

Centre for Sustainable Energy Services

Clean Cooking Forum

30th April 2021, TaTEDO Conference Hall, MbeziJuu, Dar es Salaam, Tanzania

Proceedings



Promoting a thriving Market of Modern Energy Cooking Services in Tanzania (MECS) and East African Civil Society for Sustainable Energy & Climate Action (EASE&CA) Projects

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1.0 INTRODUCTION

More than 85 % of the population in Tanzania approximately 48 million people lack access to clean cooking solutions, costing trillions of shillings a year in damage to health, the climate, and local economies. Changing the way families cook their food, by using clean energy and efficient appliances will help reduce deforestation, drive gender equality, reduce poverty, provide enormous health benefits and slow climate change.

Providing clean cooking solutions to households, institutions and SMEs is crucial to achieving national energy targets, global climate and sustainable development goals.

Accelerating progress towards inclusive access, large scale adoption and sustained use of clean cooking solutions in Tanzania need to be a top political, economic, and environmental priority going hand in hand with inclusive policies and programmes. The process requires efforts, collaboration and coordination to achieve the national sustainable energy for all (SE4ALL)target of more than 75% of the population accessing clean cooking solutions in Tanzania by 2030.

2.0 FORUM OBJECTIVE

On 30th April 2021 TaTEDO organized a forum of clean cooking stakeholders which was held at TaTEDO Conference Hall. The main objective of the forum was to provide opportunity to stakeholders of exploring strategies for strengthening collaboration on efforts to ensure inclusive access, large adoption and sustained use of clean cooking solutions in Tanzania.

Agenda for the clean cooking forum included presentations, group discussions and demonstrations on clean cooking technologies. The programme for the meeting is attached as Annex I.

The forum for clean cooking brought together 40 stakeholdersincluding representatives from Government Ministries and Agencies(Ministry of Energy, Ministry of Industry and Trade, Ministry of Finance and Planning, President's Office Regional and Local Government Administration, Rural Energy Agency (REA), Energy and Water Utilities Regulatory Authority (EWURA), Tanzania Industrial Research and Development Organization (TIRDO)), development partners (European Union(EU) and United Nations Industrial Development Organization (UNIDO)), private sectors, NGOs and media. Annex 2 is a list of the participants.

3.0 WELCOME REMARKS

Eng. Estomih Sawe, the TaTEDO CEO, cordially welcomed all workshop participants and express thanks for accepting the invitation. He also appreciated the financial support from UkAid through Loughborough University and CISU of Denmark through the International Network for Sustainable Energy Services (INFORSE) that enables the forum to be conducted. He said, the forum aim to discuss challenges and opportunities around clean cooking energy and appliances and come up with strategies to address them. He further said clean cooking is key in the efforts to achieve improved livelihoods and economy of the country. He added that energy for cooking will continue to be a challenge not only at household level but also at international and SMEs limiting achievement of the Sustainable Development Goals. Further, he insisted the need for

collaboration as one of the strategy to address challenges in cooking sector. Mr. Sawe wished all participants a fruitful discussions and deliberations. His welcome remark is attached as Annex 3.





Eng. Estomih Sawe and the participants during the welcome remarks

3.0 PAPERS AND DISCUSSIONS

3.1 Ongoing Government Initiatives Towards Development of the Clean Cooking Subsector- (Ms. Joyce Msangi - Ministry of Energy (MoE))

i). **Introduction**

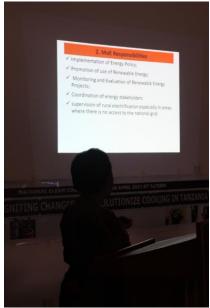
Tanzania is blessed with a diverse energy resources including hydro, solar, biomass, geothermal, tidal and waves, coal, natural gas etc.The Energy Sector in Tanzania is largely dominated by biomass accounting for 85% of the country's energy consumption. The area of Tanzania is 947,300 km² and by 2020 the population was 57.6 million.

ii). Responsibilities of Ministry of Energy (MoE)

- √ Implementation of Energy Policy;
- ✓ Promotion of use of Renewable Energy;
- ✓ Monitoring and Evaluation of Renewable Energy Projects;
- ✓ Coordination of energy stakeholders
- ✓ Supervision of rural electrification especially in areas where there is no access to the national grid.

iii). The Guiding Frameworks In The Cooking Subsector

✓ National Energy Policy 2015; Among other things, it recognizes the importance of the clean cooking energy for economic and social development of the Country;





Ms. Joyce Msangi, representative from MoE during her presentation

- ✓ In this regard it emphasizes on the use of alternatives clean cooking solutions LPG, Electricity, Efficient Cooking Stoves, biogas, charcoal briquettes etc.
 - TBS standards for quality assurance of clean cooking technologies;
 - REA Act, 2005; promoting development of clean cooking energy –supporting installation of institutional biogas and electricity projects;
 - Forest Policy
 - Sustainable Energy for All Initiatives:-Three global goals by 2030;
 - ensuring universal access to modern energy;
 - Doubling the global rate of improvement in energy efficiency; and
 - Doubling the share of renewable energy in the global mix.
 - Tanzania has set a target to have 75% of the population cooking on clean energy by 2030.
 - Energy Efficiency Action Plan Implemented for four (4) years from 2021.
 - SE4ALL Gender Action Plan.

iv). Ongoing Government Initiatives Towards Development of the Clean Cooking Subsector

- √ The following are the government initiatives towards development of the clean cooking subsector: -
 - Promotion of alternatives sources of energy for cooking such as the use of LPGs and natural gas.
 - Coordinating and promoting energy efficient cooking stoves.
 - Development of Integrated Clean Cooking solutions 30 Million Euro from the EU to support mainly private sector Implementation to commence in FY 2021/2022 (4 years).
 - Development of the Biomass Energy Strategy under support of the EU through Energy Sector Reform Programme.

