

National workshop for exploring the evidence, mapping the way forward, and planning for future actions for developing biomass energy in Tanzania

26 & 27 February 2015

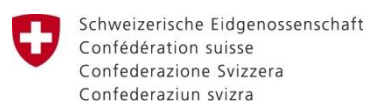
Hyatt Regency Hotel, Dar es Salaam, Tanzania



Process and Findings Report

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Executive Summary

A national workshop on biomass energy was recently hosted by the project partners of Transforming Tanzania's Charcoal Sector Project in Dar es Salaam, Tanzania to share with high-level stakeholders the lessons learned from phase I of the Project implementation, and to outline a way forward for collective action in developing Tanzania's biomass energy sector. The workshop, entitled ***"Exploring the Evidence, Mapping a Way Forward and Planning for Future Actions of Biomass Energy Development in Tanzania"*** was attended by more than 70 participants representing 41 stakeholder groups, among them relevant representatives from the Ministry of Energy and Minerals, the Ministry of Natural Resources and Tourism, the Prime Minister's Office for Rural Administration and Local Government (PMO – RALG), Development Partners and Politicians. The Guest of Honor at the event was Hon. George Simbachawene, the Minister of Energy and Minerals.

Group work activities and discussions were informed by the personal experiences of participants and their knowledge of the sector, and through plenary seminars from MEM, MNRT, PMO-RALG and researchers presenting the policy conditions and facts from research findings. The workshop discussions focused primarily on charcoal, a controversial and under-appreciated biomass energy that is estimated to generate approximately TZS 1.6 trillion for producers, transporters, traders, wholesalers, retailers, and consumers in Tanzania, albeit almost all of it informally. Hundreds of thousands of small-holder farmers make their living harvesting firewood and producing charcoal in the natural forests and woodlands.

Participants agreed that, in principle, charcoal is a renewable resource, yet current production approaches are unsustainable and have resulted in a national woodfuel deficit whose effects will begin to be felt in the next 10 to 15 years. The responsibility for developing and harvesting firewood and charcoal in Tanzania has been left to smallholder farmers and communities who get little to no support from the government to produce charcoal sustainably. Unsurprisingly, most production is illegal, informal, and does not abide to minimum criteria for long-term sustainability of supply. Projects such as Transforming Tanzania's Charcoal Sector (TTCS) (2012-2014) in Kilosa District, Morogoro are evidence that it is possible to produce wood fuels sustainably for the benefit of rural communities and forests.

In this two-day workshop, participants explored in detail five case studies that represent ongoing on-the-ground initiatives in the country that address charcoal production from multiple angles, to identify and prioritize challenges that are shared across the sector, and build consensus for an immediate way forward. Stakeholders in the forestry and energy sectors have unanimously agreed that there is urgent need to develop the biomass energy sector in Tanzania so that it recognizes and addresses the important role of firewood and charcoal in fuelling cooking stoves and furnaces throughout the nation.

Five priority challenges were collectively identified to be addressed in the next 12 months. These are:

1. Existence of an unsupportive policy environment
2. Low investment in the sector
3. Grave misconceptions and a lack of awareness about the importance of Biomass Energy
4. Expensive and complex land use planning process necessary for securing biomass supply
5. Informality of the sector

Given these priorities, participants, who represent key stakeholders in the biomass energy sector (and particularly the charcoal component of the sector) call for the Government (specifically for the Ministry of Energy and Minerals and the Ministry of Natural Resources and Tourism) to act on the following recommendations:

- Acknowledge charcoal and firewood as important energy sources in the National Energy Policy, and allocate to them clear targets, a legal framework, monitoring mechanisms and finance to develop them urgently and sustainably;

- Finalize and operationalize the existing draft of the Biomass Energy Strategy (BEST) and include within it specific actions for charcoal and firewood production
- The government should take a leading role in BEST implementation; Charcoal and firewood should be given the same attention and budget as rural electrification, gas development, and other energy development
- The Tanzania Forest Services, Renewable Energy Agency, Private Sector and Civil Society Organizations need to coordinate their efforts to develop and build capacity within the sector; and
- Create awareness and (institutional and technical) capacity on the opportunities available in the biomass energy sector.

In summary, the biomass energy sector needs a drastic and rapid transformation in terms of its main focus and how it is implemented. Charcoal production, in particular, has to be addressed from multiple angles and approaches. Projects such as Transforming Tanzania's Charcoal Sector Project (TTCS) in Kilosa District, Morogoro are viable models for scaling up sustainable charcoal production from natural Miombo forests. Other models have been tried and tested; but they all need a conducive policy environment and financial support to scale them up to relevant areas. This will require demonstrated *political will and commitment* by the Ministry of Energy and Minerals and the Ministry of Natural Resources and Tourism to develop and build the sector.



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Introduction and background

Transforming Tanzania’s Charcoal Sector (TTCS) Project has been a small but significant undertaking in Kilosa District, Morogoro aimed at applying Tanzania’s existing participatory forest management framework to sustainable production of charcoal in community managed forests. The Project was initiated in March 2012 and is being jointly implemented by a partnership between the Tanzania Forest Conservation Group (TFCG), the Tanzania Community Forest Conservation Network (MJUMITA by its Swahili acronym), and the Tanzania Traditional Energy Development Organization (TaTEDO); Phase I of the Project officially ended in August 2014. Nevertheless, a one year no-cost extension is currently underway which will end in August 2015.

TTCS has been funded by the Swiss Agency for Development and Cooperation (SDC). The experiences and lessons learned from the TTCS Project have permitted the development of a model – the MJUMITA Sustainable Charcoal Model – for producing charcoal sustainably from Miombo forests in village forest reserves (Figure 1). Phase II of TTCS consists of scaling up this model to other areas in Tanzania with community based forest management.

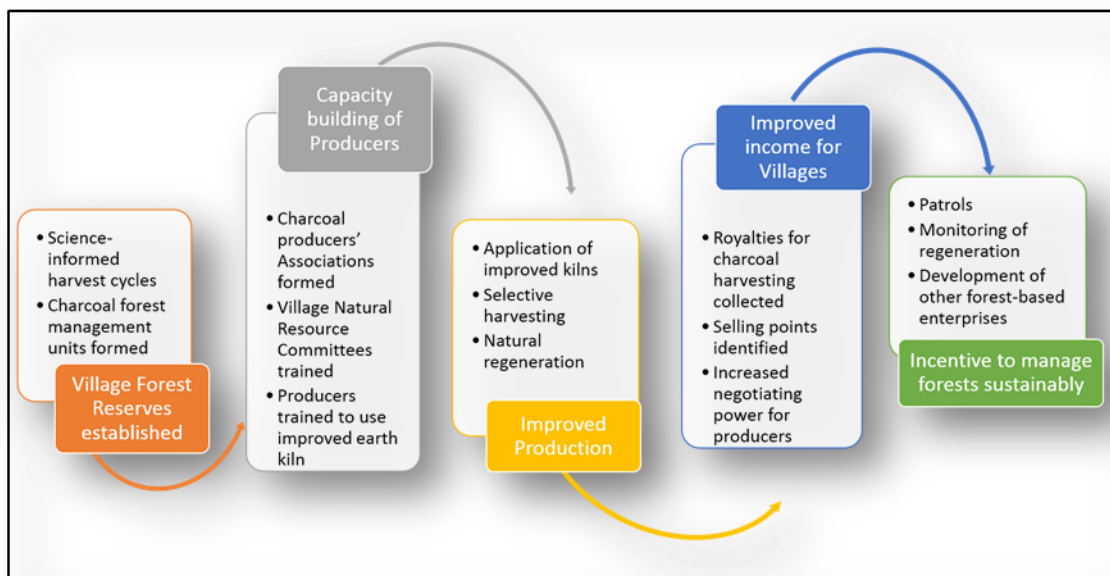


Figure 1: Schematic of the MJUMITA Sustainable Charcoal Model

The project is based on a two-pronged theory of change which argues that in order to bring about lasting and positive evolution in Tanzania’s marginalized and unsustainable charcoal sector it is necessary to intervene at the level of both policy and practice. The project was designed to explore better and practical approaches for improving the charcoal sector, from production to sales through supporting sustainable, community-based charcoal production driven explicitly by market forces.

The activities being undertaken in Kilosa District in Morogoro Region comprise of Component 1 of the TTCS Project which consists of piloting a commercial value chain for sustainably produced charcoal that is intended to incentivize sustainable production within a CBFM framework, by increasing the proportion of revenue from charcoal sales that reaches producer communities. The Swiss research institutions Quantis and the Centre for Development and Environment (CDE) at the University of Bern were responsible for conducting related life-cycle analysis (LCA) and environment and social impact assessment (ESIA) of charcoal and other fuels.

Component 2 of the Project consists of developing coordinated advocacy for biomass friendly governance of the energy sector. It is expected to build up a dataset of information on challenges, opportunities and perceptions in the biomass energy sector, to inform an ambitious communications and advocacy strategy that promotes a modern image of biomass energy with key policymakers, aimed at convincing them to take coordinated measures that could modernize and formalize the sector, to safeguard future energy provision and ensure economic and environmental sustainability.

Two Outcomes have been defined for the Project, each linked to one of the two Components:

Outcome 1: Commercially viable value chains established for legal, sustainably sourced charcoal

Outcome 2: Credible data and analysis communicated through coordinated advocacy leading to more biomass-friendly governance of the energy sector.

As the Project nears the end of its Phase I period, it is looking at how to integrate other forest-based enterprises into the model, including beekeeping and timber production. The Tanzania Forest Conservation Group is seeking support and cooperation of development partners and key stakeholders in the biomass energy sector to scale up the MJUMITA Sustainable Charcoal Model to other CBFM areas and to build political support for sustainable charcoal production and enterprise-oriented CBFM.

Workshop objectives

The overarching objective of the workshop was to bring together key stakeholders in the biomass energy sector in Tanzania to outline a plan of action for supporting implementation of recommendations put forth in the draft National Biomass Energy Strategy (BEST).

The specific objectives of the workshop were:

1. To collectively explore evidence of the potential for a sustainable charcoal sector in Tanzania;
2. To identify and prioritize shared challenges across the sector;
3. To outline a way forward for the biomass energy sector and identify those challenges that a TTCS Phase II could address; and
4. To embark on future actions for the sector.

Additional and less explicit objectives included:

- a) Sharing the TTCS experiences and lessons learned with key stakeholders, including government stakeholders and development partners;
- b) Raising the awareness of key decision-makers in the biomass energy sector in Tanzania on the role of charcoal, in particular, could play in achieving numerous national objectives including attaining energy security, improving revenue for local and village level governments, improving rural livelihoods, addressing climate change, and reducing deforestation and forest degradation;
- c) Educating participants on the draft National BEST and its recommendations;
- d) Garnering support and political will for the sector from MEM, MNRT and development partners; and
- e) Providing the time and space for stakeholders in the biomass energy sector to interact and network

Discussions and outputs from the workshop were to be used as input towards three main outputs:

1. A one-page policy brief to communicate key messages from the workshop to a wide range of stakeholders, including the general public;
2. An Advocacy and Communication Strategy for developing a sustainable charcoal /biomass energy sector; and
3. A detailed proposal for TTCS Phase II.

Participation and support from the two main ministries overseeing energy and biomass, and from the financiers of the Project was essential for workshop success. Consequently, the Guest of Honor opening the event was Hon. George Simbachawene, the Minister of Energy and Minerals. His Excellency Olivier Chave, the Ambassador of Switzerland to Tanzania, was also present and remarked on the event. The Chief Executive Director of the Tanzania Forest Services, officially closed the event. Additionally, the Honorable Chairs of the Standing Committees of 1) Land Natural Resources and Environment, Hon. James Lembeli (MP), and 2) Energy and Minerals – Hon. Murtaza Mangunga (MP) remarked pledged commitment to the outcomes of the event. All opening and closing remarks are available in Annex II.

Methodology

General workshop structure

The workshop was planned as a two-day interactive event hosting 68 key stakeholders hand-picked from government, practitioner, research & academia, advocacy, development partners, and the private sector. The ratio between presentations and interactive activities was about 50:50 whereby the former was used to inform the latter. Workshop time was allocated to group work activities that produced specific outputs and which were followed by discussions in plenary. Each activity was preceded by a presentation or a set of presentations given by pre-identified participants. Presenters were given guided instructions on topics to cover in their talks so as to ensure that their presentations informed the discussions and activities, avoided repetition, and built on previous presentations. The workshop program is made available in Annex I.

The workshop was facilitated by Dr. Tuyeni H Mwampamba, an associate research professor at the Centre for Ecosystem Research of the National Autonomous University of Mexico. Dr. Mwampamba has extensive experience in the charcoal sector in East Africa and Mexico. She was assisted by Ms. Bettie Luwuge of TFCG, Ms Nike Doggart of TFCG, Ms. Elida Fundi from MJUMITA, and Mr. Jensen Shuma from TaTEDO. The workshop rapporteur was Mr. Emily Gervas.

National BEST Action Areas as a framework for the workshop

In an effort to increase awareness among participants of the basic contents and particularly the action areas and items recommended by the draft national biomass energy strategy (BEST), workshop activities were framed around the BEST recommendations. A schematic of the framework (Figure 2) was provided to each group and a larger version of the schematic made available in plenary. Accompanying the schematic was a BEST Action Areas Fact Sheet that listed and defined each action item according to the BEST report (see Material for Activity 2 in Annex IV: Supporting materials for group activities).

Facilitation techniques applied

Small group activities and plenary discussions were the main facilitation techniques applied, interspersed with standard PowerPoint-type presentations. Principles of adult learning were followed, which dictate the use of interactive tools, ensuring relevance to work situation, engaging participants and incorporating new knowledge and skills into their existing experiences.

Each activity and presentation was designed to contribute to the achievement of specific workshop objectives. Table 1 summarizes the link between activities and objectives of the workshop.

Two additional techniques were employed that are worth describing briefly Marketplace Presentations and the Urgency vs Importance Grid for Group Prioritization.

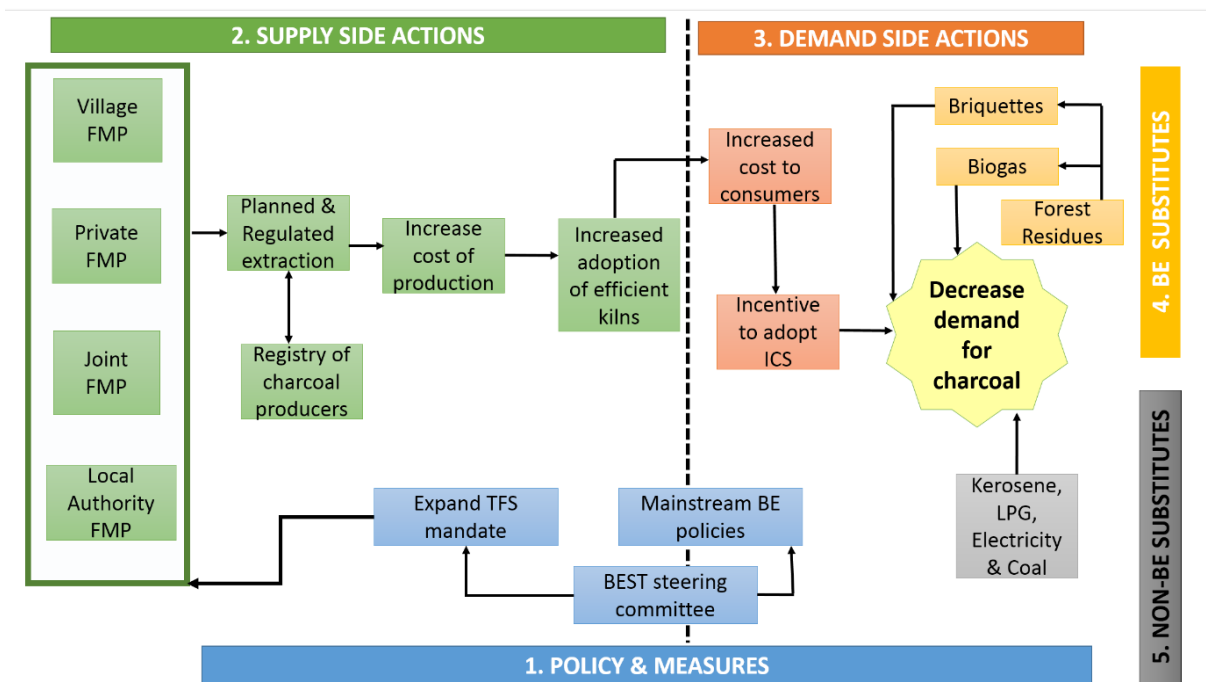


Figure 2: Schematic of BEST Action Areas and Items framed as a schematic to guide and inform group work activities and plenary discussions

Marketplace presentations

Marketplace Presentation consists of running multiple sessions of parallel presentations that only a fraction of the participants attend at any given session, but which allow all participants to view more than one presentation. Several days before the workshop marketplace presenters are given a set of guidelines of key topics or questions that their presentations should cover. They are encouraged to bring props and items for display, including posters that communicate key messages about their projects. They are warned that they will present multiple times, but to a different audience each time, and that their presentation will be timed (usually 10 to 12 minutes with 3 minutes for questions and answers). All presentations are conducted without the use of PowerPoint or other electronic software, making the room to look like a ‘marketplace’.

