

Poverty reduction aspects of successful improved household stoves programmes

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Overview

Programmes and projects to improve household wood and charcoal stove efficiencies have been launched throughout the developing world over the past 20 years. The main driver for promoting these stoves has been to reduce environmental degradation resulting from the removal of trees for charcoal and fuel wood production. In addition there are health benefits for families from the reduction or removal of smoke in their homes.

Unfortunately many programmes have failed to establish sustainable improved stove production, primarily through lack of sufficient attention to consumer tastes and market dynamics.

Objective of research

The objective of this project, funded by the UK government (under the DFID Knowledge and Research scheme), was to identify the key success factors for sustainable stove production and supply. It would do this by identifying the poverty impacts of successful, commercially based, improved household biomass stove programmes on producers, consumers and others associated with the household fuel and stove supply and end-use businesses in Ethiopia, Kenya, and Uganda. Work on this project was carried out:

- in Uganda under the leadership of the Rural Energy Development Centre (REDC)
- in Ethiopia under Megan Power Ltd
- in Kenya under EAA-ESD and Rural Technologies Enterprise (RTE).

The overall work was co-ordinated by Energy for Sustainable Development Ltd. (ESD) of the UK.

Réduction de la pauvreté et programmes réussis de développement de foyers améliorés

Ce projet avait pour objectif l'identification des principaux facteurs pour la production et la commercialisation sur des bases durables de foyers améliorés en Afrique de l'Est. Les principaux résultats sont – la commercialisation de foyers contribue à améliorer le niveau de vie des producteurs et des consommateurs en milieu urbain; la perception du consommateur est un élément clé de la réussite; le succès exacerbe la concurrence, cependant la qualité peut en être affectée.

The employment, business development and income generation aspects of successful improved urban household stove programmes in these three countries were also quantified using a livelihood-based approach. The project was based upon the success of improved charcoal stoves in Kenya and Ethiopia, where millions of improved stoves have been sold, and the success of the Mirte *injera* (flat bread) stove in Ethiopia (see *Boiling Point* 41). Around 1.5 million Kenya Ceramic Jiko stoves have been sold in Kenya since 1981 on an unsubsidised, commercial basis. A similar number of Lakech charcoal stoves (Figure 1) have been sold in Ethiopia commercially since 1991 and they are owned by 65% of households in Addis Ababa. The price of the charcoal stoves in both Nairobi and Addis Ababa has fallen from around \$10 originally to as low as \$1 now. Uganda was included in the project to learn how to build upon numerous past experiences, and to determine to what extent past activities have been successful, and the impacts they have had.

A further objective of the project was to compare the poverty alleviation effects of improved cookstoves in urban areas, and to find ways of sharing and improving those poverty alleviation impacts.

The project involved:



Figure 1: Lakech charcoal stove under construction

- Identifying stove producers in Addis Ababa, Nairobi and Kampala;
- Interviews with stove producers and others engaged in the urban stove business;
- Interviewing selected households regarding improved stoves
- Stove tests.

A dissemination workshop was held in Kampala, Uganda on the 29th of June 2001. Over 30 stakeholders attended the workshop. A set of recommendations was made by the workshop participants to support current activities with the private sector under the programme supported by the European Commission (IGAD), the Ministry of Energy and Min-

eral Development, and a number of private individuals.

Project Findings

The major project findings are:

Successful commercial stoves lead to improved producer livelihoods:

The commercial success of improved stoves in Ethiopia and Kenya has effected substantial positive livelihood changes, including improved diet, improved health, improved housing, improved education, for the majority of those engaged in the business.

Successful commercial stoves lead to improved urban consumer livelihoods:

In both Kenya and Ethiopia the use of the stoves has led to: real financial savings for lower income groups; the end users increased cooking speed; reduced air pollution indoors; convenience for cooking and therefore improved safety; better appearance and reduced fuel consumption. A major finding in Kenya was that the charcoal and wood saved were used for further cooking or water boiling. In Uganda, there are no statistically significant poverty alleviation aspects for those engaged in urban 'improved' stoves due to lack of market penetration.

Consumer perception is a key to success

In Kenya and Ethiopia, relatively wealthy consumers were key to

the commercial success of improved stoves. Unfortunately, this is not the case in Uganda, where the more affluent look upon 'improved' stoves as 'inferior' goods. This has seriously hindered improved stoves' take off in Uganda, and has led to highly variable quality and sales.

Success leads to fierce competition – but quality can fall

The success of improved stoves in Kenya and Ethiopia, has led to intense competition, price cutting, and unfortunately, reduction in product quality. Simple actions can quickly turn this around to improve quality without reducing profitability.

Role of government and donors

Neither the Ethiopian nor the Kenyan improved stoves programmes would have been successful without initial government and donor backing over several years, particularly for promotion and public awareness raising. Governments and donors must be involved with specific tasks at key stages and maintain a supportive role on a continuing basis where necessary.

Conclusions

The project provides good indicators for improved stove producers and those government and non-government stakeholders who seek to promote improved, energy efficient stove use in urban areas of the developing world. Once established, the small-scale arti-



Figure 3: Modern, clean, safe commercial injera stove

sanal sector can sustain major commercial successes in the stove sector, resulting in sales of thousands of energy efficient stoves. Moreover, the project demonstrates that this can have substantial positive impacts on the livelihoods of these producers and their families.

Second, the project clearly demonstrates that consumers benefit from both improved indoor air quality and financial benefits from reduced consumption.

Finally, the work further reinforces earlier findings; that many more factors than simple reduction in fuel expenditure induce consumers to buy and use improved stoves. Factors such as 'modern appearance', cleanliness, safety, reduction of smoke (environmental health), ease of use are generally more important than actual energy savings themselves (Figure 3).

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Figure 2: Selling stoves in Addis Ababa