- Establishment clean cooking standards (MoE the sector Ministry to guide TBS on formulation of standards).
- ✓ Sustainable Energy for All (SE4ALL)programme.
- ✓ Development of Energy Efficiency Action Plan.
- ✓ Energy Sector Reform Programme.

v). Conclusion

- ✓ Clean cooking energy is one of the key component that Government is putting effort to address the current situation that will result into improved health conditions, environment and economic situation.
- ✓ MoE is warmly inviting private sector to work with the Ministry of Energy and is ready to
 receive opinions on how we can improve the clean cooking subsector and offer its support
 whenever is needed.

vi). Questions/Comments Posed to Ms Joyce and Responses / Contributions from Participants

• Result Based Financing Programme

A representative from REA, Eng. Deusdadit E. Maluluinformed that government is currently providing subsidy to Taifa Gas through Result Based Financing. He said there is possibility forother clean cooking solution to benefit from the same arrangement. The challenge is how to package the idea in a convincing way so as to get support through the program.

• SE4ALL Gender Action Plan

Gender issue is vital in clean cooking matters. TANGSEN worked with government in preparation of SE4ALL Gender Action Plan. A concern was raised since SE4ALL Gender Action plan was not mentioned in the presentation of the representative from the Ministry of Energy.

> SE4ALL Gender Action Plan is one of the government documents and the expected support from EU programme will facilitate its implementation.

• Biomass Energy Strategy (BEST)

Due to pending efforts being undertaken through EU program to prepare another biomass energy strategy, would like to know what happened to the previous one

There were some requirements by government which were not met. Efforts to review it were undertaken, although it was not successful due to shortage of funds. It is also important to take initiatives since the time frame for the previous strategy ended in 2020.

Clean Cooking Supporting Funds

It was asked and advised if there are possibilities to secure more funds from different sources and stakeholders to finance clean cooking initiatives. (UNIDO representative, Akim)

3.2 Clean Cooking Solutions, Opportunities and Challenges: TaTEDO and SESCOM Experience – (Mr. Shukuru Meena – GEEE Manager, TaTEDO)

i). Introduction-Cooking Energy Context

- ✓ More than 85% of the households in Tanzania cook with either firewood or charcoal in low efficient stoves (NEP 2015)
- ✓ Charcoal consumption in 2014 was more than 2.3 million tones
- ✓ The estimated revenue in charcoal business (2014, ME BEST) was about Tshs. 2 trillion.
- ✓ The use of electricity for cooking is less than 3% and Gas (LPG) is 5.1% (REA,NBS 2020)
- ✓ Charcoal production and its consumption is not sustainable (ME, BEST, 2014)
- ✓ Degradation of forest is at the rate of 469,871 hectares per year (URT, 2019)contributing to environmental degradation, climate change, health problems and death.



Mr. Shukuru Meena from TaTEDO during presentation

ii). Government Efforts on Clean Cooking

- ✓ Tanzania energy policy promotes firewood and charcoal alternatives including gas, electricity, Biogas, etc.
- ✓ Tax, subsidies were introduced by the government on gas.
- ✓ Efforts to promote the use of improved stoves have been initiated though with limited success.
- ✓ Recently, the Government established a task force on charcoal issues.
- ✓ The government has scaled up efforts to generate and ensure greater access to electricity for all.
- ✓ Despite significant efforts by the government, only 37.7% of all households in mainland Tanzania have connectivity access to electrify(REA, NBS 2020).
- ✓ Significant efforts to develop mini-grids have been made; where more than 109 have been developed with capacity of 157 MW (TaTEDO, WRI 2017).

iii). Effort by Other Stakeholders

- ✓ Different NGOs and private sector/ companies under support of Development partners have made some efforts to reduce consumption of firewood and charcoal by;
 - Promoting the use of improved firewood and charcoal stoves.
 - Promoting and increasing the use of LPG in urban and rural areas.
 - Promoting the use of charcoal briquettes-UNDP/GEF
 - Promoting the use of bio-ethanol-UNIDO Support
 - Promoting the use of biogas.
 - Promote use of electricity for cooking

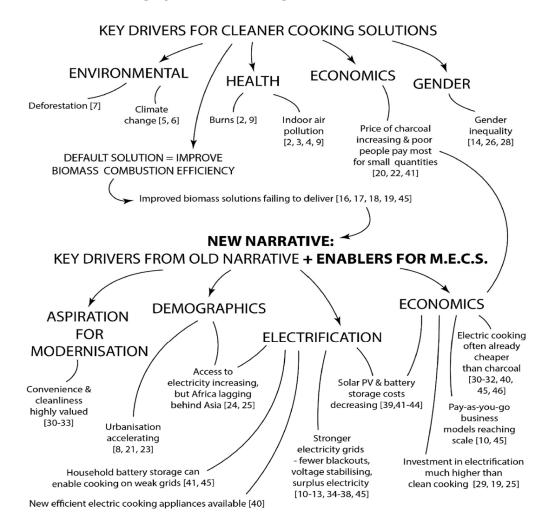
iv). Assessment of the Considered Cooking Options in Tanzania

- ✓ Biogas initial costs and tedious operational practices have limited its adoption; less than 0.1 percent use biogas
- ✓ ICS (firewood and charcoal), have had limited success due to several factors, limited policy, institutional support and financing, less than 10 percent use ICS.
- ✓ Dependence on biomass is not sustainable in the long term.
- ✓ LPG, taxes waived, used by 5.1% of the population, all is imported and not considered a long-term sustainable solution.
- ✓ Natural gas available and piloted, but require high investment for its supply and demand development of infrastructure hence limited access.
- ✓ Electricity, less than 3 % of the population cook with electricity due to high initial cost of the appliance and high monthly bills.
- ✓ High efficient electric cooking appliances, electric pressure cooker (EPCs) is emerging as an important clean cooking solution option.

v). Clean Cooking Energy Market in Tanzania

- ✓ Clean cooking energy market in Tanzania is under developed, as such is dominated by solid bio-fuels (>85%)
- ✓ Inefficient biomass stoves dominate.
- ✓ Government has set a goal of 75% of households to have access to clean cooking by 2030.
- Clean cooking solutions on the list of promotion include LPG, biogas, ICS, bioethanol and electricity.

vi). Drivers for Scaling up Clean Cooking Solutions



vii). Enablers for Scaling Up Clean Cooking Solutions

Key enablers to scaling up clean cooking services:

- ✓ Appropriate support services such as:
 - Awareness raising on availability and benefits of clean cooking services
 - Capacity development on technology, business (marketing) and management for suppliers and agents.
 - Innovative Financing for suppliers and users
 - After sales services; spares, repairs
- Enabling Environment
 - Supportive policies, strategies
 - Strong institutional framework (national-local level)
 - Tax subsidies and other financial incentives etc.

viii). Barriers to Scaling up Clean Cooking Solutions

Despite the many known benefits of clean cookstoves for health, environment and climate change, large scale adoption is not happening due to the following barriers:-

National levels

- ✓ Limited enabling environment (policy and institutional framework).
- ✓ Inadequate support services (awareness, promotions, capacity building)
- ✓ Lack of appropriate business models along the market chain.