Participants within a working group divide themselves so that among them, all presentations are visited but each individual only visits a subset of the presentations. Individuals attend one presentation in the first 15 min session, and in the next session visit another ‘stall’, and so on. A bell or alarm is rung to indicate the end of one session and the beginning of the next. Several sessions can be conducted. In the case of this workshop we ran two sessions, each 15 minutes long.

In returning to their work groups, participants use the first 5 to 10 minutes to share with others what they encountered.

Urgent vs important grid for prioritizing challenges

This is a classic time-management tool that can be used to prioritize in groups. A two-step process was applied as part of Activity 8 to identify priority challenges for stakeholders to address in the next 1 to 5 years. Each working group ranked challenges according to their importance and urgency. A list of challenges had been identified in previous activities and discussions. Groups located challenges along two axes (importance and urgency) forming four quadrants. Three levels of importance were given: low importance, medium and high importance. A challenge could be placed anywhere along this gradient. Urgency was set as “very urgent” (must be addressed in the next 12 months), “medium” (must be addressed in the next 12-24 months) and “not urgent” (could be addressed in the next 3 to 5 years).

Challenges that ended up in the upper right hand corner (very important and highly urgent) were automatically identified as priority challenges.

In the next step, all the priority challenges were collected from working groups and mapped on a larger diagram for plenary viewing. Repeated challenges were grouped and their frequencies calculated. Challenges that were most frequently repeated across work groups were considered priority, unless a plenary discussion concluded otherwise.

Workgroup formation and promoting networking space

To promote networking among participants and to ensure that group work activities were conducted by a mixed set of stakeholders representing different sectors, participants were allocated groups on the first day. On the second day, however, participants could select which group to work in.

Introductions were made at work group rather than plenary level to save time and to make sure that - in the very least - group members were introduced to each other. Participants were encouraged to try to meet at least two new people at every coffee and lunch break. A prize was promised to the person who met the most new people in one day. Having met more than six new people on the first day, Dr. Lucy Ssendi, won this challenge.

Metrics for gauging workshop impact and success

Three sets of evaluations were conducted across the two days. A pre-workshop assessment in the form of a nine-question written survey was undertaken before the official workshop programme began. This evaluation was conducted to assess participants' knowledge and experience of the biomass energy sector in Tanzania prior to the workshop, and to gauge their attitudes towards wood energy in particular.

At the end of the first day, a multi-criteria evaluation of the day was conducted to assess whether participants were enjoying the workshop, whether presentations and activities contributed new knowledge and understanding of the sector, whether the workshop was useful for their work, and whether participants felt that their contributions in group work activities were reflected in the group's outputs.

On the final day, a more general multi-criteria evaluation was conducted to assess whether improvements addressing shortcomings from the first day of workshop facilitation and content had been perceived by participants; and whether – in general – the workshop had achieved each of its objectives.

Beyond workshop participants, it was expected that the public would hear of the event and learn its outcomes through the media. A rapid assessment of media coverage of the event was undertaken post-workshop.

Table 1: Links between activities conducted and the workshop objectives that they served

Activity	Workshop Objective that the activity served:	Additional objectives that the activity served:
Keynote Speech: <i>National trends in biomass energy in Tanzania</i>	Background and Justification for the Workshop	<ul style="list-style-type: none"> • Awareness raising; • Clarification of misconceptions;
Presentation: <i>Tanzania's Biomass Energy Strategy (BEST): Key lessons, recommendations and the Action Plan</i>	Obj. 1: Explore the potential for a sustainable biomass energy sector	<ul style="list-style-type: none"> • Educate participants on content of the draft BEST and the recommendations that it makes; • Assess whether BEST attends the most important challenges facing the BE sector
Presentation: <i>The Kilosa Sustainable Charcoal Model: achievements, lessons learned and future plans</i>	Obj. 1: Explore the evidence for a sustainable charcoal sector	<ul style="list-style-type: none"> • Share with participants the basic framework of the Kilosa TTCS model
Activity 1: <i>Marketplace Presentations of Project Experiences</i>	Obj. 1: Explore the evidence for a sustainable charcoal sector	<ul style="list-style-type: none"> • Expose participants to other relevant initiatives compatible with BEST recommendations:
Activity 2 & 3: <i>Locating existing experiences within BEST and identifying common challenges</i>	Obj. 2: Identify shared challenges	<ul style="list-style-type: none"> • Identify where existing initiatives concentrate their efforts • Identify under-addressed areas; • Identify stakeholders missing from discussions
Presentation: <i>The growing role of biomass as a modern, "green" and sustainable energy source in a broader context</i>	Obj. 1: Explore the evidence for a sustainable charcoal sector beyond Tanzania	<ul style="list-style-type: none"> • Expose participants to efforts in other countries to address their charcoal sector; • Identify lessons to be learned from experiences in other countries • Awareness raising to demonstrate that using biomass energy is not 'backward'.
Activity 4: <i>Plenary discussion on experiences and approaches to BE in other countries</i>	Obj. 2: Identify shared challenges	<ul style="list-style-type: none"> • Identify country-level approaches and cases that are relevant to Tanzania and replicable to the local context
Presentations: <i>Biomass energy and the National Forest Policy;</i> <i>The Tanzania Forestry Services and its role in governing the biomass energy sector: achievements and lessons learned.</i>	Obj. 3: Outline a way forward for the BE sector in Tanzania	<ul style="list-style-type: none"> • Explore whether the supply-side policy environment is conducive to transforming the sector. • Input for the Advocacy & Communications Strategy
Activity 6: <i>Question & Answer session with MNRT and TFS presenters</i>	Obj. 3: Outline a way forward for the BE sector in Tanzania	<ul style="list-style-type: none"> • Identify policy and implementation gaps that need to be addressed.
Presentation: <i>Local government and its role in governing the biomass energy sector: achievements and lessons learned.</i>	Obj. 3: Outline a way forward for the BE sector in Tanzania	<ul style="list-style-type: none"> • Awareness raising on the role of local government in addressing and securing biomass
Activity 7: <i>Question & Answer session with PMO-RALG presenter</i>	Obj. 3: Outline a way forward for the BE sector in Tanzania	<ul style="list-style-type: none"> • Confirm and clarify the role of local government
Activity 8: Prioritise challenges	Obj. 2: Prioritize shared challenges	<ul style="list-style-type: none"> • Input for the Advocacy & Communications Strategy
Presentation: <i>Transforming Tanzania's Charcoal Sector: Potentials, limitations & impacts of Biomass Energy in Tanzania.</i>	Obj. 1: Explore the evidence for a sustainable charcoal sector	<ul style="list-style-type: none"> • Input for the Advocacy & Communications Strategy
Activity 9: Outline immediate actions for addressing priority challenges	Obj. 3: Outline a way forward for the BE sector in Tanzania & for TTCS Phase II Obj. 4: Embark on future actions	<ul style="list-style-type: none"> • Input for the Advocacy & Communications Strategy • Input for the development of detailed TTCS Phase II proposal
Activity 10: Post-workshop activity meeting between project implementers	Obj. 4: Embark on future actions	<ul style="list-style-type: none"> • Input for the Advocacy & Communications Strategy

Analysis, Findings, and Discussions

Participants' profile and pre-workshop experience

A total of 68 participants attended the event across the two days. Of these, approximately 55 were “active participants” which means that they participated in the discussions and group work activities and thus their inputs are reflected in their workgroup outputs and in the workshop outputs as a whole. Media representatives and Guests of Honor were not considered active participants. Fifty of the 68 participants attended both days of the workshop; three participants joined the workshop on the second day and participated actively in group work activities.

Representativeness of sectors and gender balance

A total of 41 biomass energy stakeholder groups participated at the workshop representing eight (8) key sectors, including media and politicians (Table 2). Although a wide range of key stakeholder groups attended the workshop, it was noted that important players along the charcoal value chain were missing, in particular producers, transporters, and traders. Given the nature of the workshop (conducted in English and aimed at generating support at ministerial and development partner levels), this is not completely surprising. It was also assumed that the civil society and non-governmental organizations (CSO/NGO) participating in the workshop were there on behalf of producers to a large extent, and to transporters and traders to some extent.

It was duly noted, however, that the private sector should have been invited (e.g., the saw mill companies) and formalization of the sector will make it easier to do so in the future. Charcoal transporters are being encouraged by the TTCS Project to form associations that will allow them to, among other things, lobby for changes they would like to see in the sector.

No specific effort was made to balance gender across workshop participants. Nonetheless, a total of twelve (12) women attended the workshop, three of whom were facilitators, and thus did not contribute to group discussions. Three of the 12 presentations were conducted by women. The last column of Table 2 provides a breakdown of female participants across stakeholder groups.

Prior familiarity with TTCS and the biomass energy sector

Thirty-seven participants responded to the pre-workshop survey which was aimed at gauging participants' familiarity with the biomass energy sector and the TTCS Project. Of these 33 respondents were already familiar with the biomass energy sector in Tanzania, and 28 indicated that they were somewhat or very familiar with the National BEST (Figure 3). Of the 28 participants familiar with BEST, about half of them (13) listed recommendations that coincided strongly with those in the draft BEST report. Seven (7), however, did not list a single BEST recommendation and eight (8) listed recommendations that were either too vague or too general to be associated with BEST. Thirty one of the 37 respondents had prior knowledge of the TTCS Project (Figure 4)

These results suggest that although most participants were aware of the existence of BEST, many did not know its specific content and the set of recommendations that it makes. Participants who attended the morning session of Day One (65 participants) would have been exposed to MEM's presentation on BEST and which outlined the BEST key recommendations. Additionally, those who participated in Activity 2 would have worked actively and directly with BEST Action Areas and Action Items. We can thus safely deduce that most – if not all – participants left the workshop with a much better understanding of BEST than they had arrived with.

Table 2: Stakeholder representativeness and gender balance at the workshop

Biomass Energy Stakeholder	Sector Represented	Total	No. Female
Sokoine University of Agriculture (SUA)	Academia & Research	2	0
Tanzania Forest Research Institute (TAFORI)	Academia & Research	1	0
Ministry of Energy and Minerals (MEM) – Tanzania Forest Services Agency	Central Government	7	1
Ministry of Natural Resources and Tourism (MNRT) - Forest & Beekeeping Division	Central Government	5	1
UNDP - Miombo Woodland Project	Central Government	1	0
PMO - Regional Administration & Local Government (RALG)	Central Government	1	1
Vice President's Office, Division of Environment	Central Government	1	0
Community Forest Conservation Network of Tanzania (MJUMITA)	CSO/NGO	3	2
Tanzania Forest Conservation Group (TFCG)	CSO/NGO	5	2
Mpingo Conservation and Development Initiative (MCDI)	CSO/NGO	2	0
Tanzania Natural Resources Forum (TNRF)	CSO/NGO	1	0
Tanzania Tradiona Energy Development Organization (TaTEDO)	CSO/NGO	2	0
Embassy of Switzerland	Development Partners	1	0
Embassy of Switzerland - Swiss Agency for Development & Cooperation (SDC)	Development Partners	2	1
Royal Norwegian Embassy	Development Partners	3	0
French Embassy	Development Partners	1	0
European Union (EU)	Development Partners	2	0
UNDP representative	Development Partners	2	1
Embassy of Finland	Development Partners	3	0
BTC - MNRT	Development Partners	1	0
Morogoro Regional Secretariat	Local Government	1	0
Morogoro District Council	Local Government	1	0
Kilosa District Council	Local Government	2	0
Mvomero District Council	Local Government	1	0
Daily News	Media	1	0
The Guardian	Media	2	0
The Guardian	Media	1	0
Nipashe Newspaper	Media	1	1
Freelancer	Media	1	0
Freelancer	Media	1	0
Environmental Journalists of Tanzania (JET)	Media	2	0
Mtanzania Newspaper	Media	1	0
IPP Media	Media	1	0
Member of Parliament - Kahama	Politicians	1	0
Member of Parliament - Kilwa	Politicians	1	0
Member of Parliament -	Politicians	1	0
Kilosa District Commissioner's Office	Politicians	1	0
CAMCO Clean Energy (Tanzania) Ltd.	Private Sector	1	0
ARTI Energy (Tanzania)	Private Sector	1	1
TOTAL		68	11

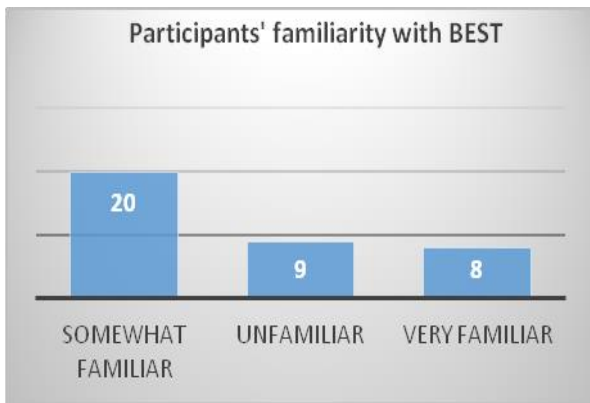


Figure 3: Pre-workshop familiarity with BEST and its recommendations

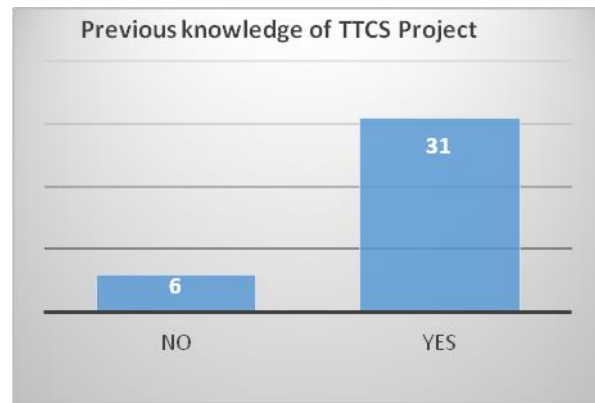


Figure 4: Participants' knowledge of the TTCS Project prior to receiving a workshop invitation

Outcomes for each objective:

Evidence for the potential for a sustainable biomass energy sector

The TTCS Presentation by Charles Meshack and the Marketplace Presentation activity exposed participants to five initiatives in the country that are addressing some component of the biomass energy sector in the country. The full content of what each project exposed is included in Annex III: Content exposed in Marketplace Presentations.

In summary, the TTCS and the UNDP Tabora projects are addressing the supply end of BEST which consists of securing the availability of biomass (TTCS) from natural and plantation forests to meet wood energy needs, generally, but charcoal in specific. This requires both the process of securing village land use plans so as to identify village forest reserves in which charcoal forest management units can be established. It also involves improved practices for producing charcoal more efficiently (improved kilns), better collection of revenues from forest activities, and formalizing the charcoal sector.

