International Conference
"Bio-energy for Sustainable Development in Africa"

Topic: "Promotion of Improved Cook-stoves in Ghana"

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Synopsis

1. The Problem and situation overview

2. What has been done to disseminate improved cookstove technologies in Ghana and

3. What is needed to make the desired impact in the improve cookstove subsector in Ghana

Problem & Situation Overview

- In Ghana biomass is the most dominant source (about 65% of the total energy consumption) of energy and is used significantly in the domestic sector for cooking and many other heat applications

- Woodfuels, in the form of forest wood, charcoal and wood processing residues are the most dominant biomass forms of energy in use in Ghana although crop residue and other non-woody materials also find some usage

- Most rural dwellers heavily depend on fuel wood for all their domestic and other commercial activities that require heat

- Many commercial and institutional establishments all over the country also use biomass

Problem & Situation Overview (Cont.)

- The over-dependence of majority of the population on charcoal and fuelwood as energy sources has contributed to the threat of deforestation and desertification in many parts of the country

- Wood fuel (firewood and charcoal) supply and demand for cooking coupled with inefficient traditional cooking stoves (coal pot, tripod etc) is arguably one of the most threatening energy/environmental issues in Ghana today

- Ghana has one of the highest deforestation rates in Africa (3% per annum), with current levels of wood-fuel consumption far exceeding forest growth/yield

- In the last 50 years alone, Ghana has lost over 70% of its vegetation cover and this still continues at an unrelenting pace

Problem & Situation Overview (Cont.)-Business as Usual

Plate 2: Traditional 3 Stone Stove

Plate 3: Traditional 'Coal-Pot'

Resource for sustained supply of charcoal is threatened by deforestation & desertification in all parts of the country.

Problem & Situation Overview (Cont.)

Interview response from some traditional stove users in Ghana

- “Any time I finish cooking, my headaches and I feel severe itching in my eyes”
- “Before, we used to go just around the house and collect dead wood for fire. Now we have to walk far, deeper into the bush and chop down living trees’

Dissemination of Improved Cookstove Technologies in Ghana

- Improved charcoal stoves are high efficiency stoves that saves fuel or/and eliminates smoke

- There have been many attempts to disseminate various designs of improved cookstove technologies in Ghana

- Design of cookstoves depends on the form of biomass providing the energy and there are differences between stoves used in the rural, urban and institutional/commercial facilities

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

- Cookstove designs and dissemination in Ghana to date is normally targeted at urban dwellers and institutional facilities

- Although significant progress has been made to disseminate improved charcoal cookstoves, very little has been done on improved cookstoves fuelled on firewood

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

- Since 1989 to-date two charcoal cook stove technologies has been introduced on a large scale in Ghana
- These stoves are the Ahibenso and Gyapa Stoves
- Available data shows that the Ahibenso and Gyapa stoves has savings of about 35% - 40% of charcoal over the traditional coalpot
- It also has an efficiency of 39% and a payback period of 6 months in Accra the regional capital where 70% of households uses charcoal as their main cooking fuel

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

1. Ahibenso

- The Ministry of Energy of Ghana pioneered the dissemination of the Ahibenso improved charcoal cookstoves in Ghana in 1989

- Description:

	The Ahinbenso stove is made from steel i.e. scrap metal, mild steel and galvanized steel. The construction process uses simple tools such as hammers and chisels

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

- Some benefits are savings in amount of fuel used to cook, reduced cooking time, reduced accidental burns and improved cooking conditions

- More than 30,000 pieces Ahibenso charcoal stoves are known to have been sold by local artisans to residents of Accra and the other regional capitals by 1993

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

2. Gyapa Cookstove

- Gyapa charcoal stove is a variant of the Kenya ceramic Jiko

- Since 2002, EnterpriseWorks/Vita has focused on the manufacture and commercialization of consumer- oriented designed stoves in Ghana

Description:

- The Gyapa Cookstove is a ceramics lined stove that reduce indoor air pollution, use less fuel, last longer and are safer than traditional stoves

	The Gyapa charcoal improved cookstove is made up of an outer metal casings with a clay liner mounted in the metal casing

Dissemination of Improved Cookstove Technologies in Ghana (Cont.)

