Minutes of the Dissemination and Strategy Seminar on
Poverty Reduction Aspects of Successful Improved Household Stoves Programmes (DFID KaR project R7368)

Grand Imperial Hotel, Kampala, Uganda
Friday 29th June 2001

Summary

Over 30 stakeholders representing local municipal governments from Kampala, Jinja and Entebbe, Habitat, the Ministry of Local Government, the Ministry of Energy and Mineral Development, various NGOs and local improved stove producers attended a workshop on 29th June 2001. It was hosted by the Renewable Energy Development Centre - REDC Ltd. (Uganda DFID project counterpart) with key participants from the Poverty Stoves project from Kenya, Ethiopia and the UK. Key project partners from Ethiopia and Kenya also participated, presenting the results of their work, and setting the stage for extensive discussions with Ugandan participants.

The all-day workshop was not only well attended, but participation was extensive and enthusiastic. Of particular importance were the contributions from the local municipal authority representatives who clearly indicated that they viewed the improved stoves efforts in Uganda to be a high priority in terms of urban development and environmental strategy. There was considerable discussion between them and the Ugandan and regional stove producers, with the agreement to carry forward the discussions to promote local improved stove production in Uganda in an integrated urban poverty alleviation and household environmental health framework.

Key recommendations from the workshop revolved around the fact that Uganda is currently poised to launch a major urban commercial improved stoves programme. This is being supported by the European Commission-funded Intergovernmental Authority for Development (IGAD) 'Regional Household Energy Programme' project. This programme is also received considerable support from the Ministry of Energy and Mineral Development, and technical and marketing support from the Ugandan, Kenyan and Ethiopian KaR teams who participated in this dissemination workshop. The Project Team made very conclusive and strong recommendations to the participants at the workshop, and it was clearly recognised that Uganda was poised not only for a major improved urban stoves programme, but for success in this private sector led commercial approach.

Recommendations followed closely the original "poverty stoves project" (DFID KaR R7368), and focused on the actions local authorities and local NGOs could and should take to promote this exciting and beneficial activity.

Recommendations

- The **private sector** should take the **lead** in the production and commercialisation of improved stoves.
- Provide **experienced training for producers** to ensure that producers master the techniques.
- Identify **consumers' needs** and preferences (not just in terms of energy, but in terms of appearances, health, safety and other consumer priorities for purchasing new stoves).
- Define a **marketing strategy** to target the consumers.
- Utilise **existing stove markets and producers** wherever possible.
- Maintain the **commercial viability**, through establishment and conservation of **quality standards**.
- **Educate consumers** to know what they should expect from a good quality improved stove (standardise the stoves to create trust in the product).
- Keep up **R&D** to improve the stoves.
- **Follow up progress** of stoves production and sales, stove quality, and the impacts on stove producers and consumers.

----- Morning session ------

The workshop activities were opened by **Mr. A. Mugyenzi** of REDC Uganda, one of the partner organisations in the DFID KaR project, together with MGP in Ethiopia, RTE in Kenya and ESD in the UK as overall project co-ordinator.

EXPERIENCES FROM THE THREE COUNTRIES INVOLVED IN THE PROJECT: UGANDA, ETHIOPIA AND KENYA

Mr. D. M. Bess (ESD) put the project background in context from an historical and social point of view (see presentation in Annex 2). The overall aim of the project was to assess the impacts of new improved stoves' adoption on producers and consumers, particularly informal sector producers in urban areas. Improved urban stoves have been remarkably successful in Kenya and Ethiopia, while there has not been much success, despite considerable efforts, in Uganda.

The project was designed to examine the effects of these stoves on producers and consumers in order to provide guidance both to the governments and stakeholders in Uganda, Ethiopia and Kenya. It was also intended to provide guidance and information for a broader audience of governments, NGOs, and other key stakeholders interested in promoting both improved household energy efficiency (improved stoves), and promoting employment and income generation in the urban informal artisanal sector.

The dissemination component of this KaR project was further designed to engage key Ugandan stakeholders with the idea to help promote Uganda's improved stove programmes currently taking shape. It was intended to provide guidance and recommendations on how best to ensure that these renewed efforts in the urban improved stoves sector succeed both in a commercial senses as well as an improved urban livelihoods sense.

Biomass is the primary energy source especially for cooking in most urban and rural areas throughout the developing world. In Sub-Saharan Africa, in particular, charcoal is used almost universally by all strata of the population, from the wealthiest households to the poorest. However, the poorest are those most affected by the use of traditional fuels, whereas the more well off can afford increasing charcoal prices easier than poorer households, and they generally have access to other, more modern fuels (e.g., electricity, lpg, kerosene) to supplement charcoal. Improved stoves lead to improved combustion of biomass fuels. This leads to less smoke, fewer particulates and indoor pollution (even without hoods and chimneys). This, in turn, leads to recognised economic and health impacts of traditional fuel use in households, as well as reduced negative effects on local and national environments.

During the 1980s, improved stove programmes were initiated across the developing world primarily as a response to the major drought in the Sahel during that period, as well as the 1970s oil crises, which reduced kerosene and lpg availability and raised their prices to urban consumers. A large number of improved stove programmes were launched all over the developing world during the 1980s. Unfortunately, for a variety of reasons (lack of attention to existing stove markets, lack of attention to consumer needs, lack of attention to commercial approaches), the vast majority of these stove programmes failed. This led to major disillusionment and pessimism concerning the prospects for improved urban stoves amongst governments, NGOs and international donors.

However, not all programmes failed. In particular, during the 1980s in Kenya, and the 1990s in Ethiopia, urban improved stoves programmes, including both charcoal and wood stoves in Ethiopia, proved to be very successful, to the extent that millions of improved stoves have been sold commercially, with no subsidies, in both countries.