Producers/suppliers/ Distributors

- ✓ Lack of investment capital to start production and business.
- ✓ Lack of working capital to run business operations
- ✓ Licensing

Stoves/ appliances users.

- ✓ Lack of awareness on availability and benefits of clean cooking.
- ✓ Poor access to clean cook stoves-Limited availability.
- ✓ Low affordability of clean cook stoves.
- ✓ Concerns of safety, convenience and durability of the new stoves.
- ✓ Cultural resistance to clean cooking solutions (habits, food taste).

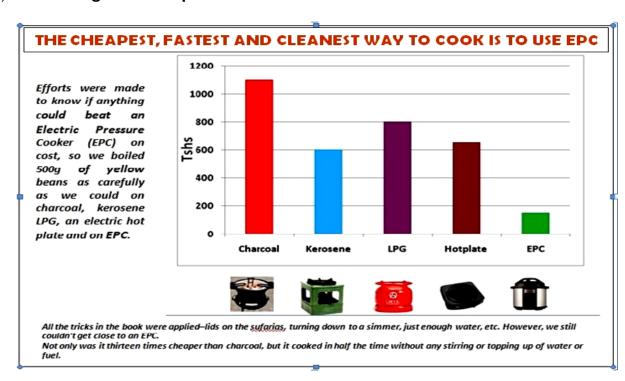
• E-cook Initiatives in Tanzania

- ✓ The e-cook initial market study was conducted by TaTEDO, GAMOS, University of Surrey and Loughborough University in 2017.
- ✓ It was noted that cooking with electricity is now competitive and even cheaper than cooking with LPG, kerosene, or charcoal in urban, peri-urban and in rural settings.
- √ The positive findings of the eCook Study
- Motivated TaTEDO and partners to initiate efforts towards developing sustainable delivery/business models for scaling up uptake of efficient eCook appliances.

Some take Away from the study;

- ✓ Cooking with charcoal consume 5.5 times more energy compared to gas, and 13 times more compared to using Efficient electric pressure cooker.
- With energy efficient appliances like EPCs, one can cook with less than 2kWh/day which is equal to 720 Tshs (30 \$c.) for national grid users.
- ✓ Cooking practices can have as much influence on energy use as appliances and fuels, so could reduce this to below IkWh/day(covering pots)
- ✓ The total cost for cooking all foods using EPC ranges 21,900-25,000 per month.
- ✓ The food prepared using EPC was more delicious.

ix). Cooking Cost Comparison



x). What is Electric Pressure Cookers (EPC)

Electric pressure cookers consist of a pressure-cooking container (inner pot), temperature & pressure sensors, and an electric heating element. Heating is controlled by a built-in microprocessor based on the readings of the pressure and temperature sensors."

xi). Characteristics of Quality EPC

- A good EPC should be insulated to minimize heat loss.
- Has automatic control of the cooking process-save time.
- Is pressurized for fast cooking.
- It should have multiple safety measurers

xii). Some Pros and Cons of EPC

Pros

- ✓ Can cook verities through boiling, steaming, baking etc.
- ✓ Consume very little energy (e.g. beans can be cooked by 0.4-0.5 units)
- ✓ Energy efficient, can save up to (85%), time and money
- ✓ Retains food nutrients.
- ✓ It is safe
- √ It is convenient
- ✓ Environmental protection-no harmful emission

Cons

- ✓ Use only one type of pot
- ✓ Not for deep-frying, nyama choma BBQUE

xiii). Efforts to Promote eCook in Tanzania

The support from UKaid and ESMAP in MECS programme which is managed by Loughborough University, enabled TaTEDO and partners in Tanzania to make efforts to promote EPCs by;

- ✓ Undertaking Market and Business Study and came up with an approach to design Delivery/business Models of Clean Energy Cooking Services in Tanzania. The study assessed the market systems consisting of :
- ✓ Market chain, support services and enabling environment.
 - o Who are the actors along the market chain-
- ✓ Understanding the socio-economic and cultural factors affecting adoption of efficient appliances.
 - What are the gaps/ needs/supporting services

xiv). Findings of the assessments lead to;

1. Promote support services along market chains:

- ✓ Awareness creation.
- ✓ Capacity building.
- ✓ Financing through linkage with MFIs.
- ✓ Sustainable supply of appliance

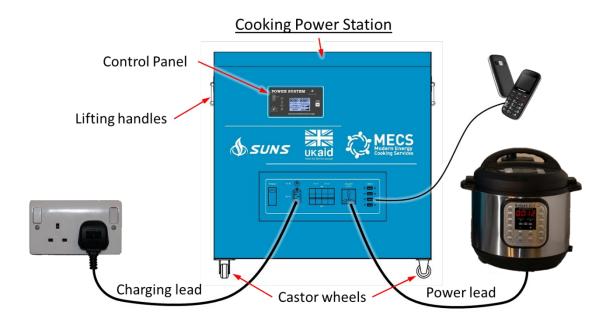
Network of agents

2. Undertake lobbying and advocacy

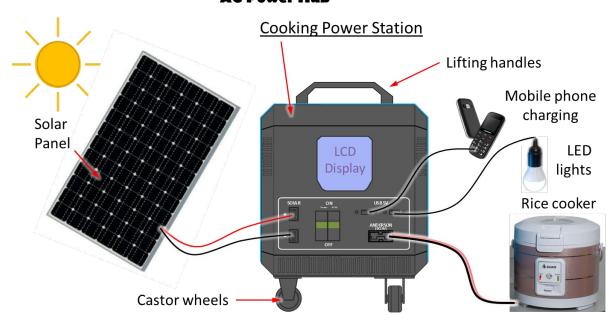
- ✓ To influence the government for fostering enabling environment.
 - Lobby for tax waiver
 - Subsidy to end users through TANESCO/REA