TaTEDO and ARTI Energy were most similar in the sense that they focused mostly on demand-end activities, mostly related to improved cooking stoves (ICS). ARTI Energy more so than TaTEDO focuses a lot of its resources in the production of charcoal briquettes, which is another item in the BEST action plan “commercially viable biomass energy substitutes”. TaTEDO is the only initiative to have been involved in the policies and measures component of BEST – it participated in the Steering Committee formed to develop the draft BEST Report and Action Plan.

Finally, the Mpingo Development and Conservation Initiative (MDCI) is concerned mostly with the sustainable harvest of mpingo species for an export market that is governed by the Forest Stewardship Council (FSC) Standards. It represents the viability of commercial exploitation of forestry resources by communities and is thus an interesting model for the sector to be aware of. It is the only initiative that is governed by standards. It is considering producing charcoal as a secondary product from timber harvesting remains.

In addition to these five projects, numerous other projects were identified by participants as conducting similar activities, especially projects helping communities demarcate and register village forest reserves, establishing community based forest management, and developing tree plantations. It was noted, however, that most of these projects are not directed at producing wood fuel, and especially not charcoal, but rather, at producing timber. The Tree Growers Association (TGAs) program implemented under MNRT, for example, promotes commercial production of timber for poles and planks. There are, however, many initiatives promoting production of charcoal briquettes from agricultural and forest residues (e.g. East Africa Briquettes in Tanga) and several other initiatives producing improved cook

stoves. Indeed, the small informal private sector has been very active in the production of ICS – but there is concern that the lack of a quality control mechanism means that these stoves oftentimes operate at much lower efficiency levels than can be achieved.

Table 3: Summary and assessment of presentations presented to demonstrate evidence of successful case studies addressing the biomass energy sector in Tanzania, assessed using the draft Biomass Energy Strategy Action Areas and Items

Project	BEST Action area	BEST Action item	Description of BEST Action item	Project Impact	Project Scalability	Barriers & Challenges
ARTI Tanzania	3. Biomass energy demand	3.1	Cookstoves for charcoal briquettes	35,000 improved stoves sold since 2013;	High	working capital for the producers; unsupportive policy
	4. Commercially viable biomass energy substitute	4.1	Biomass briquettes	45 t/month briquette production; increased adoption; additional income to communities; especially women; 2000 trained on carbonized charcoal; reduced deforestation; waste reduction	medium to high	inadequate financial resources; high investment costs; lack of capital; quality control, finance; consumer preference for charcoal; lack of awareness; uncertainty about whether the business model works
		4.3	Forest residues			
Mpingo Development and Conservation Initiative	2. Biomass energy supply	2.1	Village Forest Management Plans	more forests managed through CBFM; poor connection between demand and supply	medium to high	lack of capacity in financial management - generates conflict
		2.3	Local Authority Forest Management Plans	Improved revenue from timber	high	
		2.5	Organisation & Registration of Charcoal producers	improved forest management	medium	maintaining FCS certification
		2.6	Sustainable Charcoal Production & Certification	improved village capacity; improved awareness, improved marketing skills	medium	
TaTEDO	1. Policies & Measures	1.1	Extend BEST Steering Committee	Participated in BEST steering committee	high	lack of supportive policy
		1.3	Biomass policy inventory			lack of awareness
	2. Biomass energy supply	2.1	Village Forest Management Plans		medium	little financial support from the govt
		2.6	Sustainable Charcoal Production	more than 1000 technicians trained on EE, RE; improve users livelihoods; Improve livelihood of producers		affordability; absence of standards for kilns
	3. Biomass energy demand	3.1	Improved cookstoves	15,000 ICS produced/month; decreasing rate of charcoal demand; efficient use of charcoal; reduced environmental pressure; technology	high	high investment costs; Inadequate budget; absence of standards for stoves
	4. Biomass energy substitutes	4.1	Biomass Briquettes	modelling different technologies	medium	Uncertainty whether the model is economically viable
		4.2	Biogas	200 biogas digesters installed	low	
4.3		Forest Residues	conversion into biomass briquettes	medium		
Transforming Tanzania's Charcoal Sector Project	2. Biomass energy supply	2.1	Village Forest Management Plans	60,000 ha under VLFR established & conserved; 555 charcoal producers trained	High	conflicts of interest btw CBFM & TFS/District/LGA; lack of favourable policies; weak law enforcement; limited to Miombo forests
		2.3	LAFM Plans		High	Skepticism by some stakeholders of whether model works
		2.5	Organization & Regulation of producers	Improved revenue collection; 8 associations charcoal associations formed	High	unfair competition from charcoal produced unsustainably
		2.6	sustainable production & certification	6000 ha under Sustainable charcoal production in 8 villages	medium	
		2.7	Improve Collection of Forest Energy Fees		medium	informality of sector
UNDP Tabora	2. Biomass energy supply	2.1	Village Forest Management Plans	133,400 ha in 4 wards; reduce pressure on natural forests	medium	lack of national policy framework; political influence; high resources needed to scale up
		2.2	Private Forest Management Plans	12,000 people	medium	
		2.3	Local Authority Forest Management Plans	doubled agricultural production & income	medium	difficulty of registering LUP
		2.4	Joint Forest Management Plans		medium	lack of experience
		2.5	Organization & Registration of Charcoal producers		medium	
		2.7	Improve Collection of Forest Energy Fees		medium	finances
		2.8	National Charcoal Transport Licensing		medium	Governance problems (Mpingo)
		3. Biomass energy demand	3.2	Improved Fuelwood Use for Tobacco		medium
	4. Commercially viable biomass energy substitute	4.2	Biogas		medium	

Gaps in addressing the biomass energy sector

Participants were encouraged to locate all initiatives that they are aware of in the biomass energy sector on the BEST schematic in plenary so as to identify obvious tendencies and implementation gaps (Figure 3). Five key observations and take-away messages can be obtained from this workshop output:

1. The general absence of MEM beyond the Policies and Measures Action Area and the development of Non-biomass Energy Substitutes
2. Heavy activity and multiple stakeholder involvement in improved cook stoves (ICS) – a demand side action area, relative to the supply side;
3. TFS presence in mostly the supply side but also in the demand side (ICS);
4. General absence of any government activity in the development of biomass energy alternatives. This is predominantly an NGO and private sector dominated action area; and
5. The absence of local government forest reserves as sources of supply.

Indeed, it was noted that the important role of local governments, and specifically the necessity for the sector that there is complete devolution of power to local and village governments to plan and manage their own forest resources has been missing from the BEST framework used in the workshop. These are added in red in Figure 3, and doing so identifies the role of the Regional Administration and Local Government (RALG) sector under the Prime Minister’s Office.

Shared challenges in the Sector

Despite the diversity of interventions and differences in approaches of the case studies that were presented at the workshop, when explored in detail, projects shared numerous barriers that prevented them from either being more effective or scaling up, or achieving their objectives. Consolidation of groups’ outputs from Activity 2 (in which groups analyzed in detail at least three of the five case studies presented at the workshop) identified seven (7) shared (or common) challenges (Figure 3). These are: 1. unsupportive policy environment; 2. Low investment in the sector; 3. Lack of awareness of important facts about the sector, and especially charcoal; 4. Unclear business cases, and thus unsure whether the model is replicable without donor funding; 5. Weak local governance; 6. Lack of standards of quality for kilns and improved cook stoves; and 7. High expense and very complex process for developing village land use plans which are fundamental premise for establishing village forests reserves and subsequent biomass energy forest management units (FMUs).

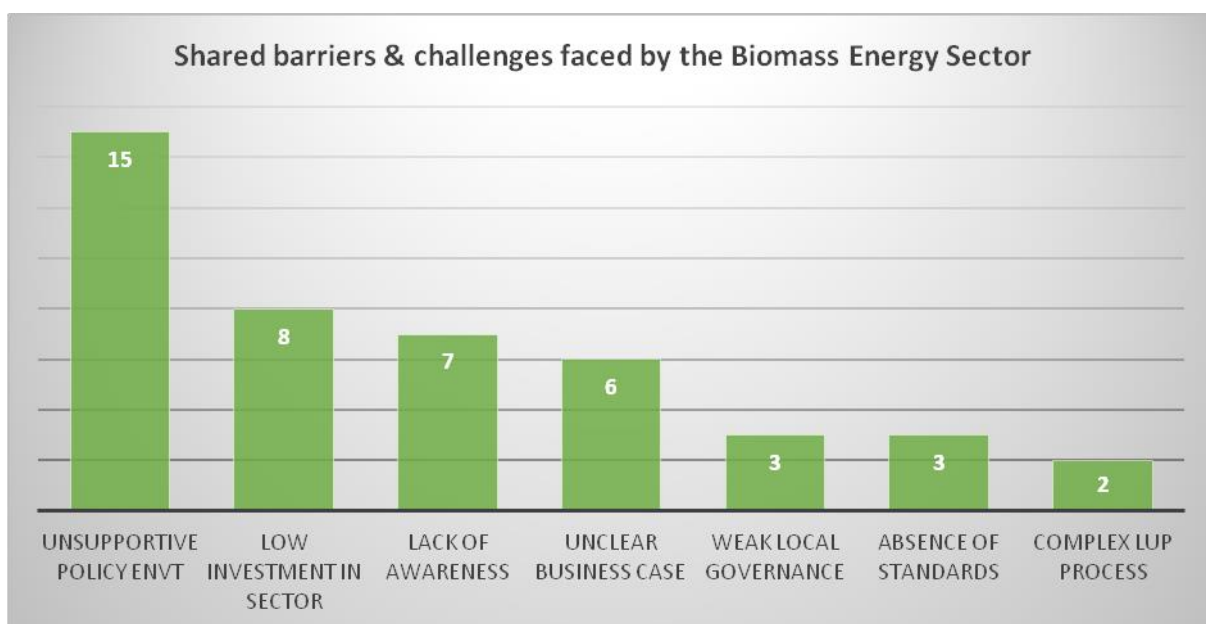


Figure 3: Consolidation of challenges shared by five case studies explored in detail in the workshop based on number of times they were identified by seven working groups (Day 1 Activity 2)

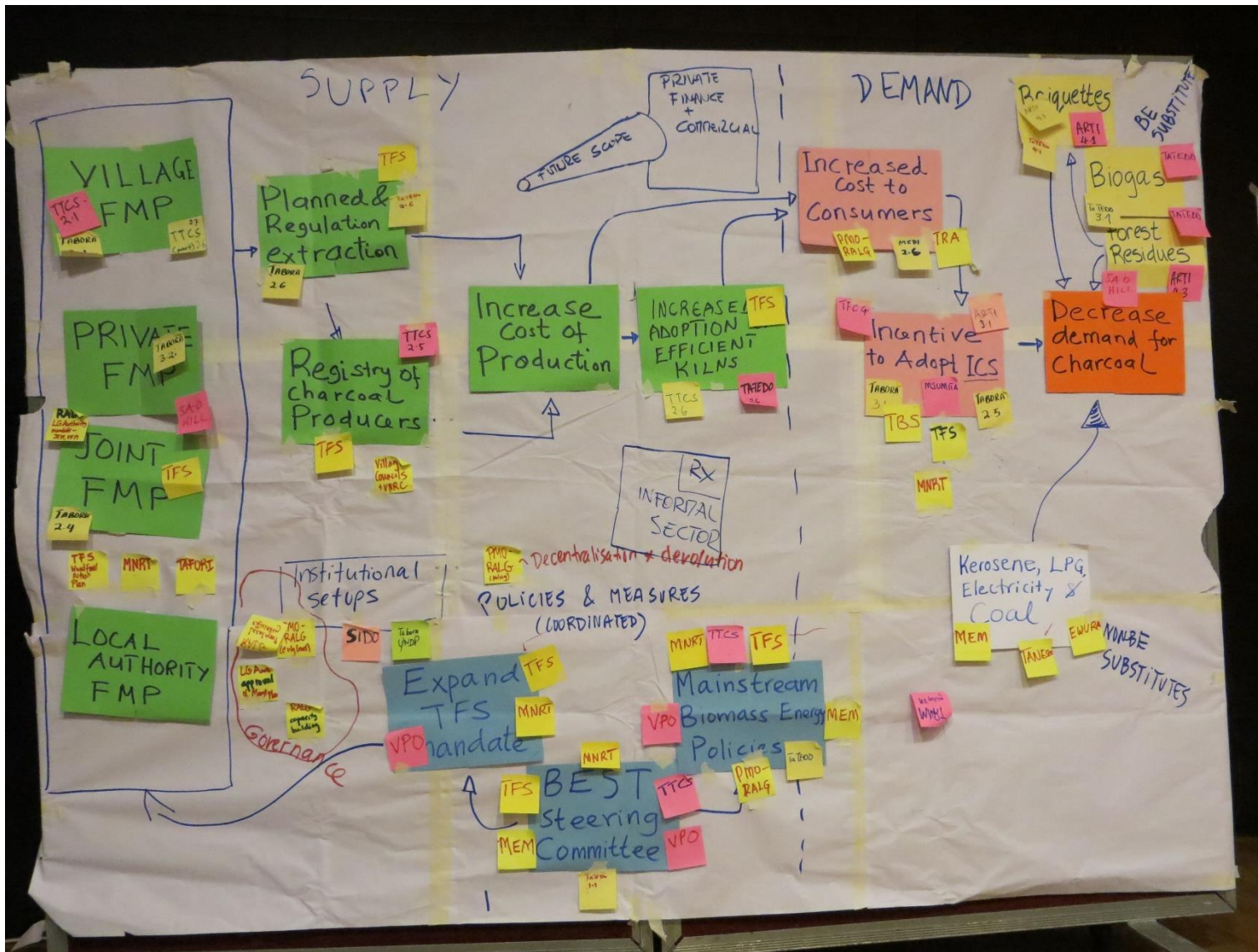


Figure 4: Schematic of BEST Action Areas and Action Items capturing the logic of BEST recommendations and how they will contribute to reducing charcoal demand. The diagram was placed in plenary and used to frame discussions, explore case studies, and project consensus derived from group activities and plenary discussions. Post-it notes locate actors' based on either the activities/input they make to the sector or because there is a clear policy mandate to act on an Action Area or Item.

Many of the challenges identified in Activity 2 that were common across case studies were reinforced the following day during plenary discussions that ensued following the MNRT, TFS and PMO-RALG presentations (Figure 5). Specifically, weak law enforcement, unsupportive policies, insufficient funding, and the expense of undertaking land use plans to enable the allocation of areas for charcoal production were repeated from the previous day's discussions.

