with about 12 factories, and this initiative has released a significant amount of firewood formerly used in household cooking for tea drying within the factories. Through coffee factories, many farmers are easily reached hence increasing the programme's outreach.

Challenges to thinking in terms of clean cooking

Low awareness and limited market development are two key challenges that have hindered the promotion of clean cooking practices and technologies.

People matter

Clean cooking is basically a new concept for the majority of people in the rural and urban areas; often it is not perceived as a priority because of the way they have lived for decades. Many people have other priorities such as having adequate food, health issues and education for children. They are also not aware of all the negative impacts when using the three-stone fire. This makes it difficult to sell the concept of clean cooking.

Markets matter

In Kenya (and probably most African countries), there is a rather fragmented market for cooking energy devices. While in urban and peri-urban areas households have a choice of different preferred energy and cookstoves, in rural areas firewood still remains the only affordable energy source. As opposed to urban areas where charcoal is the main source of cooking fuel and most households use improved cook stoves such as the Kenya Ceramic Jiko, most big players are not willing to invest in rural areas due to the risk of consumers not being able to pay for the services.

In addition, especially since the introduction of the carbon market, NGOs and private entrepreneurs have tried to address these issues by distributing (often imported) stoves free of charge or at subsidized prices. So far, market penetration by this business model has not been very deep, but has, however, distorted the market in some regions. Even though the impacts on health, environment and the local economy of cleaner cooking stoves are quite obvious, many players in other development sectors often do not know what and how they could integrate cleaner cook stoves into their work while many might not be aware of the products available in the market.

The way forward

In order to overcome these challenges, we propose a holistic approach to clean cooking that focuses on four key elements:

Value chain approach: The value chain approach is a proven methodology to optimize income from a given product, such as cleaner cookstoves. Analyzing the different stages along the value chain – from initial product conception to the provision of inputs, to primary production, to intermediary trade, to processing, to retail and onto final consumption – can help to identify where value can be maximized and where barriers need to be addressed.

Capacity building: Cookstove interventions have tended to focus on improving production capacity. This has been at the expense of design improvement, distribution and demand stimulation, which are critical to catalyzing cookstove adoption, market development and sector sustainability.

Necessary capacity building areas include:

- *Local design, adaptation and manufacturing:* among cookstove factories such as, Burn Manufacturing, Envirofit, Ezylife and Ecozoom International and local fabricators with an aim of developing cookstoves that suit the local needs.
- *Innovative distribution and demand stimulation:* ensuring that the target group understands why they should invest in a cleaner cookstove and is able to benefit from using one when they do buy.
- *Market linkages:* market transformation requires building capacity on financing, business planning, marketing and distribution, as done by the GVEP's DEEP programme and GIZ's EnDev programme.
- *Policy:* considerable support is required to enable the government to develop sound policies, effective standards and appropriate regulatory instruments.
- *Testing:* national and regional cookstove testing centres, international standards and formation of an umbrella association are vital.

Policy revision: Policies should catalyze the market and have long-term targets to encourage and promote investor confidence. The following aspects will be important for attracting private investments and encourage growth of the sector:

- Standards and regulations on stove designs to ensure all stoves in the market are assessed and qualified for the market to protect consumers on a level playing field.
- Enforcement of existing by-laws on firewood use in institutions (ERC is finalizing a regulation to demand improved cookstove use by all institutions).
- Capacity development as a requirement for licensing to ensure quality in service delivery.
- Taxation issues must be addressed to encourage private investment.
- Linking cleaner cookstove technologies to sustainable charcoal production processes such as utilization of a more efficient production and wood carbonization processes for conservation of trees.

It is important that these policies be backed up by resources and a framework for implementation. This should go hand-in-hand with encouraging efficient use of the limited biomass resources at all levels by setting and enforcing standards and regulations to protect consumers.

Cookstove communication strategy:

Awareness creation of cleaner cookstoves should reflect the holistic approach and not focus only on one facet. Taking into consideration the various segments of the cookstove sector, there has to be various ways of communication:

- General awareness creation for the users through mass media, publications, public events like field days, *barazas*, religious gatherings, etc.
- Specific awareness creation for decision-makers in public institutions, NGOs, donors, etc.
- Specific awareness creation for politicians and other people in the government at both county and national levels.

Each of these requires specific approaches, most of which still need to be developed.

Authors: Anna Ingwe-Musungu¹, Andrew Lomosi², Mary Njenga³, Daniel Wanjohi⁴, Reimund Hoffmann¹, Oliver Johnson⁵ and Miyuki Iiyama³

Acknowledgements: This brief builds on insights from the SEI-ICRAF workshop on Cross-sectoral Integration for Improved Access and Sustainability of Biomass Energy in Africa that took place in Nairobi on 7-8 November 2013. The authors would like to acknowledge the valuable contributions of the workshop participants. Special thanks go to Jacob Kithinji and Vincent Okello who sat in the group that discussed issues on cleaner cookstoves. Reviewing, editing and designing of the brief by Teddy Kinyanjui, Betty Rabar, Sherry Odeyo and Martha Mwenda respectively is highly appreciated.

References:

- [1] Winrock International, E+Co & Practical Action (2011) The Kenyan Household Cookstoves Sector: Current State and Future Opportunities, Washington DC
- [2] Restio Energy (2012) Terminal Evaluation of the Developing Energy Enterprises Project in East Africa, Nairobi
- [3] Global Alliance for Clean Cookstoves (2011) Igniting Change: a Strategy for Universal Adoption of Clean Cookstoves and Fuels, Washington DC

¹GIZ – Energizing Development Kenya, ²SNV Kenya, ³World Agroforestry Centre (ICRAF), ⁴Global Alliance of Clean Cookstoves and ⁵Stockholm Environment Institute (SEI)