xv). Piloting Battery Supported Systems for Cooking

- ✓ Assessing the performance, Barriers and immediate impact of Solar PV for cooking to ongrid and off-grid areas.
- ✓ Aims is to mitigate high power draws and blackouts during cooking in on-grid areas (AC Power-hubs and support full day cooking in off-grids (DC Power hubs)



AC Power Hub



DC power hubs

- Currently testing of 33, 40
 and 65lts EPCs is taking
 place for Tanzania Recipes
- Fit for SMES, restaurants, schools, hotels
- Replication after field tests.



xvi). Selected Achievement on eCooking

- ✓ Developed three Sustainable Energy Services Support Centres
- ✓ Developed capacity of 37 women groups, 14 MFIs and 20 sales agents now marketing EPCs
- ✓ Undertook cooking practices study (cooking diary, focus group discussion and Choice modelling) in Kilimanjaro, Morogoro and Dodoma,
- ✓ Rebranded former NIKAI EPC to SESCOM EPC brand
- ✓ Imported 1450 units of SESCOM electric pressure cookers from manufacturers to meet fast growing market demand.
- ✓ Supplied more than 800 EPCs to end-users who have now transitioned to using electric pressures cookers for most of their cooking-urban/ rural
- √ Lobbying for Tax exemption on EPCs (GoT- MoE/ MoFP)
- ✓ Prepared and Published Tanzania eCook Books (English and Swahili)
- ✓ The SESCOM brand of EPC has worn the Global LEAP Awards as the best in terms of efficiency, durability and affordability. (80.5%)

vii). SESCOM EPC Test Results-Global Leap

SESCOM MY-CJ6001W Model

Medium AC Power





SPECIFICATIONS

Capacity (L)	6
Nominal Voltage & Frequency (V / Hz)	230 Vac / 50 Hz



TEST RESULTS

	Total Energy Consumption (Wh)	400.9
	Average Power Draw (W)	984.4
Heating Phase	Thermal Efficiency (from 30-90°C)	80.5%
	Temperature: Max (°C)	112.4
	Time to Reach Pressure Cooking Phase (min:sec)	26:22
	Total Energy Consumption (for 30 min; Wh)	27.4
Pressure Cooking	Average Power Draw (W)	54.7
Fressure Cooking	Temperature: Max / Min / Ave (°C)	112.4 / 104.7 / 107.8
	Pressure: Max / Min / Ave (kPa)	69.2 / 34 / 47.1
	Calculated Total Energy Consumption (for 20 min; Wh)	170.0
	Average Power Draw (W)	340.0
Sauté Cooking	Temperature: Max / Min / Ave (°C)	154 / 110.2 / 144.5
	Temperature Stability (% time in ideal range)	77
	Time to Reach Sauté Temperature (min:sec)	05:50
Affordobility	Unit Price (\$-\$\$\$\$)	\$
Affordability	Estimated Annual Operating Cost (at USD\$0.20/kWh)	\$43.67



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xvii). Awarded Wining Certificate



xviii). Policy Recommendations

For e-cook efforts to succeed, the following policy issues need consideration:-

- ✓ Government commitment and strong leadership through effective policies and progressive policies is required.
- ✓ The ongoing focus on electrification for lighting and productive uses, need to include electricity for cooking.
 - o REA and TANESCO to subsidize and provide cooking services to their customers
- √ To encourage suppliers to import quality EPCs, tax waiver (TRA, TBS, FCC)
- ✓ Incentivize Local production of EPCs-Ministry of Industry, Trade
- ✓ Support establishment of market and service networks to accelerate access
- ✓ Support suppliers, distributers and end users to access affordable financing.
- ✓ Support consumers to understand benefits and the need for behavioral change and adopt greater use of EPCs.
- ✓ Close collaboration among key stakeholders under the Government leadership (PPT) is required in order to achieve large-scale adoption and sustained use of clean cooking appliances, in particular the EPCs.

xix). Questions Posed to Mr. Shukuru and Responses/Contributions from Participants

Q1: What is the price of SESCOM EPC? (Mr. Max, EU)

Retail price is 180,000 while agents' price is 150,000. There are ongoing efforts for tax waiver requests to the Government, this is will reduce price and ensure more households can afford and acquire EPC.

O2: EPC Manuals

A2: Most of appliances come with complicated manuals written in foreign languages. It was posed and advised if there are possibilities of having simple manuals written in Swahili our Language and reflective to users' environments.

There is need to collaborate to find out a better way to import and disseminate these clean cooking technologies/appliances so as to ensure that users' requirements are met. (Mr Malulu, REA)

- SESCOM and TaTEDO has translated, simplify and develop Swahili manuals that is provided to every customer/user.
- There are also books (eCook books) with common Tanzania recipes demonstrating how to cook them using EPC, and so many other printings that provide awareness on cooking with electricity using EPC as a clean cooking solution.

Q3: Usages of EPCs

Q4: Does SESCOM EPC cook specific type of food or can cook varieties. (Dora,)

- > SESCOM EPC can cook various types of food stuffs. Some of Tanzania recipes that can be cooked using EPCs include Ugali, Kande, Rice, Beans, Pilau, Beef, vegetables to mention few, and can also be used for baking.
- It has some little limitations in performance like deep frying (Chips, Mandazi) and barbeque.

Q5: To what extent does SESCOM EPCs penetrated to the market and how many EPC have been sold so far?