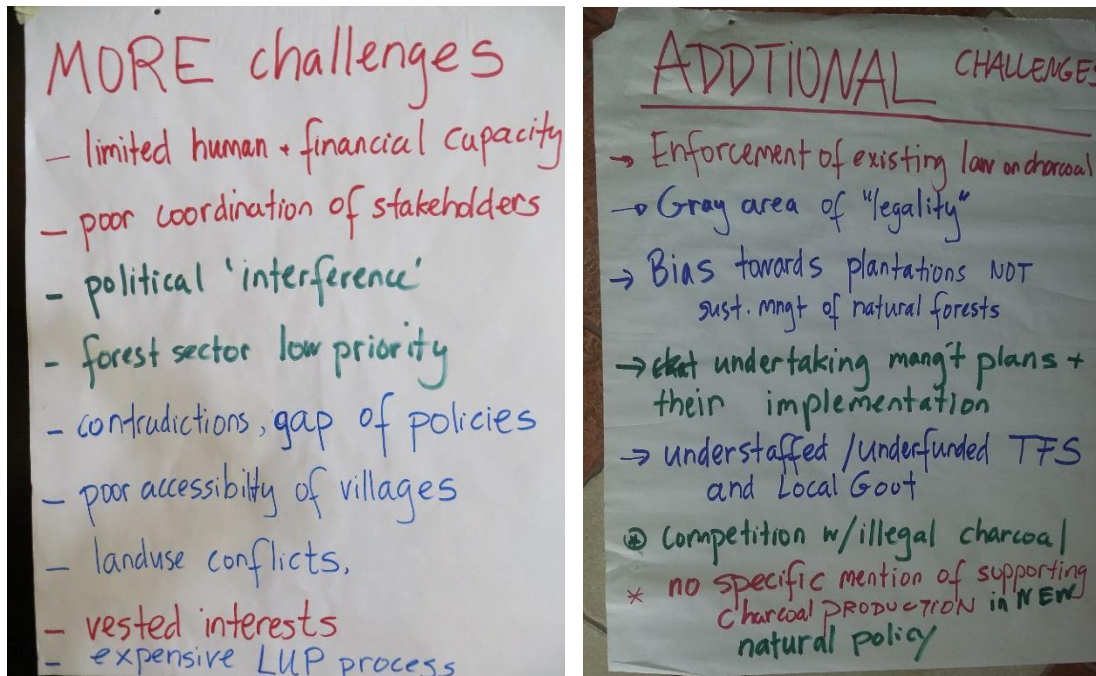


Figure 5: Additional challenges (some repeated) that were identified during discussions ensuing from the MNRT & TFS (right), and RALG (left) presentations

Several additional challenges were identified, but because they appeared only once across the seven groups, they were considered 'unique' challenges specific to the case study evaluated. These were:

- Low political influence of producers
- Environmental impact of supply (specifically depletion of soil nutrients from diverting agricultural residues to production of biomass briquettes)
- Informality of the sector
- Unlinked demand & supply
- Expense of maintaining certification (specific to the Mpingo Conservation Project which has to maintain its Forest Stewardship Council certification)
- Poor financial management at village level (could be linked to weak local governance)
- Conflict of interest between government bodies (specifically referring to the TTCS Kilosa Project whereby was noted that it is not in the interest of TFS to assist communities to allocate increasingly more general land forests into village forests because this decreases TFS revenue stream which is from national forest reserves and forests on general land)
- Technological barriers (this was brought up specifically in one group's analysis of the TaTEDO case study)

Priority challenges

Consolidation of the priority challenges of all groups assessed according to importance and urgency (Day 2, Activity 8) resulted in the identification of five main groups consisting of the most repeated challenges across groups (Figure 6). The five priority challenges agreed upon after a brief plenary discussions are:

1. Absence of a supportive policy environment;
2. Low investment in the sector;
3. Misconceptions and lack of awareness;
4. Expense and complexity of the land use planning process; and
5. Informality of the sector

It should be noted, however, that this exercise was conducted rapidly and did not allocate enough time to really scrutinize the list of these priority challenges. It was correctly noted, while discussing the challenge “unsupportive policy environment”, for example, that both the Energy and Forestry policies are actually quite supportive and may not need to be the most important challenge to address in the short-term. It was discussed that rather than unsupportive policies, it is inefficient and misguided operationalization of existing policies that creates barriers in the sector.

It is also worthy to note that some of the challenges are inter-related and interdependent. For example, informality of the sector is partially due to weak governance, and it creates the environment for weak law enforcement. Low investment in the sector may be due partially to an unsupportive policy environment (which, for example, provides no mandate for TFS biomass energy activities to be financed by the MEM), but also due to misconception and lack of awareness in the sector, especially in decision-making bodies.

An important next step for stakeholders should be to revisit this exercise in order to scrutinize more carefully the challenges the sector faces and decide which should be considered as priority.

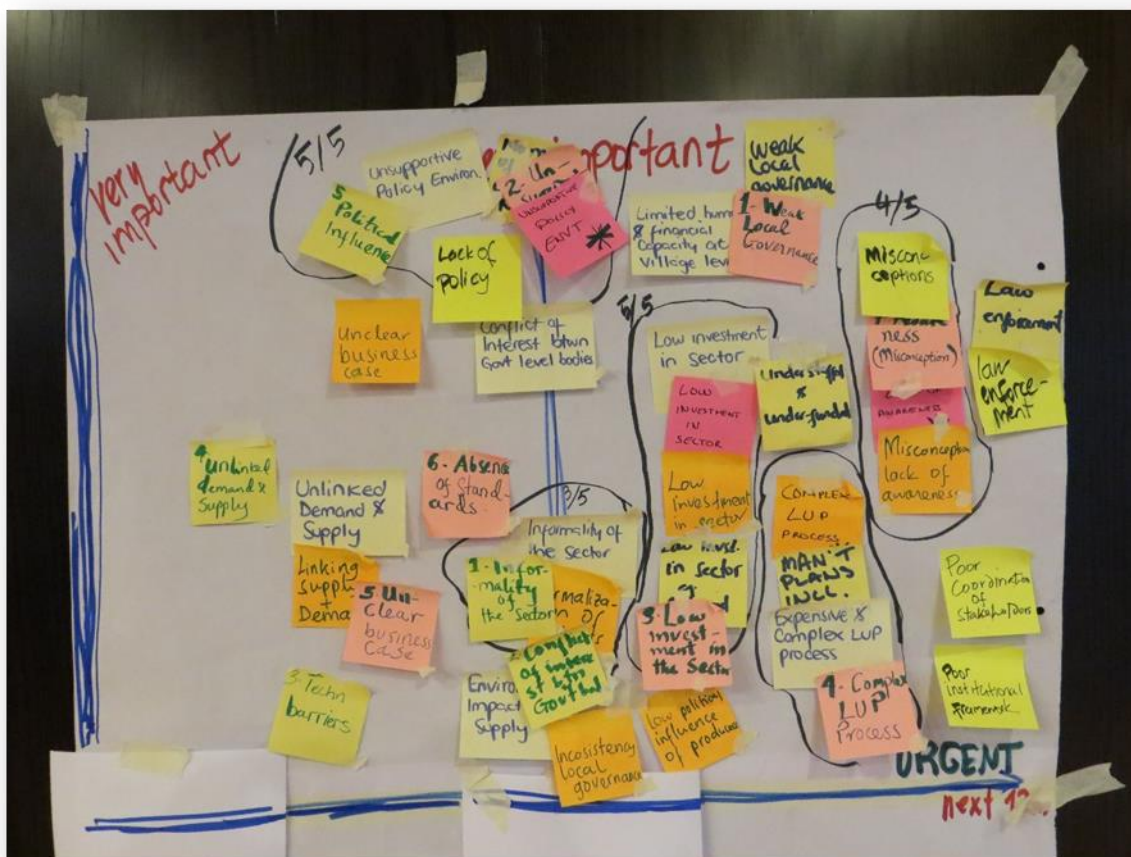


Figure 6: Consolidation of challenges identified as both “very important” (vertical axis) and “urgent” (i.e., needing to be addressed in the next 12 months - horizontal axis) in group work Activity 7. The objective of this plenary exercise was to identify coincidences across groups and agree on which challenges required immediate action. Black outline around clusters indicates challenges that were repeated across groups. The maximum number of times a challenge could be repeated was five (5). Table XX represents the same results graphically.

Action and next steps for the Sector

For four of the five priority challenges participants identified three actions to be undertaken in the next 12 months (Table 4). Due to some confusion during this exercise, the priority challenge “informality of the sector” was addressed by two groups while none worked on the “low investment in the sector” challenge. Participants also identified whether or not TTCS Phase II should include these actions, and who was to lead the implementation process.

The actions proposed by workshop participants can be divided into two main groups, Policy Actions and Project-level Actions. In terms of policy actions, the following sequence of actions were proposed:

1. Ensure that New Energy Policy not only acknowledges the wood-based biomass energy, and in particular charcoal, but that it makes clear statements of support for the sector equivalent if not surpassing that of coal and other biomass fuels (e.g., biogas). This action needs to be taken by commenting on the currently circulating draft Energy Policy, whose commenting period ends on 31st March 2015;
2. Advocate strongly for the approval and finalization of the existing draft National BEST so that action may be taken to re-organize how the sector is addressed at ministerial and local levels;
3. Develop an Advocacy and Communications (A & C) Strategy for the sector that identifies clearly, concisely, and effectively audience-specific messages and appropriate platforms to convey, convince, and lobby for change;
4. Implement the A & C Strategy

Project level actions that were proposed had a focus on addressing the supply-end by:

1. Scaling up existing activities at local level related to developing the necessary village land use plans (VLUPs) that form the basis for establishing village forest reserves;
2. Supporting establishment of VLUPs led mostly by NGOs and the National LUP Commission;
3. Capacity building at local and village government levels on managing forests for extractive use for charcoal and other forest-enterprise activities;
4. Strengthening law enforcement.

Actions for TTCS Phase II

TFCG and MJUMITA were identified by workshop participants as key players in the development and implementation of an Advocacy and Communications Strategy that is supported by stakeholders in the sector. This Strategy would address three of the five priority challenges: unsupportive policy environment, misconceptions and lack of awareness, and, the informality of the sector. In terms of project-level action in the field, participants suggested that TTCS Phase II should scale up and continue the work it has been doing to support establishment of village forest reserves, capacity building at local and village government levels, and amplifying the experiences and lessons learned in implementing sustainable charcoal production systems in community managed forests.

Impact of the workshop

Familiarity with and in depth knowledge of the draft BEST

The decision to frame the workshop around the draft National BEST Action Plan and to base activities and discussions around the recommendations that it provides suggests that the workshop was successful in educating at least 29 workshop participants who had indicated in the pre-workshop assessment that they were only somewhat or unfamiliar with BEST.

Table 4: Actions to be implemented in the next 12 to 24 months in the biomass energy sector to address priority challenges

Priority Challenge	Proposed Actions	Should TTCS II include	Who should lead the action
Unsupportive policy environment	[need for] national over-riding bioenergy policy & legal framework	should do awareness and advocacy	MEM (ACRE)
	Finalize and launch BEST & its Action Plan	NO	MEM
	Integrate Biomass Energy in National Forest Policy & other sectors	NO	MNRT
Low investment in the sector	not analyzed	not analyzed	not analyzed
Misconceptions & lack of awareness	acquire the right message for awareness creation to the different stakeholders	yes	TFCG, TaTEDO), Govt (FBD, MEM, PMO-RAGL) (MEM should lead)
	Create awareness through forums, media, etc	yes	
	Monitoring & evaluation of the impact (of the awareness raising)	yes	
Complex & expensive VLUP process	support VLUP in the new areas through participatory processes	yes	PLUM, TFCG, MJUMITA, and villages (NLUPC)
	support establishment of CBFM	yes	
	Planning of SCP (resource assessment, FMUs, IBEK trainings)	yes	
	Strengthening the implementation of VLUPs, CBFM, & SCP in the first 8 villages	yes	
Informality of the Sector I	develop a biomass policy	Yes - advocacy & lobbying	TFCG/MEM
	Review legislation	yes - campaign across all levels	MJUMITA, MEM
	develop an institutional framework for implementing BEST at local government authority level	YES - capacity building	TaTEDO, PMO-RAGL
Informality of the Sector II	develop biomass energy policy (with a focus on supply-end actions)	yes (advocacy)	MEM
	Promote formalization of local level initiatives	yes (evidence based models)	District Councils & TFS
	increasing & strengthening law enforcement to reduce illegal activities in the sector	yes - advocacy & joint efforts	TFS & the Government

Usefulness of the workshop to participants' work

On both days 1 and 2 the majority of participants agreed whole-heartedly that they found the sessions (presentations, discussions and activities) useful and relevant for themselves and their work (Figure 7). This is despite the fact that at least half of them were already quite familiar with the biomass energy sector and more than 80% were familiar with the TTCS project prior to the workshop. This means that the workshop achieved more than it had intended to in terms of making the encounter meaningful to participants for their own work.

The workshop as a networking opportunity

A vast majority of the participants used the workshop as a networking opportunity. This was partially facilitated on the first day by requiring participants to be in pre-selected groups consisting of multiple sectors. By the end of the first day, all participants had met at least three new people (Figure 7) even though a show of hands at the beginning of the workshop indicated that many already knew at least five people in the room.

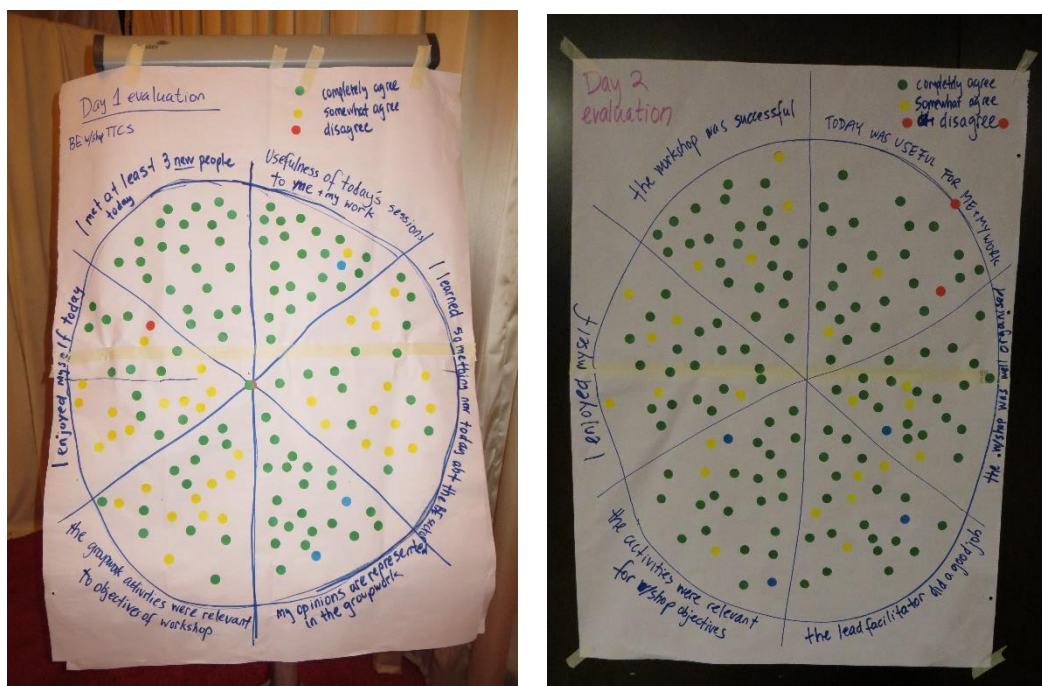


Figure 7: Day 1 and 2 workshop evaluations allowing to assess impact and success of workshop

Media coverage

Eight of the attendants at the workshop were from the media, representing English and Swahili language newspapers and television news (by ITV). Scanned images of these articles are provided in Annex VI: Media coverage.

Newspaper coverage

At least six articles related to the workshop were published in National newspapers and bulletins immediately following the event. Most articles were published in The Guardian. We have not been able to obtain copies of the material published in Nipashe, Mtanzania and JET by the journalists who attended the event.

1. **The Guardian on Wednesday February 25, 2015 Pg 12: CHARCOAL/Sustenance: How sustainable charcoal has transformed Kilosa residents**

The article narrates how Sustainable Charcoal Project (SCP) has transformed eight villages in Kilosa district. Through the project the villagers have built a dispensary, classrooms, doctors and teachers' houses from the project. Besides the construction projects, the villagers have raised millions of shillings and also benefited from improved knowledge management and governance in the biomass energy sector.

2. **The Guardian on Friday 27 February ,2015, BIOMASS ENERGY/Benefits: Prof: Tanzania must not abandon/marginalize biomass energy**

This article describes the keynote presentation given to the government by Professor Romanus Ishengoma from the Faculty of Forestry and Nature Conservation Sokoine University of Agriculture (SUA) as part of the opening session during the Bio energy Workshop on 26th Feb 2015. According to him, Tanzania like most developing countries, biomass fuel dominates as a source of energy. It accounts for about 90 percent of the total national energy consumption with 2 percent from electricity and 8 percent from petroleum products. Tanzania's charcoal industry is one of the country's largest industries. It estimates that the industry is worth USD650 million and employs several hundred thousand people in rural and urban areas. Over one million tons of charcoal is

consumed each year in Tanzania. Charcoal will continue to playing a crucial role as an energy carrier in the next 2 to 3 decades at least in Tanzania. Energy is needed to fuel economic growth and development.

