CTCN Technical Assistance

Response Plan

Country:	Tanzania
Request Identification Number:	2015000075

Title:	Scaling-up sustainable wood fuel (charcoal and firewood) cooking systems in the Pwani, Lindi and Mtwara regions.

Summary of the CTCN Technical Assistance

Households, enterprises and institutions in the regions of Pwani, Lindi and Mtwara in Tanzania all use charcoal and fuel wood for cooking, leading to a rate of biomass harvested from the forest to produce domestic energy higher than the natural regeneration. In addition, the technology that is most used for cooking in households and institutions is the three stones stove, which is low in energy efficiency and dirty in terms of green house gases emission. The use of inefficient and effluent producing biomass cooking stoves has been affecting the health of many Tanzanians living in rural areas, and has been contributing to reduce forest cover in the coastal zones of Tanzania specifically the regions of Pwani, Lindi and Mtwara. However, charcoal production is considered an important potential source of economic activity for these communities, and considering the demand in urban areas such as the city of Dar es Salaam the rate of deforestation in unlikely to decrease.

This assistance therefore aims to provide solutions to reduce unsustainable use of biomass that contributes to climate change impacts in Tanzania. Specifically, the CTCN technical assistance requested by Tanzania seeks to understand the potential for scaling-up biomass energy, and more specifically climate friendly and environmentally sound wood fuel (charcoal and firewood) technology and policy frameworks that include sustainable production, efficient marketing and efficient utilization throughout the country. The assistance will greatly contribute to improve rural communities' health status and livelihoods.

CTCN support will focus on:

- Gathering information to understand the woodfuel situation in the 3 regions (including urban areas in these regions as points of high demand);
- Capacity building/trainings for climate friendly wood fuel cooking systems;
- A participatory context analysis and planning possibly using using the SHARED approach (StakeHolder Approach to Risk-informed and Evidence-based Decision-making) that will enhance integrated planning and prioritization by key stakeholders of climate friendly technology options and opportunities for innovation;
- Based on the results from the above, the identification and catalyzing of financing opportunities for a scaled-up project to take to potential donors (domestic, international, public, private, bilateral, multilateral…).

1. Overview of the CTCN technical assistance

The response plan involves working towards sustainable wood fuel in Tanzania. Sustainable wood fuel that encompasses charcoal and firewood needs to consider rural-urban linkages as most production of charcoal takes place in rural areas while consumption is prevalent in urban centers. Firewood consumption has been high in rural areas but the trend is changing and more firewood is being used in urban areas too for instance in households, food kiosks and institutions. For this response plan a cooking system approach is adopted because silo approaches to developing sustainable wood fuel value chains have not been successful in the past. A cooking system approach takes the entire system into consideration from seed and seedling production -for instance to encourage intercropping trees with crops and pasture and/or livestock - all the way to the end user of

the wood fuel and hence includes tree planting, woodland management and kiln technology, traders and middlemen, marketing and consumption at household, institutions, commercial and industrial scale heat, power and combined heat and power (CPH) plants

1.1 Technology aspects

This CTCN assistance, requested by Tanzania, will focus on providing key stakeholders including those involved in wood and stove production, marketing and utilization and policy making with awareness and practical knowledge on implementing sustainable wood fuel cooking systems. This will lead to the acquisition of skills to develop, implement, communicate at all stages of the value chain, with active stakeholder engagement, as well as identifying funding opportunities to scale up the approach in other regions of the country. A participatory context analysis, negotiation and planning approach, such as SHARED (StakeHolder Approach to Risk-informed and Evidence based Decision-making), is necessary to support the stakeholders in prioritizing technology needs and actions to implement climate friendly and environmentally sound wood fuel cooking systems in the three target regions. This will assist the stakeholders in developing a concrete action plan for sustainable production and efficient utilization through sustainable wood fuel rural-urban linkages that will be the basis for the development of a proposal for a larger scale, externally funded project.

1.2 Objectives (outcomes)

Overall outcome: Public, private, community and national stakeholders advancing sustainable wood fuel cooking system technologies, marketing strategies and enabling policy frameworks in Tanzania.