This DFID KaR project was designed to determine whether or not these successes had led to positive livelihood, poverty alleviation impacts upon producers, and consumers. The project approached this by examining the:

- effects on producers (e.g., improved incomes, improved livelihoods, improved health, etc.)
- effects on consumers (e.g., lower consumption of fuel and reduction of negative health and environment effects),
- factors that led to successful programmes, and
- opportunities arising for people who engage in efficient stove production.

UGANDA

Mr. A. Mugyenzi (REDC) gave an overview of the Ugandan experience (see presentation in Annex 3). In Uganda the improved stoves programme has not been very successful to date. The wealthiest people in urban areas prefer to use traditional charcoal stoves (sigiris). After over fifteen years of promoting improved stoves through various donor- and NGO-led programmes, only the poorer households use the improved ones, unlike in Kenya and Ethiopia.

The major problem in Uganda has been the highly variable, and often poor, quality of improved charcoal stoves sold on the market. Any stove with a different shape has been labelled as "improved". This has created great deal of confusion amongst consumers. The lack of strong, commercially based marketing initiatives has negatively influenced higher income people's perception of improved stoves. There is great uninformed market potential within the wealthiest people in the country, which is the segment that must be tapped if Uganda is to realise the same commercial success as Kenya and Ethiopia.

In both Kenya and Ethiopia, initial strategies for improved stoves targeted wealthier households where stoves could be sold at higher prices. This occurred while producers and marketers learned the business and achieved economies of scale. This enabled prices to drop later to achieve market penetration amongst all segments of the urban population, particularly the urban poor. The Kenyan and Ethiopian experience clearly shows that, to achieve commercial success, much attention must be paid to **marketing and dissemination strategies**, and to working with producers to adopt the most commercially viable strategies to ensure success. It is also necessary to control closely the **consistency of quality** of stoves in order to build confidence amongst both consumers as well as producers.

Simple interventions can improve the production chain and assure quality, such as kilns made of bricks and mud (traditional kilns are made with grass and the ceramic of the lining does not burn at a high enough temperature causing them to be fragile).

Points of discussion

- Local authorities (e.g.: Kampala City Council - KCC) and government bodies want and need to be kept well informed of the progress of the activities.
- At the same time, producers and marketers seek positive official recognition of their contributions to reduced deforestation, and to urban development.

- Those people who have been given the improved stoves to test have been very happy with their performances, there is potential for further marketing.

ETHIOPIA

Mr. M. Shanko (MGP) gave an overview of Ethiopia's successful experience with improved charcoal stoves (the "Lakech") and traditional bread (injera) baking stoves - the "Mirte" (see presentation in Annex 4). The Lakech is an adaptation of the all-metal charcoal stove lined with a ceramic liner on the Kenya Ceramic Jiko (KCJ) model (see Kenya section below). The Mirte is hand made from building materials (e.g., the materials for hollow blocks), fitted with a traditional ceramic baking plate (mtad). In both instances, production is by hand by small-scale artisans.

In Ethiopia the forestry coverage is very low, and has diminished dramatically over the past several decades. Biomass is used for energy purposes in 95% of all households. Generally energy use is at very low efficiencies. In the case of charcoal, this is compounded by the very low efficiency of wood to charcoal conversion (less that 15%) and the fact that the preferred forest species for charcoal production are slow growing savannah trees which are under severe environmental pressures.

Injera baking is one of the most energy intensive activities in the developing world. Households regularly use an average of 20kg of wood per week; over one tonne per month, of wood, branches, leaves and twigs (BLT) to bake injera (flat bread). Injera is traditionally baked on three stones using a 60cm wide ceramic plate ("mtad"). Fuel is fed under the plate from all sides by the cook, resulting in frequent burns. Baking is carried out in enclosed areas and smoke inhalation from traditional injera baking is a major health issue.

Major fuel savings are realised with the improved stoves developed over the past nine years in Ethiopia. Charcoal use has shown to be reduced by a quarter to a third under normal household use while wood for injera baking is halved on average with the new stoves in households. Baking injera commercially has grown significantly in importance in Ethiopia over the past decade. Commercial bakers, with new commercial Mirtes, reduce fuel consumption by nearly two thirds relative to traditional baking. Moreover, particularly in the case of wood, increased efficiencies lead to considerably reduced indoor smoke, improved safety for both cooks and children, increased cleanliness, as well as reduced household expenditures. The commercial Mirte is installed with a chimney.

The approach to dissemination of improved stoves over the past decade (Ministry of Energy and Mines, with assistance from the World Bank, DANIDA and DFID) in Ethiopia was purely **commercial**. Over a million and a half Lakech charcoal stoves have been sold since 1992, while several hundred thousand household Mirtes, and several thousand commercial Mirtes have been sold since 1995 and 1999 respectively. Studies show that the Mirte is saving an estimated 300,000 tonnes of woody biomass in Addis Ababa alone per year.

The critical factors for success in Ethiopia for both the charcoal and wood stoves have been:

- A **strictly commercial approach** to the production and marketing of stoves;
- **Clear project entry and exit strategies** (i.e. the project was used to introduce the stoves, provide necessary technical assistance and training, limited funding support, and then moved on to other urban areas and then rural areas);
- **Clear producer and consumer strategies** in terms of dissemination, training, technical assistance and follow on;

- **Close attention to consumer's needs and preferences** (in all dimensions, from health and safety, to quality and appearances of stoves),
- **Government promotion** at key points in promoting the stoves;
- **Good project management** with clear roles of staff related to consumer promotion, artisan training and assistance, marketing, testing, promotion and quality assurance.