3. *The Guardian on Sunday March 1,2015 (National News): Charcoal stakeholders ask for regulations*

The article describes briefly about the need to legalize and regulate charcoal sector. Charcoal can play a major role in income generation for the poor rural dwellers and contributes heavily to the national economy if the government can direct its efforts to legalize and regulate the sector.

Currently, clear government policies and regulations are needed to improve the sectors performance. The sector is characterized by weak governance, law enforcements and free access to wood resources which leads to deforestation and land degradation. Charcoal business is generally illegal and unsustainably harvested without licenses and levies, a trend that was costing the government.

4. *The Guardian on Friday 7th March 2015, GOVERNMENT/Commitment: The Swiss government to increasing rural incomes, climate resilience.*

The article is about commitment and determination of the Swiss government to increase rural incomes and climate resilience in Tanzania. This was said by Ambassador of Switzerland to Tanzania, Olivier Chave at the national stakeholders' workshop to explore the evidence, map the way forward and plan for the future actions of developing biomass energy in Tanzania.

5. *The Guardian on Tuesday March 10 2015, COLUMN: Expert: See charcoal not a setback but as socio-economic opportunity*

In this article, Dr. Tuyeni Mwampamba, a researcher at the Centre for Ecosystems Research, Mexico shares her global experience on the sideline of the national stakeholder's workshop on biomass energy in Dar es Salaam-Tanzania which she facilitated. Dr. Tuyeni shares her experience on understanding the charcoal sector, from production to policy; the ecological aspects of production as well as the social, political and economic significance of the sector.

6. *MEM News Bulletin, 2nd March 2015, Edition 56, pg 4:- Serikali yatathmini kurasimisha matumizi ya kuni na mkaa.*

In this weekly bulletin produced in Swahili language, the Minister of Energy and Minerals in his opening speech clearly showed commitment and supported the initiatives of formalizing the fuelwood and charcoal sub sector. The article also showed concern from the keynote background paper presented earlier in the workshop in the high rates of dependency on the charcoal sector in the country and the urgent need to address it through well-coordinated efforts.

Television coverage

Four (4) ITV news items were broadcasted between 28th Feb and 2nd March 2015 describing various workshop events and narrating the workshop objectives and achievement from the perspective of various participants.

Radio coverage

TBC Radio recorded and produced five radio programs. These were broadcasted within the month of March from the 10th of March. Broadcast was aired in the context of two main Environmental programs of TBC radio known as "URITHI WETU" ("Our Heritage") which is normally aired for 15 minutes on Thursdays from 12.02 pm to 12.15 pm and "MAKALA YA MAZINGIRA" aired on Thursdays from 2.02 pm to 2.30 pm. These programs will be repeated several times in the month of March.

Workshop evaluation

Twenty-three of the 27 participants who evaluated the workshop on Day 2 agreed strongly with the statement “the workshop was a success”. This same proportion also said that it was well organized, and that the facilitation was well done (22 of 27). Nineteen out of 25 said that they enjoyed themselves on day two, which was a significant improvement from the previous day’s evaluation in which 11 agreed strongly with the statement that they had enjoyed themselves, 12 agreed somewhat and 1 disagreed completely. On the second day, many more (22 of 25) found the workshop activities much better linked with the workshop objectives than the previous day when 11 out of 23 found activities only somewhat linked with the objectives.

A show of hands at the end of the workshop indicated that objectives 1 to 3 of the workshop had most certainly been achieved, and that objective 4 (embark on actions for the biomass energy sector) was only somewhat achieved. Indeed, while actions had been identified for addressing priority challenges, there was insufficient time to discuss them in plenary and to subsequently determine how to embark on implementing these actions.

Conclusions and Recommendations

The overarching objective of this two-day key stakeholder workshop was to bring together high-level actors in the biomass energy sector in Tanzania in order to outline a plan of action for supporting implementation of recommendations put forth in the draft National Biomass Energy Strategy (BEST).

To identify the basic elements for such a plan of action, it was deemed necessary to undertake a collective process of defining and prioritizing the challenges faced by the sector using the experiences of existing and ongoing projects, and the experiences and knowledge of the stakeholders. Consequently, the specific objectives of the workshop were:

1. To collectively explore evidence of the potential for a sustainable charcoal sector in Tanzania;
2. To identify and prioritize shared challenges across the sector;
3. To outline a way forward for the biomass energy sector and identify those challenges that a TTCS Phase II could address; and
4. To embark on future actions for the sector

A series of presentations, group work activities, and plenary discussions helped identify five challenges shared across the sector:

1. Absence of a supportive policy environment;
2. Low investment in the sector;
3. Misconceptions and lack of awareness;
4. Expense and complexity of the land use planning process; and
5. Informality of the sector

The challenges are inter-related and can be linked to other challenges that were mentioned in the course of the discussions, but which did not make it to the finalist list. Addressing them requires that stakeholders immediately unite and begin advocating and lobbying for important changes in the way charcoal, in particular, is addressed by the circulating draft National Energy Policy.

Implications for TTCS Phase II

A series of actions to take have been recommended by participants, which - in essence – consolidate to provide a unanimous approval from stakeholders for the TTCS Phase II to a) lead the process of developing and subsequently implementing an Advocacy and Communications Strategy for developing

biomass energy in Tanzania, and b) to scale up its MJUMITA Sustainable Charcoal model to other Miombo areas. Garnering the financial support to enable a TTCS Phase II is the immediate challenge for TFCG and MJUMITA.

Implications for an Advocacy and Communications Strategy

An A & C Strategy was strongly implied as the approach for addressing three of the five priority challenges identified by participants: unsupportive policy environment, misconceptions and lack of awareness, and informality of the sector. The actions required for developing this Strategy were outlined in the last activity of the workshop and consisted of identification of clear messages to be communicated and specific issues to be advocated. The A & C Strategy is expected to target multiple audiences and use forums and platforms that are audience- and message-specific. Participants proposed monitoring and evaluation of A & C Strategy implementation and application of adaptive management to adjust and reshuffle priorities based on recorded success.

Recommendations for immediate next steps for stakeholders

The following recommendations are made to stakeholders that participated in this workshop. These recommendations come from the lead workshop facilitator and are based on the consolidation and assessment of the discussions that ensued in this two-day event, subsequent discussions with the TFCG, MJUMITA and TaTEDO Partnership that took place post-workshop, discussions with Mike Bess, who led the team which developed the draft National BEST, and her personal experiences in the sector.

There were many important and interesting comments that were made in the course of the two days for which there was insufficient time to explore and discuss. Also, because there wasn't sufficient time to scrutinize all outcomes from each activity, it is necessary to be precautionous of how they are used and interpreted in subsequent encounters and activities in the sector by the TTCS Project or others. The following recommendations are made with the luxury of having had time to reflect on the workshop outcomes. They serve only as suggestions for how stakeholders could move towards developing an action plan for addressing the biomass energy sector.

A charcoal stakeholder group is needed

Form a charcoal stakeholder group (CSG) that consists of biomass suppliers, producers, transporters and others along and parallel to the value chain (such as research institutes, Development Partners, and others). This group should be tasked with bringing stakeholders together to develop a common vision, assess each challenge in more detail, determine how best to approach it, develop an Advocacy and Communications Strategy, and define specific issues to lobby for. This workshop provided the space to initiate important discussions, but it was too short to address any of the challenges in detail and to formulate a strategy for each. A sequence of subsequent meetings and dialogue are needed to make sure stakeholders are united in their approach for solutions.

Advocate for a charcoal-specific strategy

The CSG should advocate for a charcoal-specific strategy rather than a generic biomass energy strategy. The facts and evidence presented at the workshop and available in the literature clearly show that charcoal is a unique 'issue' in biomass energy; it does not share many of the characteristics of production and distribution with other biomass substitutes. Conversion of biomass to electricity, gas and ethanol are more explicitly supported by policy than 'traditional' charcoal production and use. Advocating for a generic BE Strategy runs the risk of diffusing the special attention needed for charcoal.

Streamline key messages for MEM and MNRT

The messages to communicate to MEM and MNRT need to be streamlined, clarified and clearly expressed. The first task of the CSG should be to identify precisely what these should be. Priority challenges identified in this workshop need to be assessed more thoroughly. For example, what is meant

by 'misconceptions in the sector' or the need for 'awareness raising'? What aspect of charcoal is misunderstood? By whom? Whose awareness needs to be raised?

Key Message 1: MEM should finance MNRT biomass energy activities

Although not discussed in any detail, the workshop discussions suggest strongly that MEM should have two main functions in the biomass energy sector:

1. It should support biomass supply activities financially in the same way that it supports generation of other forms of energy, including gas and electricity. Specifically, it should allocate funds for MNRT (and TFS in particular) and Local Government to secure supply of biomass for present and future charcoal production. Hence major awareness raising and lobbying is needed directed towards MEM.
2. MEM should work closely with NGOs, Private Sector and the Tanzania Bureau of Standards to promote efficient and alternative consumption at the user-end (cooking stoves and production of substitutes to charcoal).

Key Message 2: TFS should leave enforcement and revenue collection to other entities

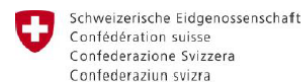
In terms of MNRT, and specifically TFS its function in the energy sector should be primarily to supply biomass energy sustainably. This will require three major changes in the approach currently used by TFS:

1. As the government body managing a principal source of energy in this country, MNRT should lobby to receive financial support from MEM to set up
2. TFS should abandon all their activities related to end-use of charcoal and focus only on the sustainable supply of biomass energy. End-use initiatives will be passed on to MEM, as described above;
3. TFS should transform to a service-oriented agency that works closely with local government primarily to provide technical support to communities to develop and implement their forest management plans. It should not be an enforcement agency or have revenue-collecting functions. A separate organization within MNRT should be formed to overlook correct applications of laws and regulations. Under this setting, TFS – as a service agency – may also be subjected to scrutiny.

Clearly, the implementation of these and other recommendations will require a strong, committed and united stakeholder group that is supported morally and financially by the government, development partners, and international stakeholders. Based on the outcomes of this workshop, TFCG and MJUMITA seem to have garnered the support of important stakeholders who would like to see them lead the process of truly and indefinitely transforming Tanzania's charcoal sector.

Annex I

Workshop Programme



Swiss Agency for Development and Cooperation SDC

Workshop Programme

“National Workshop for Exploring the Evidence, Mapping the Way Forward and Planning for Future Actions for Developing Biomass Energy in Tanzania”-
26th to 27th February 2015
Hyatt Regency Hotel, Dar es Salaam, Tanzania

Program Day 1: Thursday 26th February 2015

Time	Presentation/Activity	Presenter/Facilitator
8:30	Registration of participants	Secretariat
9:00	Welcome remarks	Charles Meshack , Executive Director Tanzania Forest Conservation Group
9:05	Objectives and Structure of the Workshop & Introductions	Dr. Tuyeni H Mwampamba , Lead Facilitator National Autonomous University of Mexico
09:30	<i>Keynote Speech: National trends in biomass energy in Tanzania</i>	Professor Ishengoma , Sokoine University of Agriculture
10:00	Remarks from the Government of Switzerland	Honorable Olivier Chave , Ambassador of Switzerland
10:10	Opening Speech	Honorable George Simbachawene , Tanzania Minister of Energy and Minerals
10:20	<i>Tanzania’s Biomass Energy Strategy (BEST): Key lessons, recommendations and the Action Plan</i>	Mr. Paul Kiwele , Acting Assistant Commissioner (Renewable Energy) Ministry of Energy and Minerals
10:50	<i>The Kilosa Sustainable Charcoal Model: achievements, lessons learned and future plans</i>	Charles Meshack , Director of Tanzania Forest Conservation Group
11:15	Tea and coffee break	GROUP PHOTO @ the Fountain ALL
11:50	<i>Activity 1: Marketplace Presentations of Projects’ Experiences:</i> TaTEDO – technology development ARTI Tanzania – charcoal briquettes Tabora Miombo Charcoal Project – sustainable charcoal Mpingo Conservation Project – forest management	Estomiah Sawe , Executive Director Manon Lelievre , Program Officer Edwin Nssoko , Project Manager Jasper Makala , Chief Executive Officer
12:30	<i>Activity 2: What do these experiences and evidence reveal?</i>	THM
13:00	Lunch	
14:00	<i>Activity 3: Linking the evidence & experiences to implementing BEST</i>	THM
14:40	<i>The growing role of biomass as a modern, “green” and sustainable energy source in a broader context</i>	Mike Bess , Senior Consultant, CAMCO
15:10	<i>Activity 4: Plenary discussion – what can we learn from the global context?</i>	THM
15:50	<i>Activity 5: Plenary discussion → Identification of key stakeholders</i>	THM
16:20	<i>Summary of day’s achievements, Insights & Reflections</i>	THM
17:00	End of Day One	



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Swiss Agency for Development
and Cooperation SDC

Program Day 2: Friday 27th February 2015

Time	Presentation/Activity	Presenter/Facilitator
8:30	Registration of participants	Secretariat
9:00	Recap of previous day & objectives for Day 2	THM
9:15	<i>Key Stakeholder: Biomass energy and the National Forest Policy</i>	Mrs. Gladness Mkamba , Director, Forest Beekeeping Division, Ministry of Natural Resources and Tourism
9:45	<i>Key Stakeholder: TFS and its role in governing the biomass energy sector: achievements and lessons learned.</i>	Mr. Juma Mgoo , Chief Executive Officer, Tanzania Forest Services Agency
10:15	<i>Activity 6: Incorporating the forestry perspective into the action plan</i>	THM
10:45	<i>Key Stakeholder: Local government and its role in governing the biomass energy sector: achievements and lessons learned.</i>	Dr. Lucy Ssendi , Prime Minister's Officer for Regional Administration and Local Government
11:15	Tea and coffee break	
11:35	<i>Activity 7: Group discussions → What should the role of Local Government be?</i>	THM
12:10	<i>Transforming Tanzania's Charcoal Sector: Potentials, limitations & impacts of Biomass Energy in Tanzania.</i>	Dr. Josiah Katani , ForConsult & Quantis Research Team
12:30	<i>Activity 8: Plenary discussion → Are we on the right track?</i>	THM
13:00	<i>Proposal for pushing forward actions in biomass energy development</i>	Led by Charles Meshack & Estomiah Sawe
13:15	Lunch	
14:15	<i>Activity 9: Plenary discussion → Outlining the Action Plan & Next steps</i>	THM
15:15	<i>Reflection and comments from plenary</i>	THM
15:30	<i>Way forward remarks – SDC</i>	Mr. Ueli Mauderli , Head, Rural Development Sector, Swiss Development Cooperation (SDC)
15:40	<i>A word from MEM</i>	Mr. Paul Kiwele , Acting Assistant Commissioner (Renewable Energy) Ministry of Energy and Minerals
15:50	<i>Closing remarks - MNRT</i>	Mr. Juma S. Mgoo , Chief Executive Director, Tanzania Forest Services, MNRT
16:00	Workshop evaluation	Secretariat
16:30	End of Workshop	

List of Participants

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Annex II

Opening Speeches & Closing Remarks

Remarks: Swiss Ambassador to Tanzania



Delivered by His Excellency Ambassador Olivier Chave

- **Honorable George Simbachawene, Minister for Energy and Minerals in Tanzania**
- **Mr. Masanyiwa (Chair to the BEST Steering Committee)**
- **Other Government Representatives**
 - from the Ministry of Natural Resources and Tourism
 - CEO of Tanzania Forest Services (Mr. Juma S. Mgoo)**
 - Director of Forest and Beekeeping Division (Mrs. Gladness Mkamba)**
 - from PMO-RALG (Mr. Sanford Kway)
- **Representatives from TFCG**
- **Academicians, Researchers**
- **and Consultants present in this room**
- **Fellow Colleagues from the Swiss Embassy, and**
- **Dear participants of this workshop**

Ladies and Gentlemen,

For over many years, uncontrolled Charcoal production has been a major driver of deforestation and forest degradation in Tanzania.