Outcome 1: Stakeholders including wood and stove producers, users, market key players and policy makers develop an action plan indicating priority action and interventions based on the results and increased understanding and awareness

Outcome 2: Stakeholders comprising of producers, users and policy makers include elements of the sustainable wood fuel cooking system's approach into their decision-making (specific elements will be decided via a participatory process – potentially the SHARED approach)

Outcome 3: Decision makers such as public, private, community, national identify and help catalyze opportunities to mobilize resources for scaling up the technologies

1.3 Results (outputs expected from CTCN assistance)

Output 1: Increased technology understanding of wood fuel cooking systems and lessons for replication by reviewing and synthesizing the existing literature (secondary data, projects, initiatives)

Output 2: Action plan developed based on the results of the stakeholder-driven participatory context analysis and planning approach for the 3 regions.

Output 3: Improved capacity and awareness of local communities and national stakeholders for sustainable wood fuel cooking

Output 4: Opportunities to secure financing for scaling up wood fuel cooking systems including rural-urban linkages for sustainable production and efficient utilizations identified and articulated

1.4 Expected use of outputs

Output	How it will contribute/support/enable Tanzania to advance in implementing sustainable wood fuel cooking systems
1	Stakeholders understand the state of the art of the sustainable wood fuel cooking systems as of now, including rural-urban linkages in production and use
2	Stakeholders come up with a concrete action plan including technology, capacity building and communication needs to scale up the sustainable wood fuel cooking systems in the country that pays attention to production and use in both rural and urban areas
3	Stakeholders have the technical skills to replicate and scale-up the technologies in other regions
4	Based on the first 2 outcomes, the stakeholders will be able to draft a strong proposal and take it to potential funding agents in order to scale up wood fuel cooking systems in Tanzania that pays attention to sustainable production and efficient utilizations in both rural and urban areas

2. Description of the assistance

The response plan aims at generating knowledge from existing information on woodfuel cooking systems in the 3 targeted regions including urbans areas as points of demand and identifying best practices from other places with potential for scaling up in the area and in the country. The plan also includes stakeholder involvement in characterizing local situations on woodfuel cooking systems including rural-urban flows and use, assessing problems and causal relationships affecting sustainability, efficient utilization and development outcome setting for 2030. The context analysis will also include generating knowledge on perception on woodfuel implications on livelihoods including health, food and nutrition and impacts on climate change (who is impacted and how). The participatory process will identify and prioritize feasible interventions for urban and rural areas and develop an implementation plan to improve the situation by achieving the targeted development outcomes. The integrated approach to understanding the local context, development outcome setting and designing implementation strategy will also result in awareness raising towards sustainable woodfuel cooking systems. Using the knowledge generated from the first two activities including on-going work on the ground, a course on sustainable wood fuel cooking systems will be designed and delivered. Experiences from the activities will then be synthesised by the project team and packaged into a proposal to scale up sustainable wood fuel cooking systems incorporating production and efficient utilizations in both rural and urban areas in Tanzania that will be discussed with stakeholders and funding agents.

2.1 Activities

Activity 1. Synthesis of secondary data on the situation of woodfuel cooking systems in the three target regions including urban areas as points of demand

This will be a review of available existing information on wood fuel cooking systems including wood production and management, practices in wood conversion to charcoal, marketing, utilization, implications, livelihoods and the environment in both rural and urban areas as well as existing policy frameworks. This activity will pull out replicable lessons for sustainable woodfuel cooking systems in

technology, socio-cultural and economic aspects and policy. The synthesis will also include best practices from other areas with potential for replication.