The projects supporting improved charcoal and wood stoves have followed clearly understood strategies with methodologies that are clear and transparent to all key stakeholders. These include:

- Identify consumer's needs,
- Use existing production and marketing channels, wherever possible,
- Involve the private sector from the very beginning in defining and implementing strategies.
- Test stove performance under real household conditions, and then follow up those tests with household interviews and laboratory tests of actual stoves on a regular basis;
- Work closely with producers and marketers at all times to ensure quality control and positive adaptation to consumer needs and demands;
- Utilise available materials and ensure quality standards that are appropriate to those materials.

The market has been reactive to the changes in quality of the final product through the years and has led the producers to go back to high quality standards.

KENYA

Messrs C. Gitundu and C Kirubi (RTE) gave an overview of the Kenyan successful experience from the stove producer perspective. Kenya was the first country in Africa to launch a commercially successful improved charcoal stoves programme. With the assistance of the Government of Kenya and the USAID, following the United Nations Conference on New and Renewable Energy (1981), Kenya adapted the Thai Bucket Stove to the contemporary Kenyan "jiko" (all metal charcoal stove). The result was the Kenya Ceramic Jiko (KCJ) in which a ceramic liner (which holds the charcoal) is fitted into a metal cladding with insulation material, thereby boosting the efficiency of the stove by reducing charcoal consumption.

Government and donor support was limited to providing technical assistance, training and promotion between 1983 and 1985. Thereafter, NGOs helped promote the improved stove, the KCJ, but the marketplace essentially took care of the rest. From 1985 to the present, millions of KCJs have been sold. Surveys conducted by the Team show that over 80% of all Nairobi households (over 500,000) use the KCJ, representing a phenomenal commercial success. The stove has realised as much success in other urban areas of Kenya (Mombasa, Nakuru, Eldoret, Kisumu, etc.), and has penetrated most households in Kenya's "high potential" rural agricultural areas (around Mt Kenya and along the Rift Valley).

Urban areas and high-income households were the target to test the KCJ, because *the payback period is shorter and fuel and appliances are bought at faster and higher rate*. People liked the looks of the KCJ, the fact that it was cleaner, smoked less, was safer for cooks and children, and could be purchased from many sources (including supermarkets and all markets). Prices for the KCJ retailed at around US$40 equivalent in 1985 and are now sold for less than US$5 equivalent. Market development in Kenya was similar to the Ethiopian one in terms of prices and sales - prices in Ethiopia started at around US$35 in 1992 and are now less than US$3 in all urban areas. Factors cited by consumers for purchasing the improved charcoal stoves in Kenya and Ethiopia are similar. It is notable that fuel savings ranks

consistently lower than other factors such as cleanliness, safety, reduced smoke and appearance.

The improved stoves business is **private sector led** in Kenya.

Lessons from the Kenyan experience relevant to the region

- **Design the stoves together with the producers** and teach how to test and ensure ownership,
- Understand the reasons of bad quality material and **follow up with the suppliers** for **constant quality**,
- In Uganda there is need for specific **energy policy** in place to help the sector. It is also necessary to monitor the market.
- **Provide basic financial accounting and business skills** support to producers in order to assist them become better business people.

------ Afternoon session ------

HOW SUCCESSFUL STOVES HAVE INFLUENCED THE LIVELIHOOD OF PRODUCERS AND CONSUMERS

ETHIOPIA

Mr. M. Shanko (MGP) illustrated the results of the detailed analysis of the impacts on improved stoves producers and consumers (see presentation in Annex 5).

The project demonstrated unambiguously that engaging in the improved stoves business in urban Ethiopia leads to **positive impacts on producers** including:

- **increased incomes**,
- improved access to **higher quality food**,
- **improvements in education** for producers and their families,
- better access to **medical care**,
- **improvements in clothing**,
- better access to **services for the extended family**, and
- **better housing** (more ownership and space availability).

The impact in financial terms for producers is very different for the Mirte (used to bake the traditional injera) and the Lakech. People who engage in Mirte production and sales have realised over 50% increases in their incomes. In both the case of the Lakech and the Mirte, informal sector producers have generally "graduated" over the years, moving from being individual producers to employing others in the business, from production to marketing and sales. This has been the case for both the Lakech and the Mirte, and has led to marked livelihood improvements as well as job creation. In Addis Ababa, over 500 people are engaged full-time in Lakech production and marketing, while over 200 are engaged full-time in Mirte production.

As **women are the cooks and bakers (stove consumers)** in urban Ethiopia, the Lakech charcoal stove and the Mirte both lead to major quality and quantitative benefits to women bakers (both domestic and commercial).

- The **return on investment** from use of the Mirte, both for households as well as for commercial bakers (small-scale itinerant women bakers) is very high and payback periods for households is, on average, less than four months, while for commercial bakers far less than one month.
- **cooking speeds** have increased,
- **indoor air quality** has improved dramatically,
- use of the stoves has led to **diversity of household cooking** (enabling more foods to be prepared simultaneously, particularly with the Mirte's water heating capabilities).
- **improved safety** for cooks and children;
- **cleaner interiors** and areas around points of cooking;
- **improved appearance of household appliances**, giving kitchens, particularly lower income households, a more "modern" appearance.

Control groups were used during the assessment of the effects of the programme. A group of 40 traditional stove producers was used to compare results with over 100 improved stove producers. The final report outlines detailed results, but in summary, the benefits of producing stoves were up to 5 times better for improved stoves producers than for the traditional ones.

KENYA

Mr C. Kirubi (RETAP) illustrated the results of the detailed analysis of the impacts on improved stoves producers and consumers in Kenya (see presentation in Annex 6).

Impacts on producers showed:

- Significant **increased income**,
- better **access to medical care**,
- **improved education** and educational opportunities,
- improved **ability to serve extended families** and meet these familial obligations (particularly for urban workers with their rural families),
- **improved food** intake and quality of diet.