- They are manufactured locally and creates jobs for metal workers, ceramists, and retailers
- The Gyapa cookstoves burns less fuel provide tremendous socioeconomic, environmental, and health benefits to stove users and their communities
- Over 200,000 Gyapa improved charcoal cookstoves were sold as at 2008

Case study of 'Toyola' Energy in Ghana

- Core Business: Production and distribution of energy efficient biomass cook-stoves and rural solar products

- Owner/Managers: Suraj Wahab and Ernest Kyei
- 1 of the 78 informal sector artisans trained by EnterpriseWorks to produce energy efficient stoves under the Ghana Household Energy Project in 2003

- Financial assistance by KITE under Africa Rural Energy Enterprise Development (AREED) project in 2006
- Increased sales from 3000 to over 15,000 units per annum
- To date, they have provided over 50,000 households in 6 regions of Ghana with improved/energy efficient stoves.

Elements of the Toyola Model

- Production approach
- ✓ Train unskilled jobless youths into producers
- ✓ Establish rural production centers and
- ✓ Division of labour and specialization in the manufacture of components

- Marketing strategy
- ✓ Markets the product at the door step of the customer in rural and peri-urban communities
- ✓ Undertakes customer education on benefits of the improved cookstoves
- ✓ Uses satisfied customer to promote the stove- *"stove's evangelist"* and
- ✓ Offers credit to retailers, agents and end-users – this is possible due to the patient capital provided by AREED

TOYOLA'S MARKET

- Four main market segments
- ✓ Households
- ✓ Retailers and Agents
- ✓ Salary and wage earners
- ✓ Micro businesses (e.g. local restaurants)

- These are mainly low income-earners
- ✓ Their annual income of USD360 – USD1,000
- ✓ Unable to pay outright but pay in installments
- ✓ Very reliable in their payments
- ✓ Less risky

Lessons from Toyola's Success in Ghana

- The poor can afford improved energy end-use equipment if

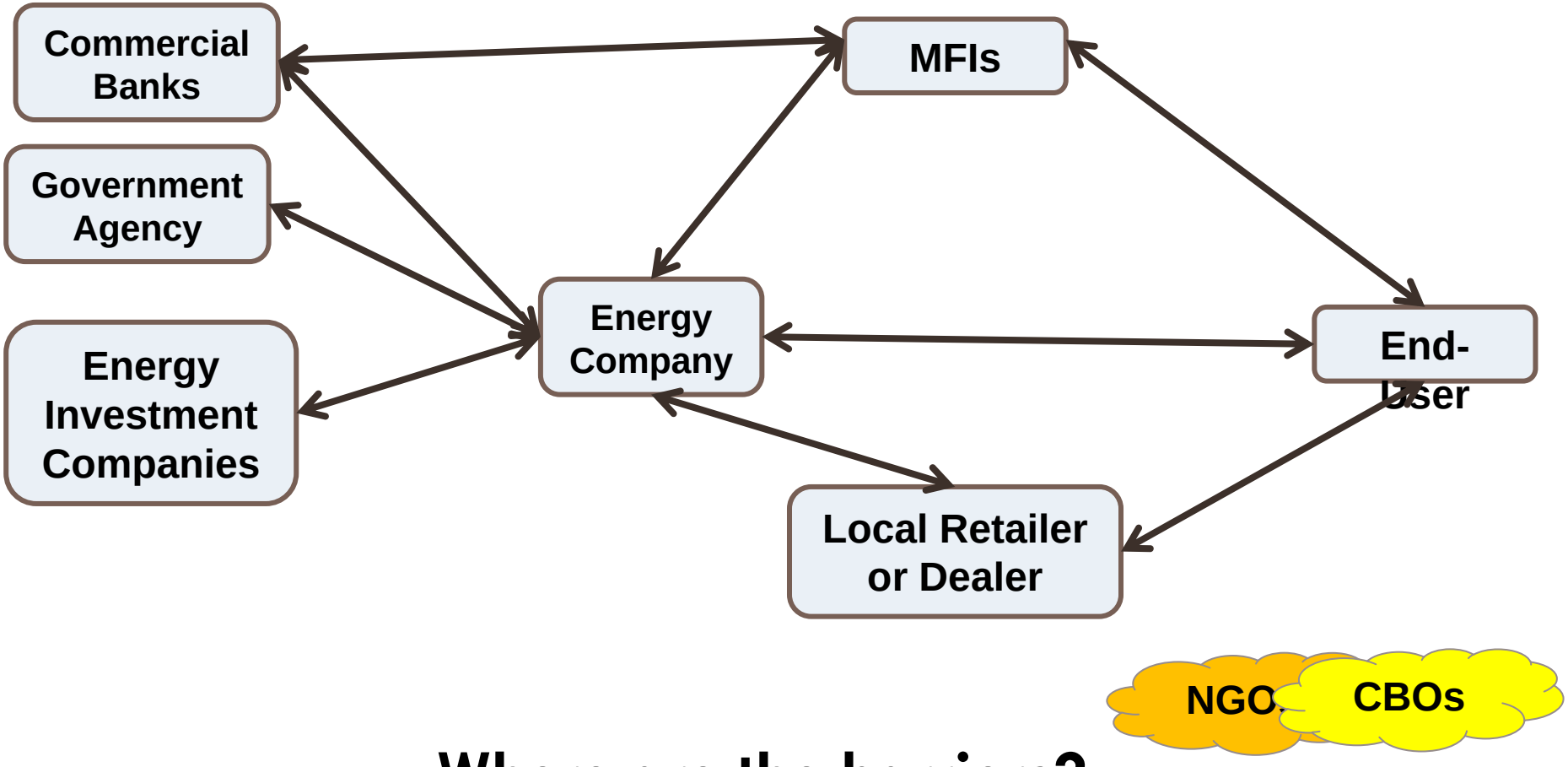
✓ They are aware of the availability of the technology and practical benefits to their life