At this early stage, the experts will identify key actors and decision makers that can take ownership, and help address the main barriers, repeatedly encountered in previous years in Tanzania in this field. The list will include key institutions and contact persons that will be involved along the process

Activity 1 – Deliverables

Deliverables	**Delivery date**
1.1 Detailed workplan with specific dates and monitoring milestones (consistent with closure report indicated in activity 5) and 1 page description of the intended outcomes and impacts (template to be provided by CTCN)	1st month
1.2 List of key actors and decision-makers that will be engaged in the process	
1.3 A synthesis of existing literature on woodfuel cooking systems and lessons for replication	2nd month

Activity 2. Conduct participatory context analysis and planning for sustainable woodfuel cooking systems

SHARED (StakeHolder Approach to Risk-informed and Evidence based Decision-making) is recommended for this activity as an integrated stakeholder-driven, participatory negotiation and decision-making approach because it has been tested successfully in a number of projects similar in scope and scale to the activities proposed here. While probably not as well elaborated and integrated, there are other tools and approaches that bring together stakeholders to analyze local contexts and develop plans, which could be used in the absence of SHARED.

The activity aims at setting goals for 2030 through an interactive engagement process for collaborative learning and co-generation of decisions to achieve mutually agreed development outcomes. The work will identify incentives and possible business models (and enabling environments) that can be put in place for various stakeholders in the sustainable woodfuel value chain.

The information generation and decision making process allows stakeholders to interact with evidence to answer questions such as:
How do we want the wood fuel cooking systems to be in 2030?
What is working well or not, why, for whom?
What improvements are required?
What resources are required?
Who needs to be involved and how?
What are the wood fuel flow patterns?
What are the land tenure systems and how do they affect wood fuel production?
What are the impacts of wood fuel production and use on livelihoods, health and the environment in both rural and urban areas?
Who is impacted and how?
How can communication be effectively carried out for the development outcome to be achieved?

This activity will contribute to community planning for the action and interventions that stakeholders think would work best for their locality. The participatory context analysis and planning (SHARED) meetings and workshops will be focused for each region including target market areas. Understanding the factors influencing adoption of improved stoves will be addressed under this activity by looking at

the cooking energy needs from fuel and stove perspectives to find out how improved stoves are serving the communities.

The SHARED process, a methodology developed by ICRAF and partners, will be adapted to fit into the local context for planning and decision making among stakeholders in wood fuel cooking systems. The process will provide a deep understanding and ownership for stakeholder action in sustainable wood fuel cooking systems through:

a) Gathering and analyzing information to understand the woodfuel cooking systems context and problems and causal relationships facing sustainability
b) Community drawings, wood fuel flow patterns and natural resource maps depicting the past and present as well as scenarios of the outcomes in 2030 with and without business-as-usal (BAU) interventions. These resources will help raise awareness among stakeholders on the impacts of unsustainable wood fuel value chains and the need for and opportunities to making it sustainable.
c) Interactive prioritization of feasible interventions/options including technological action, capacity building and training design and policy to make woodfuel cooking systems sustainable. A criterion will be developed for prioritization.
d) Interactive prioritization of communication strategies for effective adoption of sustainable wood fuel cooking systems.
e) Identifying contents of the training, target groups and methods delivery.

Activity 2 – Deliverables

Deliverables	**Delivery date**
2.1 Synthesis of local context including rural-urban linkages and implications in woodfuel cooking systems	6th month
2.2 Area natural resource maps by communities indicating past, present and future with or without intervention outcomes in 2030 including rural-urban flows	6th month
2.3 A report on priority feasible interventions and implementation strategy for sustainable wood fuel cooking systems in both rural and urban areas	6th month
2.4 A report on priority communication processes and implementation strategy for sustainable wood fuel cooking systems	6th month
2.5 Design of the sustainable wood fuel cooking system training	6th Month

Activity 3. Developing capacity and awareness for sustainable wood fuel cooking systems

Development of capacity building products (a manual and 1 training course broken down as follows: 1 training of trainers (ToT) course, 3 training sessions one in each site led by those trained in the ToT) that will be based on the information generated in activities 1 and 2. Charcoal is often produced from unlicensed wood sources and harvested from unsustainably managed forests as well as public lands in villages and otherwise unmanaged landscapes. To contribute to the sustainability of charcoal production, this activity will provide training on sustainable wood fuel cooking systems, targeting local communities, charcoal and cook stove producers, traders and government policy makers both in urban and rural areas. The training will build on previous initiatives and tap into the knowledge and skills of trainers on the ground. Modules of the training will include: concept of wood fuel cooking systems; wood production and management for sustainable wood fuel such as through sustainable forest management for wood fuel supply; use of appropriate agroforestry practices such as woodlots; intercropping trees with crop/livestock/pasture, coppice management; efficient kilns; efficient cook stoves; fuel briquettes entrepreneurship; implication of wood fuel on livelihoods and the environment; and integrated resource management and decision making. Other issues such as the