In Kenya most of the people involved in stove production are men, while women are generally engaged in marketing improved stoves. Only about 17% had access to capital credit to improve the production of stoves - the rest made use of their own funds and sources (informal sector).

As was shown in Ethiopia, to move into, and to succeed in, improved stove production, access to small-scale credit is important. Government and NGO promotion is crucial to the success of improved stoves. The stove business has a very high positive impact on employment creation. As with Ethiopia, small-scale producers graduated over the years, and as they grew, hired employees for both production and marketing.

The **impact on consumers** in Kenya is also very striking. Improved stove consumers realise:

- **Savings in money** that can be used to buy more charcoal or other household goods;
- **In most cases, households use the same amount of charcoal as with traditional stoves, but they achieve far more** (heating and boiling water, cooking more and additional food),
- **energy savings** per amount of food cooked, water heated and boiled;
- **increased speed of cooking**,

- **improved safety** (particularly reduced burns);
- **convenience for cooking**,
- **reduced indoor air pollution** and improved health,
- **easier maintenance and cleaning** in cooking areas.

Financial benefits from the KCJ among the lowest income classes of both consumers and producers are very evident. Producers who engage in all aspects of production and marketing (cladding, lining assembly) can be successful, but they need good organisational skills. Those engaged in specialised aspects of production (e.g., cladding production, liner production, and assembly) succeed better than those with mixed production bases.

UGANDA

Mr. A. Mugyenzi (REDC) explained that in Uganda there has been improvement from the production and use of stoves, but this was not dramatic. Sixty percent of the lowest income consumer groups had positive opinions about improved stoves, compared with only 25% in the upper incoming classes.

Points of discussion

- **Improved stoves in Uganda generally require less charcoal** for lighting and work well relative to traditional stoves.
- Producers have yet to reach **economies of scale** to bring down production costs and achieve larger markets. Production has been small scale for many years, with high overheads, high marketing costs, and low returns. This has discouraged producers.
- **Very few producers only produce improved stoves** (tending to produce traditional stoves and other metal appliances). This contrasts markedly with Ethiopia and Kenya where improved stove producers **only** produce improved stoves, and realise much higher returns than traditional stove producers who generally produce a variety of metal goods.
- **Umbrella associations of producers** can help producers get organised and mobilise finance, but there is the danger that the money is not redirected back to the producers unless quantities are small and governance is good.
- **Producers need basic business and marketing skills**, including basic accountancy, business planning, market assessment and consumer relation and promotion skills. In the case of Ethiopia and Kenya, a little of these went has gone a long way to improve producers' overall economic and market performance.

CONCLUSIONS

Mr. D. M. Bess (ESD Ltd) summarised the studies and the days' conclusions with extensive contributions from the participants:

- **Real substantial livelihood change has been achieved amongst improved stove producers** in Kenya and Ethiopia, and can also be achieved in Uganda and other countries.
- **Consumer perceptions** of quality, performance, appearance (style), are crucial to the success of improved stoves, and to the improved livelihoods of producers.
- **Quality is crucial** and is a concern in all three countries. Increased competition has often led to reduced quality in Kenya and Ethiopia, although this has tended to be self-correcting when consumers are educated to what constitutes "good" stoves

- **Consumer awareness and promotion of improved stoves is essential** to ensure consumers differentiate between high and low quality stoves.
- Successful programmes bring new people into the sector, thereby **increasing competition**, and **attracting more customers**, and bringing prices down.
- **Clear benefits need to be seen by consumers** and this is essential for successful improved stoves **marketing strategies**.
- There is **a major role for government and NGOs to promote improved stoves** and to ensure consumer education about what constitutes "improved" stoves.
- It is crucial to **monitor and follow up** on stove performance and consumer responses. This should lead to changes in promotion and consumer education, on the one hand, and on quality control and improved production on the part of producers, on the other.
- **Efficiency is not the most important issue for consumers.** While fuel savings are important, so is improved health, ease of cooking, reduced smoke, increased cleanliness, speed of cooking, appearance of the appliance and other factors that apply as equally to Southern households as Northern households. Producers and marketers need to take these factors into consideration not only when designing and producing stoves, but in the way they market them to consumers.
- **Marketing and basic business skills** are essential to successful programmes and producers.
- As shown in Ethiopia and Kenya, while it is important for government to promote, it is crucial that **government not interfere too much in the marketplace** in terms of setting standards, licensing, etc. It is important to let the private sector adapt to the market, and to learn by doing.

ANNEX 1

List of Participants

NAME	ORGANISATION	DESIGNATION
Mark Ejangu	REDC, Uganda	Operational
Melessew Shanko	MGP, Ethiopia	Director
Ottavia Mazzoni	ESD Ltd., UK	Energy consultant
Mugyenzi Arthur	REDC, Uganda	Director
Turyahabwe Elsam	ERD, Uganda	SEO
Emmanuel Serunjogi	Kampala City Council	GWSC chairperson
Pete Young	IGAD	Energy Advisor
Kisakye Richard	NFC	Lecturer
Kimuli M. Godfrey	MEMD/NRSE	SEO
Ahimbisibwe Michael	MEMD/NRSE	EO
Mbonye Arsen Mutesi	MEMD/NRSE	SEO
Richard Bakadde	Black Power	Programme Co-ordinator
Dinah Bonabaana	Habitat for Humanity	Field Officer
Isakwa Steven	Habitat for Humanity	Field Officer
Domel Telex	Kampala City Council	Youth Desk
Charles Kirubi	RETAP-Kenya	Coordinator
Charles Gitundu	RTE	CEO
Mike Bess	ESD Ltd., UK	Director
Josh Mabonga-Mwisaku	UREA	Manager
Hellen N. Gakwaya	Integrated Rural Development Initiatives (IRDI)	Programme Manager
Francis K. Muhiire	Action for Children	Field Officer
James Bakunzi	The New Vision	Reporter
Fred Matovu	Mayfair Adult Literacy	Coordinator
Mr. Kivumbi	Improved Charcoal Stoves producer	
Patrick Rubagyema	REDC, Uganda	Operational
E.M. Kibuuka	JEEP-Uganda	Board Member
Simon Busuulwa	Young Conservation Association/UNICEF	Research Coordinator
Baker Akantambira	Ministry of Local Gov't	Inspector
Annet Birungi	Makindye Division (LCIII)	Female Youth Councillor
Clement Mutagubya	Makindye Division (LCIII)	Youth Councillor

ANNEX 2

Project Background and Context
D. M. Bess presentation (ESD Ltd.)

