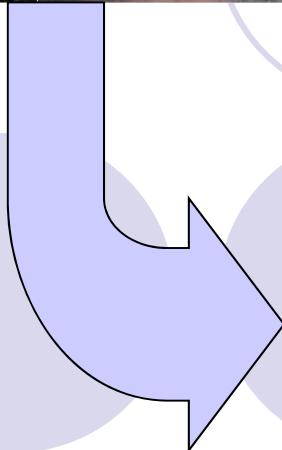




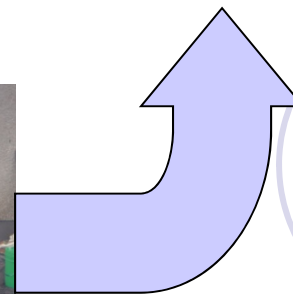
IMPROVED COOK STOVES ACTIVITIES IN TANZANIA BASED ON TaTEDO EXPERIENCES.



Thermal Efficiency more than 45%. Frequency of firewood collection twice per week



Thermal efficiency less than 15%. Frequency of firewood collection is 5 times per week



**IMPROVED COOKSTOVES (ICS) COLLOQUIUM
7th June 2011, NAIROBI.**

PRESENTATION OUTLINE



1.0 Introduction

- * Wood fuel and cook stove situation

2.0 Why promote ICS?

3.0 Historical Development of ICS in Tanzania.

4.0 ICS technology Transfer to households, institutions and micro-enterprises

5.0 TaTEDO Efforts on ICS development and promotion.

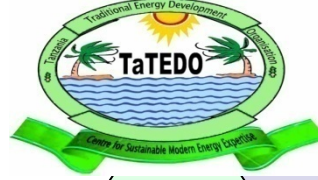
5.1 Opportunities

5.2 Challenges

6.0 Way Forward



Firewood(52 mill.tonnes/y.)



**Solid
biofuels in
Tanzania**



Crop residues-Seasonal



Heap of firewood



Charcoal (1,000,000 tonnes/y.)

The Nations Energy-The Situation is unlikely to improve in the foreseeable future

1.0 WOODFUEL AND COOKSTOVE SITUATION.



- More than 90% of energy consumed is derived from solid biofuel for cooking and heating which is about (52mill.tones) from charcoal, fuel wood and farm residues.
- Utilization of fuel wood in Tanzania is characterized by low efficiencies (three stones fire places and in efficient metal charcoal stove.
- Since late 1980s, there have been several limited efforts to promote ICS in rural and urban areas of Tanzania.



**Cooking Situation
in rural Tanzania**



2.0 WHY PROMOTE IMPROVED COOK STOVES

- To increase efficiency (optimize combustion and maximize heat transfer) of biomass resources use in households, institutions and SMMEs by 50 percent.
- To reduce indoor air pollution from about 6 to 3 tones of CO2 per household per year.
- To reduce drudgery and save time(5 to 2 days a week) for women and children
- To reduce deforestation and land degradation (100,000 to 50,000 ha per year).
- To mitigate climate change effects, sustain biomass supply.
- To enhance local income and employment generation.
- To enable stoves users to access and use many of the smokeless, high efficiency, low to medium cost stove designs already in existence.

3.0 BRIEF HISTORICAL DEVELOPMENT OF CHARCOAL STOVE IN TANZANIA: JIKO BORA- UNDER REDPU PROJECT

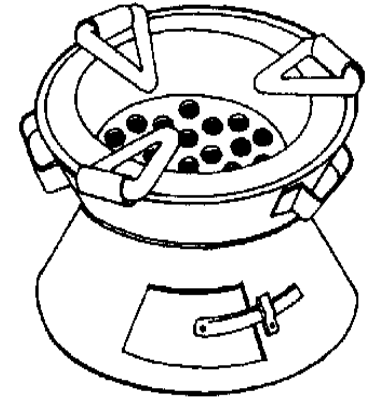


- In 1988, the MEM under the Renewable Energy Development Project Unit (REDPU) launched a pilot project which aimed at:-

- ❖ Designing,

- ❖ Developing and,

- ❖ Disseminating improved charcoal saving cook stoves



KCJ—Jiko
Bora

- The pilot project was sponsored by the World Bank—through IDA credit.
- The pilot project adapted and adopted the metal ceramic design stove from Kenya Ceramic Jiko (KCJ) and was renamed: Jiko Bora with 35 % efficiency

4.0 TaTEDO EFFORTS ON ICS DEVELOPMENT AND PROMOTION



- From 1992, TaTEDO has continued with efforts to develop and promote; improved charcoal and wood fuels stoves ***Jiko Bora*** (ICS) ***and OKOA respectively*** in the Tanzania, dissemination is through local technical and business capacity building followed by promotion.
- Stoves promoted use charcoal, firewood and bio-waste for both. Households and business.
- ICS production and marketing has increased to more than twenty thousand units per month in Dar es salaam city.
- It is estimated that about 500 woodstoves are built country wide per month



4.1 ICS TECHNOLOGY TRANSFER TO COMMUNITIES AND MICRO-ENTERPRISES

TaTEDO approach to ICS technology transfer and skills promotion activities include:

- Establish and develop local institutional framework (LGA, NGO, Private Sector MFIs)
- Community mobilization (participatory planning and needs assessment at local level)
- Capacity building for technical, marketing and entrepreneurship development
- Facilitate scaling up and commercialization through promotional and market network development
- Based on local needs and feedback , undertake adaptive research development and improvement.