development of land use and forest management plans for villages will be addressed in consultation with stakeholders and building on past and on-going initiatives. Design and delivery of the trainings will be developed during the SHARED process including identification of artisans to offer practical lessons. During the training, plans will be laid out for supporting pilot projects with affordable tools for start-up on adoption of efficient technologies such as production of improved cook stoves and production of fuel briquettes.

Activity 3 – Deliverables

Deliverables	Delivery date
3.1 Training course manual on sustainable wood fuel cooking systems	7th month
3.2 Training of trainers on sustainable wood fuel cooking systems for stakeholders in urban and rural areas of the three regions	8th month
3.3 One training course on sustainable woodfuel cooking system held by those trained in the trainers course per site comprising of stakeholder in the woodfuel cooking system	9th month

Activity 4. Develop a proposal on scaling up sustainable wood fuel cooking systems in Tanzania

The first three activities are the base for the elaboration of a proposal to scale up sustainable wood fuel cooking systems in Tanzania. COSTECH, TAREA and other relevant stakeholders will be deeply involved in the process, building their capacities in elaborating and "selling" the sustainable woodfuel cooking system idea to potential funding agents. This effort will propose approaches including those to enable the financial sustainability of the project (e.g. requesting elaborating on livelihoods/business incentives for various stakeholders in the value chain, and defining a financing scenario for up-scaling). It will also identify the livelihoods and financial benefits, which helps build ownership and commitment of key stakeholders in the value chain.

The proposal will be presented to potential funding agents during meetings. Those agents can include regional development banks, bilateral donors, public or private sector, GEF, GCF, adaptation funds, etc.

This document will be used in fundraising to build on the piloted woodfuel cooking system approach in the three sites as well as its replication in other parts in the country.

This activity will be organized around 3 sub-activities:
4.1: elaboration of the strategy of the proposal and list of potential donors
4.2: Preparation of the proposal in collaboration with the NDE team and other stakeholders
4.3: Organization and facilitation of round tables with donors and bilateral meetings to present the proposal. This will implicate a certain amount of travelling.

Activity 4 – Deliverables

Deliverables	Delivery date
4.1 Strategy for promoting the proposal + list of potential donors	10th month
4.2 Preparation of a proposal for sustainable wood fuel cooking system proposal integrating rural and urban areas	11th month
4.3 Updated proposal after meetings with donors	12th month

Activity 5. Evaluation and learning

This activity will help ensure evaluation and closure of the assistance outputs and outcomes, as well as drafting the closure report and data summary .

Activity 5 – Deliverables

Deliverables	Delivery date
5.1 Drafting and finalization of the closure report and data summary for the assistance (template to be provided by CTCN).	12th month

2.2 Synergies and Baseline Setting

This technical assistance will build on and learn from several on-going and past initiatives in the biomass energy sector and related fields. Phase two of the National Forest and Beekeeping Program to be launched soon has a component on sustainable charcoal as an activity under the Value Chains of Wood and Non-Wood Forest Products. This program is funded by the Finnish Embassy and will operate in 10 districts, including Liwale districts in Lindi. Currently the Tanzania Forest Conservation Group (TFCG) is developing a model for sustainable charcoal in Kilosa, Morogoro region with support from the Swiss Development Agency. Communities are taught to manage forest resources sustainably, of which charcoal is one of the products that generate income and provide an incentive for this approach. This approach will fit well with activities related to the sustainable production of charcoal as listed by the proponents. The Biomass Energy Strategy of 2014 and the Tanzania Energy Policy of 2015 both indicate that biomass energy production is unsustainable and often leads to negative environmental impacts. The documents also provide guidelines on the sustainable approach to meeting the demand and supply of biomass energy in the country. Kiwia & Lausten Company, a private enterprise working on biomass fuels production technologies in Tanzania, conducts research and development and trains national artisans in these technologies to develop the Improved Cook stove (ICS) value chain. These initiatives listed will be critical to informing operations of the proposed CTCN response plan.