A5: The following were answers for this question:

- Several awareness creation sessions, promotions and marketing efforts has been undertaken at small (demonstrations and trainings) and large scales (through televisions, newspapers, social medias) all is to ensure information is heard everywhere. In collaboration with other stakeholders, several Regions in Tanzania has been physically covered including Dar es Salaam, Kilimanjaro, Dodoma Morogoro, Singida, Manyara, Arusha, Southern and lake zones. Orders are being received from various regions all over the country and nearby countries and are being served through SESCOM centres (Dar es Salaam, Kilimanjaro and Dodoma) as well as sales agents.
- More than 500 EPCs have been distributed so far since 2020 when the first SESCOM brand consignment was received. However, before that more than 300 NIKAI brand EPC were distributed since 2017 when e-cook initiatives in Tanzania emanates from initial market study was conducted by TaTEDO in collaboration with GAMOS, University of Surrey and, Loughborough University in 2017.

4.0 GROUP DISCUSSIONS

Four groups were formed classified into; government institutions, CSOs, Private sector and development partners. The following questions guided the discussions for the four groups: - Based on what were have discussed in the forum, what should be done to develop clean cooking sector in the country. Specifically:-

- 1) What is the Way Forward?
- 2) How your Organization will contribute to achieve issues identified in the way forward?
- 3) How are we going to collaborate to achieve them?

4.1 Presentation from Groups

a) Government Institutions

i) Government institutions suggested way forward: -

- √ Implement energy policies for issues related to clean cooking
- ✓ Set strategies that will address clean cooking.
- ✓ Government to coordinate issues related to clean cooking and roles of each ministry to be clear to the implementers
- ✓ Create awareness regarding available opportunities related to clean cooking.
- ✓ Formulate more funding windows related to clean cooking.



Eng. Deusdadit E. Malulu, from REA during group presentations

ii) How government will contribute in achieving the proposed actions

- ✓ Ministry of Energy will emphasize and coordinate implementation of actions/issues related to clean cooking as stipulated in the national energy policy.
- ✓ PO-RALG to ensure conducive environment for implementation and support sustainability of the clean cooking initiatives.
- ✓ EWURA to proper regulate prices of clean cooking fuels for positive results (e.g. LPG).

- ✓ REA to create enabling environment for implementation of clean cooking solutions e.g. provision of grants, affordable loans, etc.
- ✓ MIT to promote investment on clean cooking industry.
- ✓ TBS to establish and enforce standards for clean cooking fuels and appliances.

iii) How government will collaborate for the proposed action to be achievable

- ✓ Conduct and participate in regular forums/meetings among stakeholders and the government
- ✓ Players in the sector need to create awareness to the government regarding economic, social and environmental potentials of clean cooking

iv) Questions and Answers

Q. Which means or mechanism will be used to let people aware of the financing opportunities to be offered by REA for the clean cooking?

A. Information will be made available to the public through newspapers, social media, etc.

b) Civil Society Group

i. CSOs proposed the following as a way forward: -

- ✓ Raise awareness and introduce laws/regulation, which will require all institutions and households to use clean cooking fuels and appliances.
- ✓ Facilitate access to finance to suppliers, distributors and end users to make clean cooking solutions affordable.
- ✓ Build capacity of on production, usage and after sale services.
- ✓ Lobby and advocate to the government for supportive policies including tax exemption and budget allocation for clean cooking solutions.

ii. How CSOs will collaborate to achieve the proposed actions

- ✓ Uniting together and coming up with the alliance for clean cooking
- ✓ As a short-term strategy, establish WhatsApp group for clean cooking stakeholders.
- ✓ Collaborate to mobilize resources for regular advertisement in media on clean cooking solutions.

C) Private Sector group

- i. Private sector have realized that the government is ready to assist them in development of clean cooking sector. The private sector proposed the following as a way forward:-
 - ✓ Private sector to come together with one voice and ask government support such as
 - To remove barriers for wide dissemination of clean cooking solutions. Some of the barriers include:-
 - VAT on clean energy and appliances
 - Waive on import duty and taxes
 - Financing mechanisms
 - Incentivize the clean cooking solutions through subsidies (extend subsidies to other clean cooking solutions/technologies apart from LPG)

- Impose penalties on polluting cooking technologies.
- o Put in place clear supportive legal frameworks (strategies and action plan).

ii. How private sector will contribute to achieve the proposed actions

- √ Indicate willingness to come together
- ✓ Offer time and resources for coming together
- ✓ Share successful business models.
- ✓ Articulate, document and packaging of support needed from the government, private sector and other stakeholders.
- ✓ Training and awareness

iii. How Private sector will collaborate to achieve the proposed actions

- ✓ Through participation in clean cooking forum
- ✓ Information sharing among clean cooking actors/partners
- ✓ Working with government and other stakeholder
- ✓ Prepare timetable for implementation of clean cooking agenda.

D) Development Partners

- ✓ Government to ensure policy, regulatory framework and strategies are conducive for inclusive access, large and sustained adoption of clean cooking solutions in Tanzania. This will include updating the Biomass Energy Strategy, charcoal and forest management regulations, tax exemptions and awareness creation.
- ✓ Support stakeholder of clean cooking to establish entity that will coordinate them for increased voice.
- ✓ Facilitate private sector to access finance by liaising with local banks, international banks, investors, development banks, etc. and green financing.
- ✓ Provide technical assistance to private sector to be able to prepare bankable proposals, conduct feasibility studies, etc.
- ✓ Provide direct financial support e.g. Cook fund Investment Grants, start up and up grading capital for innovative approaches, Result based Financing.
- ✓ To end users, raise awareness, ensure affordability of clean cooking energy and appliances, and facilitate access to micro financing for flexible payments.
- ✓ Coordination and regular sector review. Conduct regular forums for clean cooking including match making events, expo and exhibitions, etc.

5.0 DEMONSTRATION ON CLEAN COOKING SOLUTIONS

Participants of the meeting were given an opportunity to visit the TaTEDO Clean Cooking solutions support services centre or demonstration area. They were able to see different technologies promoted by TaTEDO including electric pressure cooker (EPC) and various types of improved firewood and charcoal stoves some insulated by clay liner and some by ceramic fiber blanket. They also saw efficient baking ovens, meat roast ovens, briquettes made from coconut husks and charcoal dust. There was live demonstration on how to use electric pressure cooker (EPC) for cooking, use of efficient charcoal oven for cake baking and oven for meat roasting.