The increasing demand for charcoal in urban areas is a driving factor to the declining of the forest area in Tanzania, in other words I mean to say that the charcoal industry could significantly accelerate deforestation if it remains uncontrolled.

In Tanzania, forests are crucial to the national economy. Rural communities depend on forests and woodlands for on average, 20 % of their household incomes.

Tanzania's forests also provide ecosystem services vital to the national economy such as stabilising run-off in catchment areas and preventing soil erosion.

Therefore unsustainable utilization of its forests, Tanzania's forests will eventually disappear and the country and its population will lose the valuable services and products that they provide.

The World Bank projects that charcoal production and consumption will not decrease before 2030 in Tanzania; this calls for a realistic approach to energy provision for the country.

Moreover, rural poverty continues to be a reality for the majority of Tanzanians.

80 % of Tanzanians depend on agriculture, forestry and fisheries for their livelihoods. Small-scale farmers in Tanzania are particularly vulnerable to the impact of climate change. Diversifying rural livelihoods helps them building resilience to climate change.

Therefore, Sustainable charcoal production that doesn't exceed the annual growth of their forests and which is controlled by the villagers themselves, offers a value chain that contributes to building rural communities' resilience to climate change by increasing both the villagers' incomes and guarantees the long-term quality of the villages' natural resources.

SDC's pilot project in Kilosa shows positive signs that sustainable charcoal is possible and could offer communities a step-up along that pathway to a better life.

The Project takes the approach of engaging local communities as envisaged in 'The Village Land Act, No. 5 of 1999' by empowering the local communities, through trainings to successfully become guardians of the natural resources within their locality against all sorts of vandalism and from intruders.

Transforming Tanzania's charcoal sector requires a commitment from all stakeholders to formalize the industry into a modern, efficient and sustainable sector; and to move away from the pattern of un-managed, often illegal harvesting that characterizes and dominates the sector today.

I am Confident that;

This workshop provides an important opportunity for stakeholders to discuss the challenges and opportunities posed by the biomass energy sector; and to identify ways that we can work together to make the most of the opportunities whilst tackling the challenges head on.

The Swiss Government through SDC is committed to increasing rural incomes and climate resilience here in Tanzania.

We are committed to reducing rural poverty by increasing income and employment, and to helping Tanzania adapt to a changing climate. We are ready to work with the Government, civil society, rural communities, development partners and other stakeholders to tackle rural poverty and to promote a more sustainable biomass energy sector.

Opening Remarks: Minister of Energy & Minerals



Delivered by Hon. George B. Simbachawene (MP)

Chairperson;

Your Excellency, Olivier Chave, Ambassador of Switzerland;

Hon. James Lembeli (MP), Chair, Parliamentary Standing Committee on Land, Natural Resources and Environment;

Hon. Richard Ndassa (MP), Chair, Parliamentary Standing Committee on Energy and Minerals;

Representatives of Development Partner;

Distinguished Participants;

Ladies and Gentlemen!

It gives me great pleasure to officiate the opening of this workshop whose theme and objectives are in line with our National Energy Policy towards sustaining Tanzania's Charcoal Sub-Sector. I therefore, take this opportunity to welcome you to this particular Stakeholders' Workshop which aims at demonstrating a pro-poor approach towards reducing deforestation and forest degradation by transforming Tanzania's Charcoal Sub-Sector through development of markets and supply chains for sustainable charcoal use and improvement of knowledge management and governance.

Ladies and Gentlemen,

On behalf of the Ministry of Energy and Minerals, I sincerely commend the organizers for preparation of this workshop and bringing together a wider cross-section of stakeholders including Members of Parliament, Government Ministries, Private Sector representatives, NGOs representatives, Academicians, researchers, Development Partners and interested groups to discuss these pertinent issues of sustaining the charcoal sub-sector.

Ladies and Gentlemen,

I am encouraged to see representation of different organisations present here to set a new avenue for collaboration between the Government and other stakeholders to better develop the energy sector. I also welcome his Excellency Olivier Chave, -Ambassador of Switzerland - and representatives from the

Government of Switzerland through the Swiss Agency for Development and Cooperation (SDC), esteemed Development Partners from Finland, Belgium, the UK, the EU, UNDP and the World Bank.

I am informed that during this Workshop, stakeholders will share the outcomes and findings of the first phase of the Project: Transforming Tanzania's Charcoal Sub-Sector Project (2012-2014). This is an opportune time for the Government to tap experiences from Tanzania Forest Conservation Group (TFCG), Tanzania Traditional Energy and Environment Development Organization (TaTEDO) and Community Forest Conservation Network of Tanzania (MJUMITA) on the existing facts observed during the project implementation that may be factors contributing to hindering sustainable development of biomass based energy. Such facts call upon the need for more collaborative efforts amongst various stakeholders.

Ladies and Gentlemen,

The Government is implementing various programmes, projects and Strategies, aiming at realizing sustainability of biomass sector. It is important to note that forests are being destroyed by unsustainable human actions not only as woodfuel (firewood and charcoal) exploitation but also land clearing for agricultural activities, extraction of building materials (timber, poles and withies), mining and also bush fires which are sometimes caused by honey collectors and wild animal hunters. Commercial timber species are almost depleted in some forest reserves. Almost all the public forests and reserves are surrounded by local communities whose survival depends on exploitation of forest products.

Ladies and Gentlemen,

Tanzania's energy balance is dominated by biomass-based fuels particularly woodfuel, which are the main source of energy to both urban and rural population, biomass-based fuel accounts for about 85% of primary energy supply. Different projects are being implemented in Tanzania to promote efficient use of biomass (firewood and charcoal) and promote use of alternative sources of energy for cooking in households such as Liquefied Petroleum Gas (LPG) whose level of utilization has increased tremendously since 2004. Distributors of LPG in the country include ORYX, Oil Co, Mihan, Lake Oil, Manjis' and Hashi.

Ladies and Gentlemen,

To put the biomass sub-sector that include charcoal and firewood into perspective, the Government through the Ministry of Energy and Minerals in collaboration with other key stakeholders has embarked on development of a National Biomass Energy Strategy (BEST) that includes an entirely new approach in the biomass sector development. The BEST aims at making biomass more productive and sustainable to realize more income and better living to citizens. The "BEST" elements are expected to be areas of discussion in this Workshop.

Ladies and Gentlemen

Transforming the charcoal sub-sector is initiative that has come at an opportune time, when the Tanzania is starting to speed up the efforts of fulfilling her Development Vision 2025 by implementing the Big Results Now initiative. "Big Results" could obviously be achievable through securing steady and dependable access to modern biomass energy services.

The Ministry is presently revising the National Energy Policy to accommodate broadly the issues of biomass which includes solid biomass such as firewood, charcoal and agricultural residues; the gaseous biomass including biogas and producer gas and the liquid biomass such as liquid biofuels including biodiesel, ethanol and straight vegetable oils. To date, Ministry after thorough consultation with stakeholders has finalized the draft Liquid Biofuels Policy and its Strategic Environmental Assessment that aims at mitigating the negative Environmental impacts, food and land insecurity, and other crosscutting issues such as child labour, protection of interests of vulnerable and disadvantaged groups and attention to HIV/AIDS.

Ladies and Gentlemen,

It should be noted that, current global concerns about climate change, as well as energy security, have opened up new opportunities for the development, including the use and dissemination of new biomass energy technologies. From both the economics and development point of view, biomass energy has a potential to play a very significant role. It can play a vital role in reducing GHG emissions, help countries to reduce the reliance on imported fossil fuels, which will create better energy mix, and contribute significantly to meeting global energy demand. Charcoal consumption in Tanzania is about one (1) million tonnes per year.

Ladies and Gentlemen,

I commend the efforts of all major stakeholders who have participated in developing a new model to address the biomass energy sector that can ensure a scalable strategy that woodfuels are harvested using environmentally sustainable approaches and that the model creates livelihoods for rural communities and people at the grass-root levels. I have been informed that communities which practiced the model have managed to generate reasonable incomes. The Ministry of Energy and Minerals, will find a suitable way to ensure all positive measures of this model are incorporated in our development endeavors and for guidance during implementation of the Biomass Energy Strategy (BEST).

Ladies and Gentlemen,

I hope, apart from comprehensive suggestions obtained from this Workshop, recommendations put forward and commitments pledged would enable the Government and related stakeholders to effectively put those recommendations in practical actions.

Participants, Ladies and Gentlemen,

Finally, I wish you fruitful and successful deliberations. Having said that I now declare this important Workshop on “Transformation of Tanzania’s Charcoal Sub-Sector” officially opened.

Thank you very much for listening

Remarks: Parliamentary Standing Committee for Energy and Minerals



Delivered by Member of Parliament Hon Muftaza Ally Mangunga, Representative

**Dear distinguished participants,
Development partners,
Representatives from the Finnish, Norwegian and Swiss Embassies,
Workshop organizers,
Academia and the media;**

It is a great opportunity I have received to say a few words of remarks concerning this workshop and the Energy Sector as a whole but in specific the biomass sub sector. These two days have been very pertinent in generating very good issues that we as politicians should not take for granted.

As a member of parliament and my role in the Parliamentary Standing Committee for Energy and Minerals, it is important to recognize the importance of biomass energy for the national energy sector and for its role in rural development, we will push for finalizing the biomass energy strategy and developing a biomass energy policy.

The ongoing review of the Energy Policy is a major opportunity that you as practitioners should not miss when time comes for commenting on the draft.

We will request that the committees for MEM and for MLNRE sit together to agree on roles and responsibilities to ensure that there is clear leadership for the biomass energy sector.

We will urge government to take leadership and demonstrate commitment to transform Tanzania's biomass energy sector into a modern, sustainable, formal sector of the economy recognizing the critical contribution that it makes to the national economy.

We need the government to resolve the leadership vacuum that is undermining its position in the national economy.

Many thanks again for the opportunity.

Way Forward Remarks: Swiss Agency for Development & Cooperation



Delivered by Ueli Mauderli, Head of Rural Development Sector, SDC

Dear Government representatives,

Honorable Muhtazar Mangungu; Honorable James Lembeli, Director of Forest Services; Mr. Juma Mgoo, Director of Forest Beekeeping Division; Mrs Gladness Mkamba, Representatives from Ministry of Energy and Minerals; Dr. Lucy Ssendi from PMO RALG; Academician and Researchers, Prof. Ishengoma; Development Partners; Consultants; Representatives of TFCG, MJUMITA and TaTEDO; Participants of this workshop

It is with pleasure that me and my colleague Clara Melchior from the Swiss Agency for Development and cooperation (SDC) witness the high level of engagement and encouragement of all stakeholders including different ministerial entities in this workshop showing openness for the innovations that the Sustainable Charcoal Project and other projects and stakeholders in Tanzania are piloting [and] promoting.

We sincerely want to thank you for all the positive energy with which you were contributing to the results of this workshop.

We are especially pleased about the an obviously unanimous agreement that if charcoal trade in Tanzania will remain a reality, villages communities should be the ones profiting first and foremost from a sustainable management of their village forests, natural resources under their own auspices and competence for their own development.

Remembering the excellent keynote Speech of Professor Ishengoma SDC bears in mind two things. Future biomass demand in Tanzania will increase, whether we want that or not. Urbanisation of Dar es Salaam and other cities in Tanzania will continue and the urban population will reach 30% or more percent. Lacking reliable alternatives in the two decades to come these urban dwellers will buy and use charcoal, regardless of whether it sourced sustainably or not and of whether it is traded illegally or not.

Professor Ishengoma also highlighted that biomass from natural forests will not suffice. For this reason good village guardians of their forests on the one hand need to be in place but also alternatives to natural forests for biomass production need to be available. The necessary framework for a related private sector initiative including the small scale farmers needs to be strengthened.

Since Charcoal trade will remain a reality and since the actual trends are both a big opportunity and a big threat for the rural landscapes, we believe that its worthwhile working with Tanzania on the legality and the sustainability of the biggest cash crop of the country.

The Sustainable Charcoal Project with the ambitious title “Transforming Tanzania’s Charcoal sector is just a tiny pilot. SDC and TFCG are too small to claim transforming a giant. We need strong allies on different levels of government, in the development partner community and their implementing partners and coordinate with them in order to move activities and related policy dialogue forward.

The challenges on the local operational level but also on the local policy level are many, not to speak about intermediate and national levels. If Tanzania’s Charcoal is to be legalized we need stakeholders on all levels coordinated to tackle the challenges that you were looking at this morning and presenting and bringing together this afternoon.

Our common vision is that:

1. A realistic and modern policy shapes supply and demand for biomass energy in Tanzania
2. Technical, financial and political capacity and advice on the local level to do local land use planning, local forest resource management and advocacy on the villages level will be sustainable.
3. A sustainable biomass value chain exists and provides sustainable livelihoods to farmers, transporters and traders

To contribute to this SDC would like to see other donors joining the Sustainable Charcoal Project, in order to joining forces to be able to really call it “Transforming Tanzania’s Charcoal Project.

To reach people working technically in projects and in topical political dialogue the minimum we want to reach is a continuation and strengthening of platform that endures and brings different ministries, different projects, different levels of government and different schools of thought together to work on the charcoal challenge together.

Thank you so much.

Remarks: Ministry of Energy & Minerals Remarks



Delivered by Paul Kiwele, Acting Commissioner of Energy, Renewable Energy sub-Sector, Ministry of Minerals and Energy

I am pleased to be here today at this gathering and having the opportunity to give a word on behalf of the Ministry of Energy and Minerals.

Allow me recognize your significant and valuable contributions you are providing to the government of Tanzania and in particular the Ministry of Energy and minerals

You will agree with me there are very pertinent issues that you have considered regarding the Biomass Energy Development and sustainability of the charcoal sub sector, Discussions and deliberations provided in this workshop will be quite instrumental in shaping MEM's plans and the Biomass Energy Strategy

We promise to timely finalize the biomass energy strategy which will contribute to the transformation of the biomass energy sector and also provide room for participation of all keys stakeholders.

As expressed by the Minister of Energy and Minerals (Hon Simbachawene) yesterday, the Ministry will give full support to this initiative that has been put forward by TFCG, MJUMITA and TaTEDO under the support of Government of Switzerland We appreciate this initiative and the support.

As there will be a closing remark, from MNRT let me end at this juncture.

Closing Remarks: Tanzania Forest Services Agency



Mr. Juma Mgoo, Chief Executive Officer, Tanzania Forestry Services Agency, Ministry of Natural Resources and Tourism

Thank you to the organizers for giving me an opportunity to deliver some closing remarks. This 2 day workshop on Exploring the Evidence, Mapping the way-forward and Planning for future actions for developing Biomass energy in Tanzania, it is an indication that you appreciate how this biomass energy is very important in our social, economic and environmental related needs.

Let us have the desire and determination to make a change to ensure Biomass/woodfuel supply is sustainable. In reality for any efforts on dealing with energy in Tanzania cannot sideline addressing Biomass/woodfuel supply and demand. Not expecting in short-term the trend on dependence for woodfuel will change to other energy sources

What is needed:

- Policy interventions
- Legislation
- Prioritizing in our plans

More importantly is to put in place our plans into reality, i.e., implement, monitor, improve and innovate approaches to make woodfuel production and utilization efficient and effective (sustainable) cooperation and collaboration among key stakeholders

Annex III: Content exposed in Marketplace Presentations

ARTI Energy Tanzania



Project title: Mkaa Mkombozi

Project Objective: produce and commercialize 2000 tons/year of sustainable charcoal briquettes in DSM

A direct sustainable alternative to normal wood charcoal

- Recycling of biomass waste (agriculture residues sawdust..) and charcoal dust
- Mkaa Mkombozi is used in the exact same way as normal wood charcoal,
- It is 30% cheaper than wood charcoal
- It burns longer, without smoke and sparks
- It creates jobs and income opportunities for urban and rural poor especially women and youth

Why is it sustainable

- Mkaa mkombozi is made up of recycled materials
- It contributes to deforestation reduction and greenhouse gas emissions reduction
- It creates income at every stage of the value chain
- It is a profitable business

Fundamental logic

- Wood base fuel is the primary source of energy for 96% of the population
- Current wood charcoal production and trade is unsustainable
- There is a need to provide clean, affordable and sustainable fuel to consumers

- Prove that production and distribution of appropriate energy solutions is a profitable and sustainable business.