Slide 1

Outline

- Purpose & objective
- Project context
- Underlying assumptions
- Summary methodologies
- Questioning those assumptions
- Project focus
- Project findings, a visual representation

Slide 2

Project Objective

To determine all poverty alleviation aspects of successful commercial stoves programmes on producers, consumers and others associated with the household fuel and stove supply and end-use business.

Slide 3

Project Context (1)

- Biomass makes up major source of urban household, commercial and institutional energy
- Charcoal and fuel wood has traditionally been utilised very inefficiently
- Traditional stoves are produced by large number of informal artisans
- Poor urban households use higher proportion of biomass than wealthier households
- Traditional urban fuel use has significant negative environmental effects
- Traditional urban fuel use also has significant upcountry environmental effects

Slide 4

Project Context (2)

"Improved" stove programmes began late-1970s to:

- reduce fuel consumption & household consumption in face of oil crises (heavy shift into charcoal)
- reduce household expenditures, reduce negative impacts on households
- reduce negative environmental impacts, particularly in light of perceived 'desertification' from wood & charcoal production

Slide 5

Project Context (3)

- Massive donor assistance in early-1980s
- Tails off in late-1990s
- Major failures, lack of uptake, lack of "success"
- Major disillusionment amongst donors, NGOs after many programmes…..
- But…..

Slide 6

Project Context (4)

- Not all was doom & gloom
- Some programmes got it right
- KCJ in Kenya takes off like a rocket
- Lakech in Ethiopia builds on KCJ experience, Ethiopian unique circumstances
- Tanzania "jiko" also successful
- Ethiopian "mirte" replacing 3-stove fire major success
- But, to what effects???

Slide 7

Underlying Assumptions (1)

- Improved stoves reduce fuel consumption in households, hence, lower expenditures
- Improved stoves are good for the environment
- Improved stoves help generate employment in new, higher value-added product
- Improved stoves are just plain GOOD!!!!

Slide 8

Underlying Assumptions (2)

BUT…..

- What if people buy improved stoves for reasons other than saving fuel?
- What if the new stoves aren't 'improved', hence, don't save fuel?

Slide 9

Underlying Assumptions (3)

- What happens to fuel suppliers if fuel demand drops?
- What happens to traditional stove producers when people 'switch' to new stoves?
- What happens when too many people enter the supplier market, drive down margins…….?

Slide 10

Summary Methodology - Phases (1)

- Identifying the number, type and distribution of stove and improved stove producers
- Carrying out extensive interviews, with a sample of both improved and traditional stove producers, and others selecting and
- Interviewing households regarding improved stoves; and,
- Carrying out technical tests on existing traditional and improved stoves to gauge their performance

Slide 11

Summary Methodology (2)

- Define "universe" of stove producers & consumers
- Define sub-sets of urban producers (sample)
- Define sub-sets of urban stove consumers (sample)
- Develop poverty impact indicators for producers & consumers
- Carry out in-depth surveys
- Carry out focus group discussions
- Develop case studies

Slide 12

Project Focus

- Commercial aspects
- Producers, people in business
- The group least studied in any programme
- What has happened, is happening to them now that we have some successes?
- What makes some successful, others not?
- What does 'success' bring - better livelihoods or more work…..?

ANNEX 3

Uganda Experience
A. Mugyenzi presentation (REDC)

<table>
<tr>
<td>Slide 1

Dissemination and Strategy Seminar on Poverty Reduction Aspects of Successful Improved Household Stoves Programmes:
DfID-KaR) Project R7368

Friday 29th June 2001
Grand Imperial Hotel, Kampala, Uganda.

Arthur Mugyenzi, REDC</td>
<td>Slide 2
Background
• Improved charcoal stoves (ICS) were looked at as means of reducing fuel-wood pressure through conservation and as a tool of improving health and lives of users

• There was no sustained thrust in the commercialisation process of ICS-advertising, market placement, distribution etc.</td>
</tr>
<tr>
<td>Slide 3
Findings: Production & marketing structure
• Liner production
• Cladding manufacturers
• Stoves assembly
• Retail -market stalls -hawkers (the biggest group in this category)
• ICS are popular among hawkers
• ICS market employs mainly the youth
• The players in the industry tend to work individually or with no organization.
• Labour turn-over is low
• Producers suffer capital constraints
• Retail was a male-female activity
• The ‘sigiri’ was extremely popular
• Most retailers are self-employed
• 129 producers/marketers were studied in Kampala</td>
<td>Slide 4
Monthly earnings from stove manufacture</td>
</tr>
<tr>
<td>Slide 5
Findings
• Ownership of traditional metal stoves, ‘sigiris’, increased in communities that fell in the higher incomes quartiles and fell among communities in the lower income quartiles.
• Ownership of ICS was highest among the poorer households in Kampala. This is attributed to the positioning of the ICS on the markets that the richer households have no access to.
• The relatively stagnant price of charcoal slackened the household’s desire to change to an energy saver.</td>
<td>Slide 6
Critical Success factors and Lessons Learned (1)
• Central Government and Local Government support in promotions adds credibility to the intervention, provides for recognition of the industry etc.
• Technology development
• Commercial capacity- [market development, trade Fairs etc.]
• Strong private sector
• Massive market-[consumer awareness in household energy planning and management]
• Good household incomes
• Good skill base
• Decentralised and liberalised economy
• Sustainable business-profit motivation
• Economic viability
• Entrepreneurial capacity
• Avoidance of the ‘charity syndrome’
• Ranking of charcoal in energy-mix</td>
</tr>
</table>