6.0 WORKSHOP RESOLUTIONS

The main resolution of the forum was to strengthen collaboration through the formation of the CLEAN COOKING ALLIANCE OF TANZANIA.

Other Resolutions are:

- Rise awareness of the Clean Cooking Solution for all end-users in Tanzania,
- Conduct regular forums and having a day for clean cooking once per year which will have match making events, expo and exhibitions
- Exchange Knowledge and Information through Social Media Groups for Clean Cooking
- Negotiate with the Government to extend Result Based Financing practiced by REA in the LPG to other Clean Cooking Solutions such Electric Pressure Cooking,
- Formulate more funding windows for developing clean cooking services in Tanzania
- Negotiate with the Government for the Tax and Import Duty Exemption during Importation of Clean Cooking Appliances

7.0 CLEAN COOKING TASK FORCE

A small taskforce was formed led by TaTEDO to carry out the process of the alliance formation including drafting the constitution. The committee is comprised of the following representatives:-

- 1) Mr. Finias Magessa (Nishati Associates)
- 2) Mr. Mohamed Kadhi (Consumer Trace Choice)
- 3) TaTEDO team
- 4) Ms. Diana Doreen Kasimili (CSADO)
- 5) Mr. Tondole Vitus (CAN Tanzania)

The committee was required to start the given tasks as soon as possible and liaise with different participants for views and support where necessary.

ANNEXES

Annex I: Meeting Programme

Time	Activities	Responsible
08.30 -09.15 am	Registration	Ms. Katarina, TaTEDO
09.15 - 09.35 am	Introduction of Participants & Objective of the Meeting	Ms. Mary, TaTEDO
09:35 – 09:45 am	Welcome Remarks	Mr. Sawe, TaTEDO CEO
09:45 – 10:15 am	Presentation on Clean Cooking Related Policies in Tanzania & Discussions	Ms. Joyce Msangi, MoE
10:15 – 10:45 am	Clean Cooking Solutions: Opportunities and Challenges, TaTEDO& SESCOM experience & Discussions	Mr. Shukuru, TaTEDO
10:45 – 11:30 am	Tea Break/Group Photo	All
11:30 – 12: 00 pm	Press Release –Policy Recommendation on Scaling up Clean Cooking	Mr. Shukuru on behalf of Clean Cooking Stakeholders
12:00 – 01:00 pm	Discussions and Agreement on way forward and towards Enhancing Stakeholder's Collaboration	Mr. Jensen, TaTEDO
01:00 – 01:45 pm	Demonstration on Clean Cooking Technologies and Services	TaTEDO
01.45 - 02.45 pm	Lunch	All
02:45 – 03:00 pm	Vote of Thanks & Departure	Organizer & Participants

Annex 2: List of Participants of the Clean Cooking Forum

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4 0.	Anande Ngaya	SESCOM	Procurement Officer	0688 959203

Annex 3: Welcome Remarks

MANENO YA UFUNGUZI WA MJUMUIKWE (FORUM) YA WADAU WA NISHATI NA TEKNOLOJIA SAFI ZA KUPIKA

Wapendwa wawakilisha toka Wizara ya nishati, Ofisi ya Raisi TAMISEMI, Wizara ya Viwanda

Wawakilishi kutoka Washirika wa maendeleo, EU, UNIDO and UNDCF

Wawakilishi wa tasisi za serikali, REA, EWURA, TBS

Wawakilishi wa Asasi zisizo za kiserikali pamoja na wa sekta binafsi

Waandishi wa Habari,

Wageni Waalikwa.

Mabibi na Mabwana.

Bwana Yesu asifiwe, Aleikum salaam.

Nawasalimu kwa jina la Jamhuri ya Muungano wa Tanzania

Awali ya yote tunamshukuru Mungu kwa neema na rehema zake nyingi kwetu.

Kwa niaba ya Menejimenti na Bodi ya TaTEDO, wadau wa nishati na teknolojia za kupikia, napenda kuwashukuru kwa kuitikia wito wa kushiriki katika mjumuiko huu wa kujadili changamoto na maendeleo ya nishati na teknolojia safi za kupikia. Kipekee tunawashukuru maafisa wa serikali ikiwa ni mdau mkuu na muhimu kutoka Wizara ya nishati, TAMISEMI---, Taasisi za serikali ikiwemo REA, EWURA, TBS kwa uwakilishi kutoka ofisi za Dodoma. Hii inatudhihirishia umuhimu serikali inatoa katika suala zima la nishati na teknolojia za kupika.

Naomba nichukue nafasi hii kuwashukuru kwa kipekee kabisa, Shirika la Maendeleo la Uingereza UKaid kupitia Chuo Kikuu cha Loughborough na CISU kupitia INFORSE ya Denmark kwa kufadhili juhudi zinazotuwezesha kutekeleza mradi huu wa kukuza juhudi na masoko ya teknolojia safi za kupika..

Tukiwa wadau wa maendeleo ya sekta hii ya nishati, tunaelewa, kupika kwa nishati safi na kwa teknolojia sanifu na endelevu ni muhimu kwa maisha bora na maendeleo ya uchumi wa taifa letu. Kupika kutaendelea kubakia kuwa hitaji muhimu na la msingi la kila kaya na katika kufikia malengo ya maendeleo endelevu ya Umoja wa Mataifa likiwemo lengo namba 7 na pia makubaliano ya Paris. Hapa nchini zaidi ya asilimia 85 ya watanzania wanategemea nishati za kuni na mkaa kupika, nishati ambazo siyo safi wala salama. Kutokana na ripoti ya hivi karibuni (REA na NBS 2020), inaonesha kuwa asilimia 63.5 ya kaya zote Tanzania zinategemea kuni kama nishati kuu ya kupikia, ikifuatiliwa na asilimia 26.2 ya kaya za mijini hutegemea mkaa, asilimia 5.1 hutegemea gesi (LPG) na ni asilimia 3.0 pekee hutegemea umeme.