✓ They are given the necessary financial assistance to enable them pay in installments

- Diversifying target group to include commercial/institutional and domestic markets is appropriate for sustainable business

- The entrepreneurial led model to improved cookstove dissemination is sustainable as donor driven projects ends when funding dries up

Challenges and Barriers



Where are the barriers?

Challenges and Barriers (Cont.)

- High cost of technology (competing need for scrap metals) affects retailers and end-users
- Use of inferior material which affects product quality
- Commercial Banks unwillingness to invest in alternative energy in general and improved cook stoves in particular
- Inability of the manufacturers to communicate with the banks for financial support
- Rural poor have very irregular monthly income

Challenges and Barriers (Cont.)

- Cook stove manufacturers have problem finding startup and growth financing
- Low markets for improved cookstoves in the rural areas
- Weak enforcement of regulations/policies in the wood fuel sector makes redundant efforts to conserve fuel– Because charcoal is cheap
- Inadequate strategies for effective promotion of improved cook stoves in rural and peri-urban areas

On-going Efforts in Ghana

- Market intermediation by NGOs such as KITE and New Energy in areas such as:

- ✓ Enhancing effective communication between financial institutions and cook stove companies
- ✓ Creation of loan/repayment strategies
- ✓ Arranging social marketing to promote the benefits of switching to improved cook stoves

- Public awareness on the negative impact of smoke on the health of women and children by government and civil society

On-going Efforts in Ghana (Cont.)

- Forest regeneration programme (woodlot plantations) by government and civil society

- Technical training of artisans to increase the production base – this comes at a high cost

What is needed Now?

- Transfer of best practices in stove dissemination
- Support for intensifying research and development of cost effective products
- Support for technical and entrepreneurial competence training for rural and peri-urban artisans
- Support to enhance the market intermediation role of NGOs and other actors

What is needed Now? (Cont.)

- Pragmatic policy/strategies and regulatory framework for effective promotion of improved cook stoves in rural and peri-urban areas of Ghana
- Legislation to facilitate switching to improved cook stoves to facilitate market uptake
- Up-scaling successful models such as the AREED supported model implemented by Toyola

What is needed Now! (Cont.)

- Support for intensive public awareness and education on woodfuel conservation
- Support for formal monitoring and evaluation of programmes on fuel saving stoves in Ghana
- Green energy financing (grants, soft loans and donor support) to support policies/strategies and dissemination of improved cookstoves in Ghana

Thank you for your attention