5.0 STOVES DEVELOPMENT AND PROMOTION EFFORTS

CHARCOAL STOVES –more than 1.5 mill. Produced and marketed

- Common stove types produced on large scale (20,000 per month).



Bellbottom

Thermal efficiency: 30 - 35%

Fuel Saving: 50%

Prices: Tsh. 11,000/= for size 11

Tsh. 13,000/= for size 14



Straight Wall

- The stoves are widely produced by micro-enterprises,
- Depending on the size, could be used for cooking in households, institutions and SMMEs.

TaTEDO ICS DEVELOPMENT AND PROMOTION EFFORTS CTN...



OTHER CHARCOAL STOVES TYPES



Double Box Type

Thermal efficiency: 30 - 35%

Price: Tsh. 68,000/=



Double Stand with Stoves

Thermal efficiency: 30 - 35%

Price: Tsh. 75,000/=



Sazawa

Efficiency: 44%

Price: Tsh 15,000/=

STOVES DEVELOPMENT EFFORTS CTN--



CHARCOAL OVENS

The following ICS types are used for productive purposes:-



About one thousands (1000) SMMEs are involved either in production or provision of services from these ICS types.

Cooking and Baking Oven



Baking by Charcoal Oven



Charcoal Barbeque

Price: Large Tsh. 550,000/=
Medium Tsh. 330,000/=
Small Tsh. 250,000/=



Roasting Meat by Charcoal Oven

Efficiency

STOVES DEVELOPMENT EFFORTS CTN.....

FUEL WOOD STOVES

Fuel wood stoves include the following types:-

Mud stoves, in most cases are used in rural areas where ability to pay is low



Three Stones Fire Place



A woman in village cooking with Improved Firewood Saving Stove (Ukombozi Stove)

Mud stove



Household mud stove in use

- Efficiency
- Prices
- Number in use

STOVES DEVELOPMENT AND PROMOTION EFFORTS CTN---

OKOA FUEL WOOD STOVES;-are of masonry construction with few metal parts integrated in the construction. Okoa wood fuels stoves are clean and efficient in burning wood with chimneys to provide draft for more efficient combustion and to remove smoke from the kitchen environment-



Low cost brick made okoa fuel wood stove



Institutional Okoa Stove



Water tank

Multifunction, brick made okoa fuel wood stove with water heater.

STOVES DEVELOPMENT EFFORTS CTNUE

FUEL WOOD STOVES WITH OVEN AND WATER HEATER

- Multifunctional (cooking, baking and water heating) okoa wood stove.
- Ideal for use in restaurants and by food vendors

OKOA FUEL WOOD STOVE NO 3





5.2 OPPORTUNITIES.

- Considerable market for ICS exist in urban and rural areas- which has to be developed over long term support through training, extensive promotion, quality control etc
- Production and marketing could be undertaken on large or small scale depending on investment and demand
- Local construction of Okoa ICS allows the construction team to maximize performance by making local design adjustment to specific site requirements.
- ICS can be distributed through formal and informal market networks/sales centres
- Availability of ICS entrepreneurial groups
- Benefit from carbon markets (POA ~VCM and CDM) Willingness of entrepreneurs to produce and users to pay for ICS
- Scarcity of woodfuels and increasing prices of wood and charcoal other fuels



5.3 Challenges

Challenges for scaling up improved cook stoves include:-

- Inadequate policies and strategies, regulatory and institutional framework for supporting promotion of ICS
- Inadequate financing and affordable credit facilities to support improved stoves related initiatives.
- Inadequate awareness on socio-economic and environmental benefits of promoting improved cook stoves.
- Inadequate technical, business and marketing skills for many stoves SMMEs,
- Underdeveloped institutional framework for improved stoves skills transfer to local levels.,
- Poorly developed quality control and monitoring mechanisms for stoves delivered to the end users.
- Inadequate capacity for DiSEDCs to perform their roles and responsibilities
- Low capacity for local Government support in dissemination of ICS

6.0 WAY FOWARD



- Government should formulate and implement realistic and effective wood fuels conservation policies and strategies
- Provide increased financial resources for R & D of quality, durable and working improved stoves are essential
- Enhance technological back-up, strategies, and resources for training and developing market networks (producers, dealers and distributors).
- Strengthen ICS quality control through effective monitoring and market mechanism.
- Urgently formulate and implement, large scale ICS promotion with sustainable biomass production and substitutes (biogas) strategies, here scale and urgency is of essence!!- to conserve forests, reduce GHGs, save women and children!

Harmonize strategies and initiatives with the EAC energy access scaling up strategy. Target 1: At the Country and local levels.



7.0 ABOUT TaTEDO

- Is a sustainable modern energy development organization based in Dar es Salaam with energy activities in 9 regions and in more than 100 villages in Tanzania.
- **Vision:** Poverty free and self reliant communities in Tanzania accessing sustainable modern energy services.
- **Mission:** To Advance popular access to sustainable modern energy technologies in marginalized communities in Tanzania, through technological adaptations, community mobilization, capacity building and advocacy for increased access to sustainable energy services, poverty reduction, environmental conservation and self reliance.
- Has diverse partnership base locally and internationally with GOs, LGAs, NGOs, Private Sector, Donors, and communities.
- Has field experience of more than 18 years on sustainable energy activities - studies, planning, implementation, enterprises and policy support, monitoring and evaluation.
- Has an interdisciplinary team of about 50

**THANK YOU FOR THE OPPORTUNITY AND
YOUR ATTENTION.**



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