Sote tunaelewa kuwa sehemu kubwa ya kuni na mkaa huwashwa kwenye majiko yasiyo sanifu kama Jiko la mafiga matatu lenye ufanisi wa chini ya asilimia 10 ndilo linatumiwa na zaidi ya asilimia 95 ya watanzania waishio vijijini. Aidha katika sehemu za mijini kaya nyingi hutumia jiko la bati la mkaa

lenye ufanisi wa chini ya asilimia 15. Matumizi haya ya kuni na mkaa yanachangia sana katika uharibifu wa mazingira na kuathiri afya na maisha ya wantanzania wengi (Zaidi ya wantanzania 27,000 hupoteza maisha kila mwaka kutokana na kuvuta moshi utokanao na kupika kwa kuni na mkaa, WHO/SDE/PHE/07.01 YA 2002). Pia hali hii huchangia katika uharibifu na kutoweka kwa misitu. Hapa nchini, zaidi ya hekta 469,871 za misitu ya asili hutoweka kila mwaka URT, 2019) na idadi hii ya upotevu inaongezeka kutokana na ongezeko la watu.

Tunashuhudia serikali ikishirikiana na wafadhili mbalimbali ikifanya juhudi kubwa zinazolenga kuendeleza na kusambaza umeme wa gridi na umeme wa mitambo na mitandao midogo (mini grids) . Kwa taarifa za hivi karibuni, umeme umeweza kufikia asilimia 78.4 ya watu katika nchi yetu, ingawa kiasi cha watu kilichounganishwa na kinachotumia bado ni kidogo kwenye asilimia 37.7. Umeme kwenye kwa kaya nyingi unatumika zaidi kwa ajili ya kuwasha taa, kuchaji simu, redio, TV na matumizi mengine madogo. Kaya zenye umeme zinalazimika kununua nishati nyingine kama gesi, LPG, Mkaa na Kuni kwa ajili ya kupikia. Wananchi wengi hawatumii umeme kupikia kutokana na bado wana taarifa zilizozoeleka kuwa kupika kwa umeme ni ghali na mara nyingine hatari.

Kubadilisha dhana hiyo na teknilojia za kupikia, ni muhimu sana katika maendeleo ya nchi yetu hasa ya kuwa sasa tumeingia uchumi wa kati, wengi tunatumia smart phones na muda sio mrefu tutaungana na nchi nyingine duniani kutumia magari ya umeme. Huu unatakiwa uwe mkakati muhimu wa kutuwezesha kufikia malengo ya maendeleo endelevu ya umoja wa mataifa na ya nishati endelevu kwa wote ifikapo mwaka 2030.

Wapendwa Washiriki na wadau muhimu,

Pamoja na faida nyingi zitokanazo na kupika kwa nishati safi, ikiwemo afya, mazingira na uchumi, bado hapajakuwepo mafanikio ya kutumika kwa wingi nishati na teknolojia safi za kupikia. Hali hii inatokana na sababu kadhaa, za kisera, za wajasiriamali na za watumiaji wa nishati na teknolojia safi. Sera na mikakati ya kuendeleza nishati na teknolojia za kupika zinapewa kipaumbele kidogo sana na imepelekea kutokuwepo bajeti ya na uwekezaji wa kutosha wa kukuza upatikanaji na matumizi ya nishati na teknolojia safi za kupikia.

Kutokana na uelewa mdogo, baadhi ya teknolojia za kisasa za kupikia zinazoagiziwa kutoka nje hutozwa kodi ya zaidi ya asilimia 40 ya bei ya kununulia na kuzifanya teknolojia hizo kuwa za ghali na hivyo kaya nyingi kushindwa kuzimudu.

Mara nyingi juhudi nyingi na nzuri zinazoendelea za kuwafikishia wananchi umeme kwa ajili ya kuwasha taa na matumizi mengine zimeendelea kufanyika na kusahau kuendeleza nishati ya kupikia, hivyo kuwaacha watanzania wengi wakitegemea kutumia kuni na mkaa kwa njia zisizo na ufanisi. Waathirika wakubwa wa hali hii wamekuwa ni wanawake na Watoto, haswa Watoto wa kike ambao ndio wanatafuta na kupika kwa kuni na mkaa. Pia hapajakuwepo mikakati na program za kitaifa za kutatua hali hiyo kutokana na kupewa kipaumbele kidogo kwenye sera, mikakati na bajeti ya nishati.

Wapendwa Washiriki

Soko rasmi la nishati ya kupikia Tanzania halijaendelezwa na limekua zaidi lile soko lisilo rasmi la kuni na mkaa. Tunaelewa kuwa serikali imejiwekea lengo la muda mrefu la kuhakikisha zaidi ya asilimia 75 ya kaya zote nchini zinatumia nishati na teknolojia safi kupikia ifikapo mwaka 2030. Nishati na teknolojia zinazopewa msukumo, zinajumuisha, gesi (LPG), bayogesi, majiko sanifu ya kuni na mkaa na kiwango kidogo umeme. Hata hivyo bado juhudi zinazofanyika hazijaleta matokeo ya kuridhisha kwani Zaidi ya asilimia 85 ya watanzania bado wanatumia kuni na mkaa.

Juhudi za kueneza bayogesi bado hazijafanikiwa kutokana na gharama za awali za kutengeneza mtambo kuwa kubwa na changamoto ya kuhudumia kila siku.

Majiko ya umeme yalizooeleka na yasiyo sanifu,, gharama za kuyanunulia pamoja na gharama kubwa ya kulipia bili zimefanya wananchi wengi wasipikie umeme.

Majiko sanifu: Juhudi kadhaa zimefanyika kukuza matumizi ya majiko sanifu ya kuni na mkaa, lakini kutokana na bajeti na uwekezaji mdogo kwa wajasiriamali na watumiaji, juhudi hizi hazijafanikiwa kwa kiwango kibwa. Pamoja na juhudi zote za kukuza matumizi ya majiko sanifu ya kuni na mkaa, inaeleweka kuwa hizo ni hatua za mpito tu na sio za muda mrefu. Kutegemea kuni na mkaa kutaendelea kupungua kutokuwa endelevu katika kipindi cha muda mrefu kutokana na ongezeko la watu ambalo linaweka mzigo mkubwa kwenye misitu yetu isiyoongezeka.