Slide 7	Slide 8
Critical Success factors and Lessons Learned (2) • Subsidies to conventional fuels like electricity have made them cheaper and thus not reflective of their real prices resulting in unfair competition for charcoal. • Business development support (BDS) • Quality control - QC (standardisation of ICS quality). Consumer education is a useful tool in QC. • Market driven private sector • Market development supported by grants • Training/capacity building as part of the commercialisation process.	**Project findings** • Half of the retailers had attempted to produce ICS but later fell out, signifying the relatively marginal importance of the ICS industry • 74% of the entire population of stove producers engage primarily in the manufacture of the Traditional Metal Stone "Sigiri" • The Liner makers, Cladding manufacturers, assemblers and All-clay stove producers spend 26%, 37%, 38% and 22% of their total earnings on food. • Only 11% of the producers reported that their ability to meet their fees dues hadn't improved • The number of rooms in a producer house show had fallen this represents a decline in earnings • Engaging in stove production doesn't provide a boost to home ownership • The stove industry boosted producers ability to meet extended family obligations • 8 – 10% of the monthly earnings is spent on Medicare. Stove business has helped meet some of this item • Overall there was a significant improvement in the availability of food • Asset ownership didn't represent a significant or relevant expenditure item to the stove producers
Slide 9	Slide 10
Impacts on Consumers • Laboratory Tests on the stoves show efficiency benefits of the ICS • ICS allow the consumers do more cooking using the relatively cheaper charcoal – lowering the HH energy mix	**Development of a Commercialisation Strategy** • Assessment of technological & market potential • Technology adaptation • Stove-testing • Initial production • Field testing • Training • Production and marketing • Promotion • Market trials • Support financing • Commercial manufacture and sales

ANNEX 4

Ethiopia Experience
M. Shanko presentation (MGP Ltd.)

Slide 1

IMPROVED STOVES IN ETHIOPIA

Melessew Shanko, MGP Ltd.
Addis Ababa

Poverty Stoves Dissemination Workshop
Grand Imperial Hotel, Kampala, 29th June 2001

Slide 2

CONTENTS

- General Background
- Background to Improved Stoves (CEINFMP)
- Critical Success Factors

Slide 3

BACKGROUND

- Population: 65 Million (15% Urban)
- Pop. Growth Rate: 2.9%
- Area: 1.1 Million Sq. Kms
- Economy: Agrarian (Subsist, Agri.)
- Forest Cover: < 3% but controversial
- GNP: 120 USD
- Politics: Federal Democratic

Slide 4

BACKGROUND

National Energy Balance - ,000 TJoule

Supply/Cons	Biomass	Petroleum	Electricity	Total	% Biomass
Gross Supply	1,299.9	48.4	0.00	1,3825	94.0
Net Supply	683.4	36.2	4.6	724.2	94.4
Final Cons.	683.4	34.9	4.6	722.9	94.5

Slide 5

BACKGROUND

Energy Sector Studies

- **Energy Sector Studies of Early 1980s**
  - CESEN 1981
  - ENEC/CSA 1979
  - WB/ESMAP 1984
- **Key Recommendations of the Studies**
  - Biomass the major supplier
  - HHs major consumer, Household Energy 'Crisis'
  - HHE Utilization woefully energy inefficient
  - Open-fire (8 to 10% thermal efficiency) widely in use
  - Environmental degradation, looming threat to the nation due to neglect of HHE for decades
  - Enormous potential for improvement in HHE efficiency (improved Stoves)
  - Need for inter-fuel substitution (Subsidy on Electricity and Kerosene)
  - Massive Afforestation Programmes, e.g., Addis-Bah, Gondar, Nazreth, Dessie,….

Slide 6

BACKGROUND

Players: Improved Stoves Programmes

- MoA, Extension Dep't as part of Home Economics (User Built, Before 1980s),
- BBTC/UNICEF/MoE, as part of Mother-Child Health Care (Mud Stoves early 1980s),
- REWA/DAY/NCA/WVE/DED and a number of other NGOs, as a follow on to BBTC (Mud Stoves, early 1990s),
- MME/ILO/WB/Dutch Gov't, CEPPE (1984 – 87)
- EEA/DANIDA/WB, CEINFMP as a full-fledged national urban improved stoves programme under the Energy I Project (1990 – 1995)

NB: Experiences of CEINFMP discussed below.

Slide 7

BACKGROUND
Experiences of CEINFMP

Project Organisation:
- Donor: DANIDA through the WB
- Owner: EEA, Ministry of Mines and Energy
- Implementer: Energy I Project
- Consultants: IT Power, SATEC, ESD Ltd.
- National Team: Strong Multidisciplinary Team of Professionals
- Facility: Semi-autonomous office with facilities
- Duration: 2+1+1+1 (between 1990 and 1995)

Slide 8

BACKGROUND
Experiences of CEINFMP

Project Approach: (Commercial)

- Energy Efficiency: at least 25% savings over traditional,
- Commercial Viability: Active private sector participation from outset, NO SUBSIDY
- Scio-cultural Acceptability: Consumer Appeal

Slide 9

BACKGROUND
Experiences of CEINFMP

Project Methodology
- Needs Assessment
- Product Development and Testing
- Producer Training and Technical Assistance
- Pilot Production
- Household Trials (KPT)
- Product Improvement and Optimization
- Test Marketing
- Acceptability Assessment and Follow up
- Promotion and Marketing
- Full Scale Commercialization