ARTI-Energy has supported construction of a production factory with 2lines of production; 2000tons/year capacity; Current production; 30tons/month, Total sales 2013-2014 is about 45 tons

Key barriers

- Lack of availability of working capital/banks are not aware
- Low incentives by the government
- Reluctance to change by the population-strong sensitization needed



TaTEDO at a Glance



Technicians Installing Solar PV System for a rural Health Centre in Bagamoyo



One of the Beneficiaries baking Cakes using Improved charcoal Oven (left) While another cooking by improved cook Stove (Right) as a result they are generating income and save the environment.

**TaTEDO is Committed to
Enabling the Rural Majority in
Tanzania to Access Sustainable
Energy Technologies and
Services.**



TaTEDO is a focal point of two energy networks: the East African Energy Technology Development Network (EAETDN) and the National Gender and Sustainable Energy Network (NGSEN). The organization is also a member of other national networks such as the Institutional Collaboration on Research and Development in Tanzania (ICRDT) and a member of the board of the University College of Engineering, Technology Development and Transfer Centre



Solar Phone Multicharger Services in rural are

Project Development and Management

With substantial field experience, TaTEDO has been developing and managing sustainable energy and environmental conservation projects in urban and rural areas by applying various implementation approaches in project development and management. The approaches are divided into several major steps namely **Creation of Local Partnership** working directly with local organizations and authorities, **Community Mobilization** with **Technical and business Capacity building and market networking development**. In a nutshell the three steps are explained as follows:

Community Mobilization

The use of Participatory Rural Appraisals (PRA) has been a major entry point for introducing sustainable energy technologies and services in programme and project areas. The purpose of Community Mobilization is to build and support collaboration and service integration, provide technical assistance, develop resources, and facilitate community engagement in order to promote sustainable energy and well-being of people at different levels.

Support to Local Energy Entrepreneurs

Capacity building is the core function of TaTEDO's initiatives. In the process of building capacity, the organization has supported improvement of the technical and business capacities of entrepreneurs and communities as a whole to manage and implement sustainable energy activities. Capacity building starts with awareness creation and technologies demonstration and business development. Thereafter provision of technical skills and business service in order to enable target groups to produce and disseminate technologies and capacity building through

training, Provision of energy technology production facilities and working tools. In order to speed up and create sustainability in the process of dissemination of sustainable energy technologies, the organization has managed to undertake training on energy entrepreneurship and business skills for target groups .



Beneficiaries of the Improved cook stove promoted by TaTEDO and light from Solar lantern .

Enterprises Development and Commercialization

As a Social Enterprise Organization our objective is to scale up and commercialize sustainable energy technologies and services through self-sustaining markets networks for meeting productive energy needs in households, institutions and small and medium entrepreneurs. The effort aim at contributing in a sustainable way to poverty reduction and environmental conservation in Tanzania through increased access to sustainable energy technologies and services

Through enterprise development and commercialization of modern energy technologies men and women entrepreneurs will be empowered to scale up dissemination of sustainable modern energy technologies and services. The institutional and financial barriers hindering commercialization of these technologies are addressed to allow entrepreneurs to conduct viable and profitable businesses.

Engendering Energy Services

TaTEDO embark on gender mainstreaming in energy project/ programmes and has so far conducted training to more than 34 energy practitioners . Gender mainstreaming energy projects ensure equal participation , opportunities and benefits to men and women there by contribute to achievement of MDGs.

Sustainable Charcoal Production

Efforts were made to promote sustainable charcoal production methods in order to reduce forest degradation and deforestation. The improved methods promoted by TaTEDO increase efficiency of the kilns from 10-15% of traditional methods to 20-25% and increase charcoal yield up to 30%.

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Project title: Mainstreaming sustainable forest management in the Miombo woodlands of western Tanzania

Project Goal: The secure ecosystem and biodiversity values while providing a buffer to the congolian rain forest, ensuring food security and sustainable livelihoods

Project purpose: To enable Miombo dependent communities to adopt productive practices that are favarouble to biodiversity conservation, reduce carbon emissions from land use change and improve livelihoods

Project area: The projects immediate focus is an area of 133, 400 ha covering 4 wards; Usinge-Kaliua District; Imalamakoye- Urambo district; Mbola cluster-Uyui district; Inyonga-Mlele district

Project components:

- Component 1-Enabling policy for SFM and up-scaling
- Component 2: Strengthening skills and capacities for knowledge based CBFM/JFM, integrated land use planning
- Component 3; Adoption of sustainable charcoal and energy switch to reduce pressure on woodlands and deforestation
- Component 4; Markets and technology support expansion of livelihood options to reduce pressure on agriculture and natural resources and increase income in the pilot wards

How does the project address either demand consumption or supply of biomass energy?

- Demand: the Tabora and Katavi regions are the host to several public institutions such as boarding schools, hospitals, prisons, and university campuses
- To mitigate this challenge the project has constructed two bio latrine plants for Milambo and Tabora girls schools that reduced fuel consumptions 964m³/year and 430m³/year respectively

- Reduce consumption; Improved cooking stoves to reduce consumption of charcoal and firewood in the pilot areas
- Formation of charcoal associations and training to promote sustainable charcoal production in the pilot wards
- The project facilitated the formulation of bylaws/sellers associations, two charcoal groups
- Strengthen law enforcement to reduce illegal charcoal production through creation of VNRC scouts, initiate check (28 VNRC,384 trained, 4CBO formed, one check point established)
- Charcoal makers should have private forest 10ha or more
- Promoting private forest, community and institutional forest (total of 4751.1ha are conserved/managed under CBFM)

How does the project demonstrate sustainability?

- Engagement of local communities in IGA,
- Education and Knowledge imparted to local community on improved charcoal kilns, sustainable charcoal
- Private forests for charcoal makers
- Promote private institutional and community forests (CBFM/JFM)

Mpingo Development and Conservation Initiative



Project Objectives:

- Facilitate sustainable timber harvesting from community managed forests to improve local livelihoods (conservation through livelihood)
- Demand-local and international marketing

Supply-expansion of village forests areas under community ownership to attract large buyer/investors

Sustainability-Commercializing-creating a business model which is self-sustaining in the long run (moving from total donor reliance)

How? Communities paying for the services from the timber revenues

Theory of change:

Illegal logging is one of the causes of deforestation in Tanzania

- -Most forests occur on village lands
- -Forest policy 1998 empowers communities to win and benefit from forest resources
- -In order to incentivize communities to conserve forests they need to win and benefit
- -PFM process-communities requires technical assistance (MCOT)

Communities need to realize sustained flow of benefit to conserve but not only to few leaders (governance). That is why MCDI focus on sustainable timber –In SE Tanzania there are valuable hardwood resource which can be sold in local and international markets

Key achievements

- For five yrs. from 2009-2014 five communities sold 2185 meter cubic of timber worth of TSH 345,725,214
- An area of forest of 85,666 conserved in 5 villages
- 8,000 people benefited, 50% of them were women,
- Money invested on Health insurance for disabled and elderly (19), School buildings(3), Water bore holes (6), 323 school uniforms, 50,000 for pregnant mothers (70), Nursery school and lunch for primary school children

Annex IV: Supporting materials for group activities

Activity 2: BEST Factsheet

BEST FACT SHEET	
BEST ACTION PLAN	Detail Explanations of the plan
1 Policies and Measures	
1.1 Extend BSC for 2 Years to Support & Monitor BEST Action Plan	Best steering committee needs to be reconstituted into a standing committee to guide the BEST Strategy and the BEST Tanzania Action Plan during the next two years. It is proposed to add a representative from the President's Office Planning Commission to the BSC.
1.2 Broaden TFS Mandate & Increase Capabilities	The key objective of expanding TFS's mandate, providing TFS with the financial, personnel and technical resources to work with villages, the private sector and local government is to improve forestry management, sustainable forest harvesting, and wood energy production to ensure that Tanzania's forest resources are sufficient to meet the country's wood energy demand.
1.3 Biomass Policy Inventory	Recommendations should be made with the perspective of seeking to mainstream and imbed biomass energy policy in all essential national and local policy (national energy policy, MKUKUTA, Five Year Development Plan, climate change and other environment policy, etc.). This should be done to ensure that all essential policy and administrative support is in place to ensure biomass energy sustainability.
2 Biomass Energy Supply	
2.1 Village Forest Management Plans	Developing and registering these plans is a crucial step in ensuring sustainable forest management. It is a pre-requisite to sustainable wood energy production. For this to occur, TFS's mandate needs to be expanded to enable it to take the lead national role to coordinate this activity
2.2 Private Forest Management Plans	As with village management plans, private forest management plans should be developed with TFS support, working with NGOs and others (including development partners)
2.3 Local Authority Forest Management Plans	Local authority forest management plans should be developed with TFS as a key step towards improved and eventually sustainable forestry management.
2.4 Joint Forest Management Plans	As TFS gains capacity and resources, it should set up joint forest management with villages, local authorities and the private sector. This will help strengthen management capabilities, communications, and cooperation on sustainable forest management as a means of meeting the BEST goal: to ensure that Tanzania's forest resources are sufficient to meet wood energy demand.
2.5 Organisation & Registration of Charcoal producers	This scenario of organising, training and registering charcoal producers is essential if Tanzania's forest resources are to become sustainable. TFS, with the MEM, with NGOs and the private sector, will provide training, technical assistance and, in some cases, small-scale finance, to promote improved charcoal production.
2.6 Sustainable Charcoal Production & Certification	TFS, working with the PMO-RALG (and key local authorities), and with MEM, should provide the BSC with a proposed plan for introducing sustainable charcoal certification, with a suggested timeframe. This should draw upon the experience of TFCG, WWF and others who have developed projects for sustainable charcoal.
2.7 Improve Collection of Forest Energy Fees	Improving the collection of fees from the harvesting of forests for energy production is essential to putting a price on forestry resources for energy. This is crucial in providing the revenues for supporting forest management, for improving harvesting, for replanting and afforestation and for sustainable wood fuel production (charcoal and firewood).
2.8 National Charcoal Transport Licensing	District authorities should be the only issuing bodies for transport licenses. They should share a proportion of the license fee with the TRA to provide incentives to district councils to put the resources into properly licensing wood energy product transport.
2.9 Payment for Environmental Services (PES)	PES should be supported to promote sustainable forestry management and the sustainable production of wood energy products
3 Biomass Energy Demand	
3.1 Improved Cook Stoves for: • Urban households; • Commercial, institutional and industrial stoves; • Urban household enterprises; • Rural household enterprises; and, • Rural households.	A key objective of the BEST Tanzania Action Plan for all ICS is to promote commercial approaches that generally involve training up local producers, or setting up local production facilities, having a market-based, competitive approach, and utilising development partner and NGO support to facilitate commercialisation, where the development partners and NGOs play a minimal role in actual production and sales, and a large role in:
3.2 Improved Fuelwood Use for Tobacco	
3.2.i Tree Planting for Tobacco Curing	During the Action Plan period, the TTB should be engaged to determine how farmers are supported for tree planting to ensure that tobacco-production, on the fuel supply side, is sustainable.
3.2.ii Improved Tobacco Curing	A study should be undertaken, through the MEM, the TFC, the TTB and the tobacco cooperatives, to determine the wood fuel savings potential for tobacco curing. This should build upon the World Bank/ESMAP work of 1988-89 and any other work in the sector in Tanzania.
4 Commercially-Viable Biomass Energy Substitutes	
4.1 Biomass Briquettes	Issues such as cost and economies of aggregating source materials (husks, sawdust, chardust, etc.), costs of production, and not least, consumer demand and markets are the key issues that need to be addressed
4.2 Biogas	As with briquettes, the objective of including biogas in the BEST Tanzania Action Plan's two-year period is to determine if biogas can be commercially viable at sufficient scale to make a significant contribution to reducing pressure on wood fuels production. If such a determination is made, the BEST Tanzania Project Team recommends a 2030 target of 120,000 biogas units, as laid out in the Alternative Biomass Energy Supply Scenario (Section 7)
4.3 Forest Residues	Both wood residues CHP and charcoal need to be reviewed with the same objective as biomass briquettes and biogas. As with those, wood residue electricity, and charcoal need to be reviewed during the two-year BEST Tanzania Action Plan period to determine if they can be scaled up sufficiently to make a significant contribution to reducing pressure on wood energy supplies and make them more sustainable.
5 Commercially-Viable Non-Biomass Energy Alternatives	
5.1 Kerosene for Cooking	The key objective to be addressed during the two-year BEST Tanzania Action Plan is what actions would need to be taken to increase the use of kerosene for cooking in order to reduce the pressure on wood energy supplies and make them sustainable.
5.2 LPG	As with kerosene, issues to be addressed include interest by fuel companies to increase imports of LPG and to increase the number of smaller-size cylinders (thus affecting price and availability in Tanzania's liberalised market), availability and cost of cooking appliances and other equipment required for LPG use for cooking, and distribution costs and networks, in particular.
5.3 Electricity for Cooking	Given the fairly extensive distribution of electricity in Dar es Salaam and other urban areas, the key issues to be addressed include availability and cost of cooking appliances and other equipment required for electricity use for cooking, various fees and rates charged by TANESCO to consumers, in particular. The impact of any effective reduction of both electricity feeds and prices for cooking, as well as the availability of electricity for cooking, making wood fuel supplies more sustainable, need to be quantified in order to make any recommendations on proposed policy.
5.4 Coal for Cooking	The primary issues to be examined during the BEST Tanzania Action Plan period will be to what extent coal distribution networks can be developed and the cost of coal, a charcoal and fuel wood alternative, can be reduced to make coal competitive with wood fuel energy in order to reduce pressure on Tanzania's forestry resources, making wood fuel supply more sustainable.
5.5 Natural Gas for Cooking	The primary issue to be examined during the BEST Tanzania Action Plan period will be to determine to what extent natural gas will be available, when and in what quantities to make it a wood energy alternative to reduce pressure on forestry resources to make Tanzania wood energy supplies sustainable.

Annex V: Assessments and evaluation tools

Pre-workshop assessment survey

Dear Workshop Participant:

Welcome to the National Workshop for Exploring the Evidence, Mapping the Way Forward and Planning for Future Actions for Developing Biomass Energy in Tanzania!

In order to evaluate the impact of this workshop, we would like to get an idea of your prior knowledge and involvement in Tanzania's Biomass Energy Sector, and your familiarity with our Project: **Transforming Tanzania's Charcoal Sector**. Please respond to the following 10 questions

1. Prior to receiving the invitation to attend this workshop, had you heard of the Transforming Tanzania's Charcoal Sector (TTCS) Project? **(please circle your response)**

Yes

No

2. How familiar are you with the Biomass Energy Sector in Tanzania? **(place an X on your response)**

- Unfamiliar – this is the first BioEnergy event that I am attending
- Somewhat familiar
- Very familiar

3. How familiar are you with the National Biomass Energy Strategy (BEST)?

- Unfamiliar
- Somewhat familiar
- Very familiar

4. If you are somewhat familiar or very familiar with BEST, can you mention at least three recommendations that the Strategy makes?