Pia, inafahamika kuwa **Gesi (LPG)** tunayoitumia inatokana na usafishwaji wa mafuta nje ya nchi na siyo endelevu kwa kipindi cha muda mrefu. Pamoja na ya kuwa siyo endelevu, pia inaweza kuwa siyo ya kuaminika kutokana na kuwa inaagizwa kutoka nje na inategemea soko la mafuta na hatuna udhibiti wa bei na hata upatikanaji wake, hivyo kufanya kuwepo uwezekano wa watumiaji kurudi kutumia kuni na mkaa pale itakapokuwa haipatikani au bei kupanda sana. Hivyo gesi nayo inaoenekana kuwa nishati ya mpito na ukweli siyo suluhisho la kudumu na la muda mrefu. Pia nchi inatumia fedha nyingi za kigeni kuagiza gesi ya LPG, mitungi na majiko yake kutoka nje ya nchi.

Sote tunajua, tunayo **gesi asilia** na juhudi za serikali zinaendelea kukuza matumizi yake hapa nchini. Hata hivyo kama ilivyo gesi ya LPG, gesi asilia siyo endelevu. Pia miundo mbinu ya kuwezesha kutumika kwa wingi majumbani ni ya gharama kubwa, hivyo kupelekea wananchi wachache kuweza kufikiwa na nishati hii hapa nchini. Pia kuna uwezekano wa kupoteza fursa ya kuitumia gesi asilia kuzalisha bidhaa za thamani kubwa zaidi au kupata fedha nyingi za kigeni ikiwa itatumika kupikia majumbani

Kutokana na sababu hizo hapo juu, upo umuhimu wa taifa na sisi wadau wengine wa nishati safi za kupikia kutafuta na kutumia nishati na teknolojia ambayo ni ya uhakika, nafuu na yenye uendelevu wa muda mrefu tofauti na nishati zilizotajwa hapo juu

Wapendwa wadau Washiriki, tukizingatia ukweli kuwa nchi yetu inafanya juhudi kubwa za kusambaza umeme, juhudi za maksudi zinatakiwa sasa kuunganisha usambazaji huu wa umeme na matumizi ya umeme huo kupikia. Maendeleo ya teknolojia wakati huu na ya upatikanaji wa vifaa vya kupikia vyenye ufanisi mkubwa kama vile; Jiko Sanifu la Umeme Lenye Presha (JULEP) yanatoa fursa kubwa ya kuunganisha juhudi za kusambaza umeme, siyo tu kwa kuwasha taa, lakini pia kwa kupikia kwa gharama ndogo. Kutegemeana na chanzo cha umeme, matumizi ya umeme kupikia kwa kutumia JULEP kwa sasa yanatambuliwa na wataalam wa nishati safi kuwa ndio suluhisho sahihi na endelevu la nishati ya kupikia Tanzania.

Ili matumizi ya teknolojia na majiko haya yaongezeke na yawe endelevu, kunahitajika sera wezeshi, uwekezaji kwenye teknolojia hii na ushirikiano kwenye sekta mbalimbali zinazohusika na nishati. Kwa sasa hivi kuwepo umeme na kutumia umeme kupikia vinaonekana kama vitu viwili visivyokuwa na mahusiano. Kutokana na utafiti iliofanywa na TaTEDO kwa kishirikiana na kampuni ya Gamos pamoja na vyuo vikuu vya Surrey na Loughbrough vya Uingereza, inaonesha kuwa kuna uwezekano wa kubadili dhana hiyo na kuviunganisha. Kwa kutumia JULEP na vifaa vingine sanifu, kwenye kaya zenye umeme zinaweza kuutumia kwenye kupika kwa gharama nafuu kuliko mkaa na gesi. Ili watu wengi waweze kupata teknolojia hii safi na sanifu sana, inahitajika yafuatayo yafanyike:

- Kuhamasisha wajasiriamali ili waweze kuagiza majiko sanifu ya umeme yenye presha kwa wingi, kwa kupunguza au kuondoa kodi na kuhakikisha ubora wake kwa wateja,
- Soko likikua, kuweza kujenga kiwanda hapa nchini cha kuyazalisha kwa kutumia makampuni ya wananchi wenyewe,
- Kuendeleza soko na mitandao kwa ajili ya kuyasambaza na kutoa huduma kwa wateja kama pembejeo, ufundi, kuwawezesha wajasiriamali, nk
- Kuwasaidia wateja ili waweze kuyanunua kwa kuweka taratibu mbalimbali za kuwasaidia, waweze kupika vyakula wanavyopenda kwenye JULEP,
- Kuwawezesha wateja kuelewa faida ya JULEP na kuweza kubadilia changamoto za tabia.

Wapendwa wadau washiriki

Kwa kuhitimisha maneno maneno yangu ya ufunguzi, , naomba nitoa rai kuwa ili tufanikiwe katika kuwezesha wananchi wengi kutumia nishati na teknolojia safi za kupika kwa njia endelevu, tunahitaji serikali ikiwa ni mdau mkuu na muhimu sana kuandaa na kutekeleza sera na mikakati wezeshi. Kama wadau, kuwa na ushirikiano wa karibu, tukizungumza kwa sauti moja yenye---HII IKIWA ZAIDI NI SAUTI YA KINA MAMA. Ni matumaini yetu mwisho wa mjumuiko huu tutakuwa tumekubaliana namna ya kushirikiana kwa karibu ili kusaidia Watanzania wengi waweze kutumia nishati na teknolojia safi kupikia. Sote tunaelewa, sikuzote umoja ni nguvu na utengano ni udhaifu. TUCHAGUE UMOJA ILI TUFANIKIWE!!

Asante kwa fursa hii na Asante Sana kwa kunisikiliza.