Slide 10

KEY SUCCESS FACTORS (1)
- Commercial Approach
- Project Entry and Exit Strategy
- Attention to Producers' Needs
- Attention to Consumer Needs and Preferences
- Promotion and Public Awareness
- Project Org. and Management
- Supportive Political Environment
- Donor Flexibility
- Qualified and Motivated Project Staff
- Understanding the Informal Sector Operators
- Quality Control and Follow Up

Slide 11

KEY SUCCESS FACTORS (2)

The Approach: Commercial Dissemination

- Superior Thermal Efficiency: 25% savings or more,
- Commercial Viability: Purely private sector operation,
- Consumer Focus: Socio-cultural acceptance

Slide 12

KEY SUCCESS FACTORS (3)

Project Strategies and Methodology

- Needs Assessment: NO NEED, NO INTERVENTION; BUT WHOSE NEEDS?
- Technology Selection, Product Development and Testing: DO NOT REINVENT THE WHEEL !!!
- Producer Training, TA and Pilot Production: UNDERSTAND AND RESPOND TO PRODUCERS' NEEDS
- Field-testing (Kitchen Performance Test, KPT): KEEP CONSUMERS AT THE CENTER OF YOUR FOCUS
- Product Improvement and Optimization: RESPOND TO CONSUMER NEEDS AND PREFERENCES
- Market Trials (Test-marketing): BE LED BY THE MARKET, BUT ALSO WATCH OUT PRICE AND QUALITY ISSUES
- Acceptability Assessment and Follow Up: FOLLOW UP CONSUMER SATISFACTION, QC, AND MONITOR SALES
- Promotion and Marketing: SENSITISATION AND PUBLIC AWARENESS IS ENORMOUSLY IMPORTANT
- Full Scale Commercialization: BUSINESS TAKES CARE OF ITSELF BUT KEEP AN EYE ON!!!

Slide 13

CRITICAL SUCCESS (1)
Adaptive Research and Development

Slide 14

CRITICAL SUCCESS (2)
Coordination between stakeholders
- Government: No competing stove projects, no

• Technology Selection: Identify and select existing (locally, regionally) suitable technologies for further adaptation and improvement. DO NOT REINVENT THE WHEEL!!! • Research and Development: Conduct quick and dirty problem solving research (development and testing) to adapt product. NO EXPENSIVE ACADEMIC TYPE RESEARCH! • Coordination between stakeholders	direct involvement in production and marketing, no duplication of efforts, no waste of resources. Facilitation and Creating enabling environment, • Donors: Responsive, flexible and consistent. Small but continuous funding rather than large sums in a short period of time, • NGOs: Supporting the private sector, not competing with it, • Project Team: Multi-disciplinary team organized along certain functional lines; *one team, one task, one goal,* • Project Management: Participatory, horizontal with clear vision, mission and necessary resources. Not too ambitious, • Producers: Synergy between producers of d/t parts though competition might be inevitable at a later stage, • Marketers: Strategic locations, promotion and good marketing strategies, • Consumers: (The Kings and the Queens): Sit back and relax until their demands are met satisfactorily.
Slide 15 **CRITICAL SUCCESS (3)** Promotion and Marketing 1. Public education and awareness raising a key to success, 2. Promotional support to producers from government to boost sales at initial stages, 3. Considerable Amount of resources from government for advertsing on TV, Radio, print media and demonstrations	Slide 16 **CRITICAL SUCCESS (4)** Keep the focus focussed • Urban stove with the view of expanding to other urban and rural areas gradually, • One technology at time, • Start small and grow big, • Keep consumers in front of your drawing board, • Don't give up when results are not so good. Don't be discouraged by poor results. In stead work on them and improve

Slide 17
ACHIEVEMENTS (1)
• Hundreds of producers (project trained and copying,
• Monthly sales in tens of thousands,
• Fierce competition,
• Dropping quality and prices,
• Enormous public awareness, but unable to distinguish between the bad good quality stoves leading to declining sales volumes,
• A few 'big' guys waged price war to kill the 'small' guys but the former got killed themselves,
• Some producers changed their marketing strategies and produced high quality stoves for the upper market
• Currently price and quality is more or less stable (see curve).
	Slide 18
	ACHIEVEMENTS (2)
	• Commercial Dissemination proved successful and currently being pursued by:
	  • RWSEP
	  • CCF
	  • Redd Barna
	  • RTPCs
	  • UNHCR (to some extent)
	  • Regional Gov'ts
	  • WFP(to a certain extent)
	  • A dozen of other NGOs in the sector
	
	Lesson: Once upon a time, not very long ago, Ethiopia (40% forest cover some 60 years back) was as green as Uganda today. Today, our forests are gone and we are left with less than 3% cover. That is the price Ethiopia paid for its neglect of the household energy.

ANNEX 5

Ethiopia Poverty Reduction Aspects
M. Shanko presentation (MGP Ltd.)

Slide 1

Ethiopia

POVERTY REDUCTION ASPECTS OF SUCCESSFUL IMPROVED STOVES PROGRAMMES

Melessew Shanko, MGP Ltd.
Addis Ababa

Poverty Stoves Dissemination Workshop
Grand Imperial Hotel, Kampala, 29th June 2001

Slide 2

OBJECTIVES

- Identify Key Success Factors,
- Determine Poverty Impacts,
- Draw Lessons for Future Programmes

Slide 3

METHODOLOGY

- Census Survey of Producers
- Sample Survey of Producers
- Sample Survey of Consumers
- Qualitative Assessments:
- Focused Group Discussion (Consumers)
- Case Studies (Producers)

Slide 4

POVERTY IMPACTS (PRODUCERS)

Improved Livelihood (Food Intake)

Category	**No.**	**%**
Worse	2	2
Same	43	33
Better	64	48
Much Better	23	17

Slide 5

POVERTY IMPACTS (PRODUCERS) - cont'd

- Improved Producers Livelihood:
- Ability to pay for
- School fees improved
- Medical expenses improved
- New clothing improved
- Extended family improved

Slide 6

POVERTY IMPACTS (PRODUCERS) - cont'd

- Housing Conditions:
  - 27%, 8% and 40% of Lakech, Mirte and Lakech + Mirte producers have moved out of their parents residence and either by way of renting or owning their own residences.
  - About a quarter of the producers have owned their own residences after the business.