Recommendation 1:

Recommendation 2:

Recommendation 3:

5. According to **your** understanding of the charcoal situation in Tanzania, how would you rank the importance of the following factors in contributing to a biomass energy 'problem': **[rank from 1 to 5, 1 being the most important and 5 the least important]**

- Kiln efficiencies are much too low
- Sustainable management of forests specifically for charcoal production is rare
- Policy support for the charcoal sector is weak or nonexistent
- Charcoal consumption is inefficient
- Interventions are heavily biased towards reducing charcoal demand and not increasing supply

6. Using your best judgment and experience in the Sector, what is the percentage of urban households in Tanzania today that use a traditional cookstove versus an improved cookstove (ICS)? **[place an X on your response]**

- < 10%
- 10 to 30%
- 31 to 50%
- 51 to 80%
- > 80%

7. How do you envision the Tanzania **urban** household portfolio in the 2030 (in 15 years)?

- The same as today (71% using charcoal, 20 using firewood, < 10 using LPG, electricity or kerosene)
- Flipped completely (<10% using charcoal, >70% using LPG, electricity or kerosene)
- Somewhere in between (describe the scenario)

8. What three **positive** things can you say about charcoal?

Positive thing 1:

Positive thing 2:

Positive thing 3:

9. Do **you** use charcoal in your home?

Yes

No

Thank you! Enjoy the meeting

GOVERNMENT/Commitment

Swiss government to increasing rural incomes, climate resilience'

By Gerald Khabu

Agriculture in Switzerland is not just a source of food, but also a key element of the country's rural landscape and heritage. The Swiss government has announced a new strategy to support farmers and increase rural incomes, while also addressing climate change and environmental challenges.

The strategy, titled 'Swiss Rural Development Strategy 2020-2030', outlines a multi-faceted approach to support the agricultural sector. It focuses on three main pillars: increasing rural incomes, enhancing climate resilience, and promoting sustainable development.

Under the first pillar, the government aims to increase rural incomes by supporting farmers through various measures. This includes providing financial assistance, such as direct payments and subsidies, to help them cover production costs and maintain their livelihoods. The strategy also emphasizes the importance of diversification, encouraging farmers to explore new markets and value-added products to increase their revenue.

The second pillar focuses on enhancing climate resilience. Agriculture is highly vulnerable to climate change, with rising temperatures, changing precipitation patterns, and increased risk of drought and extreme weather events. The government plans to support farmers in adopting climate-smart practices, such as improved water management, soil conservation, and the use of drought-tolerant crop varieties. It also aims to promote the use of renewable energy sources on farms, such as solar and wind power, to reduce their carbon footprint and increase their energy security.

The third pillar, promoting sustainable development, recognizes the role of agriculture in maintaining the rural landscape and heritage. The government will support farmers in preserving traditional farming practices and maintaining the biodiversity of their farms. It also aims to promote the development of rural tourism and other non-farm income sources, which can help diversify the rural economy and create new employment opportunities.

The strategy is a long-term commitment from the Swiss government to support the agricultural sector and ensure the sustainability of its rural areas. It reflects the government's recognition of the importance of agriculture in Switzerland's economy and society, and its commitment to addressing the challenges facing the sector in the 21st century.



Minister for Regional Development and Rural Economy, Jean-Luc Rodot, (right) visits a farm in the Canton of Valais, during a visit to the region.

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YOUTH OF THE WEEK Expert: See charcoal not a setback but as socio-economic opportunity

Tanzania is endowed with talented brothers and sisters who are currently working at research international level in various academic and research international institutions. Our Correspondent GERALD KITABE talked to DR TUYENI MWAMPAMBA, a researcher at the Centre for Ecosystems Research, Mexico, who recently facilitated at the international stakeholders' workshop on biomass energy in Dar es Salaam, Tanzania.

Here she shares her experience on understanding the charcoal sector, from production to policy; the ecological aspects of production as well as the social, political and economic significance of the sector.

EXCERPTS:
Question: Madam, could you briefly explain your background and what you are currently doing in Mexico?

Answer: I grew up in Mwanza at Sokome University of Agriculture Dar es Salaam. I moved to Secondary School Certificate and graduated in 1987. After my A level education I worked in the hunting industry for a while as an environmental consultant before joining the university to get a scholarship to study USA (Mount Holyoke College) where I got a degree in Environmental Studies (graduated in 2006). I returned to Tanzania in 2007 and worked in the environmental consultancy world for 4 years before going back to school.

In 2009 I graduated from the Graduate Group of Ecology programme at the University of California Davis, USA with a PhD in Ecology. I moved to Mexico in October 2009 to undertake postdoctoral research with Dr Margaret Skutch at the Centre for Research in Environmental Geography, which is a research centre of the National Autonomous University of Mexico, the Federal University of Mexico.

After the postdoc, I got a job as a tenure-track researcher at the Centre for Ecosystems Research, where I have been working since April 2012. My main research interest was to understand the charcoal sector from production to policy; the ecological aspects of production as well as the social, political and economic significance of the sector. I became interested in charcoal in 2002 when I was an environmental scientist.

I was involved in a team hired by the Tanzania Oil Association to undertake a study to estimate the amount of charcoal consumed in Tanzanian urban households, and the impact on forests it was having. I have continued to work in the charcoal sector since then.

I currently have one project in which I am looking at how social factors such as land tenure and experience affect the kiln efficiencies of charcoal producers, an important factor that dictates how much forest is needed to meet current and future charcoal demand.

Charcoal activities are often intermingled with livestock keeping, even here in Tanzania. So, at my field sites, I look at how livestock affect the spend at which a forest recovers after it has been chopped for charcoal production, and to estimate the ecosystem service value of charcoal producing forests for different users (producers, land owners, livestock keepers and other users of the forest resources).

I also work with the National Commission of Forests (FBD & TFS equivalent) to explore how more charcoal producers can

meet the formal brain and access government forestry programmes to improve their production systems and working conditions.

Q: From your global experience what do you have to say about charcoal production in Tanzania?
A: I will only answer to charcoal because that is what I know best. Charcoal production in Tanzania is very similar to charcoal in many other parts of sub-Saharan Africa and somewhat similar to Latin America.

For the past 30 years, the importance of charcoal to other households in Tanzania has been growing rapidly, despite the availability of other energy alternatives such as LPG, biomass, ethanol gas, and charcoal briquettes.

Today we produce more than 1.5 million tonnes of charcoal annually. This is highly unsustainable. At this rate, our forests will be depleted in the next 15 years. But charcoal is cheaper, and unlike other fuels, its availability is much more consistent and reliable.

Indeed, the only time there is a charcoal 'shortage' in our cities is because a ban has been imposed by the government. Interestingly, a country such as Mexico - which is a petroleum producing country, continues to produce large quantities of charcoal for local consumption - despite subsidised electricity and LPG.

The issue with charcoal in Tanzania (and in other countries in sub-Saharan Africa and elsewhere) is that it is being viewed primarily as an environmental problem rather than an economic and energy opportunity. Interventions in the charcoal sector have been led mostly by the MNRT - which is concerned with protecting national forests, but it also has a strong mandate to supply Tanzanians with all the wood that we need.

The MNRT approach - when it comes to charcoal - has been heavily focused on reducing charcoal demand (with improved cookstove programmes) rather than ramping up supply. In this sense, they have been intervening in what I think is primarily a Ministry of Minerals and Energy area: improving consumption efficiencies of stoves and making sure that Tanzanians use energy wisely.

I say this because it had been very difficult to convincingly show that if you reduce the amount of charcoal or firewood that a stove uses, you reduce deforestation or degradation of forests. It is a logical assumption, but it is only an assumption.

If the stove really saves a household half its charcoal use, a housewife may decide to have two stoves so that, as a household, she can be more efficient (e.g. cook two things at the same time). The price of charcoal has to be much higher for stove programmes to achieve their forest-related goals.

The Mexican government



Researcher at the Centre for Ecosystems Research, Mexico, Dr TUYENI MWAMPAMBA

found this not the best way when they analysed the data of their 23 year-old improved stove programme - (for firewood, not charcoal) only to find that they could not show that it had any positive effect on forests. They subsequently cancelled the programme, and instead put their efforts in improving forest management by communities so that they can produce timber, charcoal, and other forest products sustainably, consistently and of high quality.

I really think stakeholders in the charcoal and broader biomass energy sector in Tanzania should follow a similar approach.

Q: What can be done to help Tanzania utilise charcoal wood energy in a manner that would improve people's economy, generate income and the general life at large?
A: Personally, I am not convinced that Tanzanians are worried in their usage of charcoal. I think that many already use majiko boxes, even if they are not the best stoves on the market in terms of efficiency.

I don't think we should be concerned about consumption. Our population growth rates alone clearly show that consumption will continue to grow. The absence of viable energy alternatives for cooking suggests the same.

Instead - we should think of ways to meet that demand. This will require a mixed portfolio of approaches: managing natural forests so that they can provide the trees that we need to produce charcoal, natural regeneration where that is possible, planting new forests with indigenous and exotic trees to address not only charcoal demand, but demand for other forest resources.

The approaches have to be context specific - we need to avoid a 'one-size-fits-all' approach. How you do it in Dodoma, will be very different from how it is handled in Morogoro.

It will also require encouraging the production of charcoal alternatives, such as charcoal briquettes from forest and agricultural residues. The MNRT, and the FBD and TFS should lead that process in the forestry sector.

Q: What lessons have you learnt from this international stakeholders' workshop to explore the evidence, map the way forward and plan for the future actions of developing biomass energy in Tanzania?
A: I have learned that there are many noble and exemplary interventions in the country already underway that demonstrate that it is possible to produce wood and/or charcoal sustainably by communities and farmers. These initiatives are hindered from attaining their objectives by an unresponsive policy environment and a

very complex set of regulations and procedures for setting up a charcoal production system in forests (mainly expensive land use planning procedures, and getting that charcoal to the customer (numerous levies along the way)).

I have also learned that our policies are not necessarily unresponsive - rather - they are misinterpreted by the implementers. Our national forestry policy - for example - is actually very pro-production of wood to meet our energy and other needs (timber, poles, etc).

Implementers have taken that to mean that we need to curb charcoal use and demand.

Interestingly, I have not heard of any plans to curb our demand for poles and timber. Even the National Energy Policy is not completely unresponsive - although it is a bit unrealistic. It is focused on providing alternatives to charcoal - but these alternatives are expensive at the moment for households to adopt.

I have learned that there is a wide set of stakeholders in the charcoal sector, but that they need to be more organised and more coordinated. And they need a more clearly articulated strategy that is multi-pronged so that they can make precise demands to the government that are relatively easy to act upon. I think they can do a lot under the current policy environment, even though it is not ideal.

Q: What is your advice or call to the government, private sector, stakeholders and the general public as far as biomass are concerned?
A: My advice would be that Ministry of Energy and Minerals (MEM), Ministry of Natural Resources and Tourism (MNRT) split responsibilities for the charcoal sector such that MNRT becomes in charge only for supply of sustainable charcoal while MEM takes over everything relate to sustainable consumption and alternatives.

In my view, MNRT should focus on - making sure that every kg of charcoal that makes it to the customer is produced under a management plan that can stand up to the standards of sustainability. MEM and TRS should be involved in the demand side, making sure stoves meet a minimum efficiency standard, that consumers know how to identify a good stove, and that stove builders are trained on producing consistently high efficiency stoves.

I also think that stakeholders should unite and push for simplified levies and for more support at local government level to develop forest management plans and enable communities and farmers to manage forests sustainably for timber, charcoal and other forest resources.

The private sector is

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Serikali yatathmini kurasimisha matumizi ya kuni na mkaa



Waziri wa Nishati na Madini, George Simbachawene akihutubia wajumbe mbalimbali waliohudhuria warsha iliyokuwa ikijadili masuala ya sekta ndogo ya tungamotaka ikiwemo kuweka miongozo na mipango ya kuendeleza sekta husika iliyofanyika jijini Dar es Salaam.

Na Teresia Mhagama

Serikali inaangalia namna ya kuweza kurasimisha matumizi ya tungamotaka kama kuni na mkaa, ili kuweka taratibu mbalimbali zitakazotoa mwongozo katika uendeshaji wa sekta hiyo ndogo.

Hayo yalisemwa na Waziri wa Nishati na Madini, George Simbachawene jijini Dar es Salaam wakati akifungua warsha iliyolenga kujadili masuala ya sekta ndogo ya tungamotaka ikiwemo kuweka miongozo na mipango endelevu ya sekta husika.

Alisema serikali inaona kuwa kuna umuhimu wa kuweka taratibu za matumizi endelevu ya nishati hiyo ya kuni na mkaa ambapo taratibu hizo zitatoa miongozo mbalimbali kwa wananchi ikiwemo suala la upandaji miti, kuzuia baadhi ya miti isikatwe, na kutenga misitu maalum itakayotumika kwa ajili ya kutengeneza nishati husika.

Waziri Simbachawene ameeleza kuwa matumizi ya mkaa na kuni ni makubwa nchini hivyo badala ya kuwazua wananchi kujishughulisha na biashara ya nishati hizo, serikali imeona umuhimu wa kuwa na taratibu ambazo zitafanya nishati hiyo itumike kwa ufansi kwani wananchi wengi wa mijini na vijijini bado wanategemea nishati husika kwa matumizi mbalimbali.

Alisema kuwa utafiti unaonesha kuwa matumizi ya kuni na mkaa ni makubwa hasa mijini, pamoja na kwamba mijini kuna fursa nyingi za nishati kama umeme na gesi na kwamba jiji la Dar es Salaam linaongoza kwa matumizi ya kuni na mkaa "hivyo wadau wetu kama TATEDO,

TFCG, MJUMITA wanaendelea na tafiti ili waweze kuandaa muundo utakaosaidia serikali katika kuweka muongozo wa kurasimisha matumizi endelevu ya nishati husika," alisema Simbachawene.

Alisema kwa kuwa nishati ya kuni na mkaa inatumika kwa kiasi kikubwa, suala la kupiga marufuku matumizi ya nishati husika wakati hakuna miundombinu mbadala inayojitoshesha ya kuweza kuwafanya wananchi kutoka kwenye matumizi ya nishati ya kuni na mkaa na kuwapeleka kwenye nishati nyingine, serikali inaangalia uwezekano wa kuirasimisha nishati hiyo.

"Kuirasimisha sekta hii ndogo kuna maana ya kuweka miongozo mbalimbali kama vile wananchi wetu kuweza kutenga maeneo kwa ajili ya kupanda miti na kutenga misitu maalum ambayo itatumika kwa awamu, kuweka marufuku katika aina ya miti ambayo haitakiwi kukatwa, pia kusisitiza usafi na ufansi katika matumizi ya mkaa na kuni," alisema Simbachawene.

Akieleza kuhusu tafiti za matumizi ya kuni na mkaa nchini, Profesa Romanus Ishengoma kutoka Chuo Kikuu cha Kilimo Sokoine (SUA) alieleza kuwa katika mwaka 2012 zaidi ya tani milioni 1.7 za mkaa zilitumika ambapo

nusu ya tani hizo zilitumika jijini Dar es Salaam pekee.

Kuhusu matumizi ya kuni alieleza kuwa zaidi ya asilimia 70 ya kuni nchini zinatumika vijijini na kwamba takwimu zinaonesha kuwa katika mwaka 2009, mchango wa mkaa katika uchumi wa nchi ulikadiriwa kuwa Dola za Marekani milioni 650.

Profesa Ishengoma alieleza kuwa kuna haja kwa serikali kuitambua sekta hiyo ndogo na kuitweka katika sera na mikakati ya nchi na vilevile kuifanya nishati ya kuni na mkaa kuwa ya kisasa na yenye ufansi.



Balozzi wa Uswisi nchini Tanzania Olivier Chave, akizungumza katika warsha iliyokuwa ikijadili masuala ya sekta ndogo ya tungamotaka ikiwemo kuweka miongozo na mipango ya kuendeleza sekta husika iliyofanyika jijini Dar es Salaam.



Waziri wa Nishati na Madini, George Simbachawene (wa tano kutoka kulia) akiwa katika picha ya pamoja na washiriki mbalimbali waliohudhuria warsha iliyokuwa ikijadili masuala ya sekta ndogo ya tungamotaka ikiwemo kuweka miongozo na mipango ya kuendeleza sekta husika iliyofanyika jijini Dar es Salaam. Kulia kwa Waziri ni Balozzi wa Uswisi nchini Tanzania Olivier Chave na kushoto kwa Waziri ni Mwenyekiti wa Kamati ya Kudumu ya Bunge ya Ardhi, Maliasili na Mazingira, James Lembeli.