Quality, size and number of rooms have also showed marked improvement

Slide 7

POVERTY IMPACTS (PRODUCERS) - cont'd

- Income:
  - Average monthly income grew from Etb 127 to Etb 261
  - Lakech producers from Etb 79 to Etb 245
  - Mirte Producers from Etb 295 to Etb 733
  - Lakech + Mirte from Etb 367 to 767
- Income by Gender:
  - Men from Etb 409 to Etb 599
  - Women from Etb 88 to Etb 215

Slide 8

POVERTY IMPACTS (CONSUMERS)

- Quantitative Impacts:

Savings/week	**%**
< 2	8
2 to 4	20
4 to 6	20
6 to 8	16
8 to 10	7
10 to 14	6
14 to 18	7
18+	17

Slide 9

POVERTY IMPACTS (CONSUMERS) - cont'd

- Savings as per cent of total income**:**

Income Group	**C. Mirte**	**D. Mirte**
Low	25.0%	16.0%
Middle	6.5%	4.6%
Upper	3.3%	3.3%

Slide 10

POVERTY IMPACTS (CONSUMERS) - cont'd

- Qualitative Impacts:
  - Faster 69%
  - Less Smoke 55%
  - Safer 83%
  - Convenient 81%
  - Durable 66%
  - Food Taste 60%

	– Cleaner 56% – Good Look 71%

Slide 11

POVERTY IMPACTS (CONSUMERS) - cont'd

- Impacts on Income:

Low Income	Savings/Mont	% of Income
Lakech	17	6
Domestic	50	17
Commercial	74	25
Middle		
Lakech	22	2
Domestic	43	5
Commercial	60	7
High Income		
Lakech	26	1
Domestic	100	3
Commercial	100	3

ANNEX 6

Kenya Poverty Reduction Aspects
C. Kirubi presentation (RETAP)

Slide 1

POVERTY REDUCTION ASPECTS OF IMPROVED HOUSEHOLD STOVE PROGRAMS

THE KENYAN EXPERIENCE

Charles Kirubi,
RETAP, Nairobi

Slide 2

Contents

- Impacts on improved stove producers
- Impacts on improved stove consumers
- Recommendations for way forward

Slide 3

Impacts on stove producers (1)

Key indicators for poverty reduction aspects
Improved Income (Av. Monthly)

Liner	KCJ Prod	Cladder	Marketer	Assembler
$318	$299	$228	$193	$110

Slide 4

Impacts on stove producers (2)

Improved Food Intake

- 76% of producers increased ability to afford "better" nutrition and food intake from previous levels of "poor" and "inadequate"
- marketers and cladders reported nutritional improvements of about 92% and 63% respectively
- 24% of producers reported no change in nutrition despite being in stove business

Slide 5

Impacts on stove producers (3)

Medical Care

- cost-sharing policy introduced in Kenya in mid 90s, hence ability to pay, even for basic services, is critical
- improved access to medicare observed in all sub-groups of producers
- 39% of producers moved from "completely unable to afford" to "able to afford"

Slide 6

Impacts on stove producers (4)

Children's School Fees Ability to Pay

- with the introduction of cost-sharing in public schools in early 90s, coupled with high rates of unemployment, retrenchment, and poverty, ability to pay school's fees is critical to every household
- 43% of producers gained ability to pay fees and learning materials in public and private schools
- 28% gained ability to only pay partial fees

Slide 7

Impacts on stove producers (5)

Shelter and Accommodation

- Nairobi City has a population of 2 million and 65-70% of the population reside in slum areas, therefore ability to afford shelter is an vital indicator for poverty reduction
- 46% of the producers gained financial ability to move from crowded family houses to private rental accommodation
- 14% were able to build private houses in the suburbs of the city, e.g., Ruiru, Kiambu, Thika,

Slide 8

Impacts on stove consumers (1)

Financial saving from use of KCJ

Residential Area	Saving as % of annual income
High-rise	1.5 %
Kaloleni	2.3 %
Kibera	5.2 %
Mathare	4.0 %

Slide 9

Impacts on stove consumers (2)

- **Key finding**: lowest income households (e.g. Mathare) experienced the highest financial savings vis-à-vis the richer income h/holds e.g.

Slide 10

Impacts on stove consumers (3)

Reported qualitative aspects
Perception of consumers on benefits of KCJ

Benefit	**Respondents**

High rise • Hence improved stoves programmes should be targeted to the rich who can afford as well as to the poor, on whom the impact is most appreciable	Increased Safety 82% Convenience in cooking 77% Reduced Indoor Pollution 70% Faster Cooking 62% Better Aesthetics 28%
Slide 11 **Recommendations** a) Establishment and enforcement of quality standards - e.g. through more producer training, information & consumer awareness b) Delivery of financial & business support services - e.g. impart basic business skills and increase accessibility to affordable credit to improve and expand production & marketing c) More support in RD&D on stoves (increase the level of skilled professionals in the area of stove design, testing, evaluation, marketing, e.g. more practical involvement of universities and colleges desirable) d) Education of consumers (necessary to make the market distinguish quality stoves and demand good value for their money. Informed market would be most effective quality check!!!)	