A team comprising of representatives from ICRAF, COSTECH (NDE) and TAREA conducted a feasibility and fact-finding mission between 11 and 14 April in Pwani, Lindi and Mtwara. The team held discussions with government representatives at the District level, charcoal and cook stove producers including those who participated in a previous training and management of the Vocational Education Training Authority (VETA). The findings of the mission show that charcoal and firewood demand is rising and the regions are main suppliers of charcoal to Dar es Salaam. Hence the proposed work needs to include the stakeholders and perspectives of woodfuel in urban areas. Charcoal from the coastal region, especially Lindi, is known to be of high quality possibly because the forest resources are relatively abundant due to low population pressure. However there is no premium price for this high quality charcoal in Dar-es-Salaam and the production processes are also unsustainable. Unsustainable production and use of wood fuel is one of the main drivers of deforestation. There are best practices at the village level in some areas such as Lindi on forest and tree conservation that can be scaled up e.g. in the proposal to be developed under this project. Lessons were also learnt on bad approaches such as making payments to local communities for tree planting and management where communities stopped their involvement after the projects ended. Previously trained cook stove producers had challenges in acquiring appropriate affordable tools which hindered production while others required skills on marketing. VETA Lindi branch is well positioned to provide teaching assistance on ICS manufacturing and train local artisans in the relevant technical and business skills

2.3 Timeline

Activity	Month
1 – Synthesis of secondary data on the situation of charcoal and firewood cooking systems in the three target regions including urban areas as points of demand	
2 – Conduct stakeholder approach to risk-informed and evidence-based decision making (SHARED) for sustainable wood fuel cooking systems	
3 – Capacity building and awareness raising on sustainable wood fuel cooking system	
4 – Develop a proposal on theory of change for sustainable wood fuel cooking systems	
5- Evaluation and learning	

2.4 Expertise required

Activity 1	**Synthesis secondary data on situation of charcoal and firewood and their cooking systems including interventions and their impacts**
Expert 1	A local expert on woodland and forest management.
Expert 2	A local expert on wood fuel cleaner cooking solutions.
Expert 3	An assistant with knowledge on wood fuel cooking systems and implication on households, health and environment.
Expert 4	Local scientist with good knowledge on the Country's wood fuel cooking systems and agroforestry to lead secondary data collection from stakeholders and government bodies working in the area.
Event 1	*Estimation of resources needed, number of participants, etc.*
Materials	
Others	Transport and communication
Activity 2	**Conduct stakeholder approach to risk-informed and evidence-based decision making (SHARED) for sustainable woodfuel cooking systems**
Expert 1	Lead expert on woodfuel cooking systems with expertise on participatory context analysis and outcome setting to design and support implementation of the process, data synthesis and writing up.
Expert 2	A local person with good knowledge on the local context on wood fuel cooking systems to facilitate planning and participants identification and mobilization.
Expert 3	Lead expert on SHARED process.
Expert 4	An assistant to help with gathering and synthesizing information during SHARED workshops
Event 1	*3-4 days SHARED workshop in each regions (3)* *25 participants/workshop: Perdiems , accommodation, catering, room rental*
Materials	Printing services, writing materials for field data collection
Others	Transport and communication
Activity 3	**Capacity building and awareness raising on sustainable wood fuel cooking system**
Expert 1	Lead expert on wood fuel cooking systems including cook stoves, fuel briquettes with capacity building and effective communication skills for change.

Expert 2	Communication expert
Expert 3	Local expert with knowledge on woodland management, agroforestry and forest management for sustainable wood fuel
Expert 4	3 effective technicians identified during the participatory context analysis and planning process (SHARED) to offer practical skills such as on stove and kiln production, entrepreneurship one course to the community and other stakeholders in each site
Activity 4	**Develop a proposal for scaling up sustainable wood fuel cooking systems**
Expert 1	Lead expert on wood fuel cooking systems with knowledge and skills in developing proposals for sustainable wood fuel cooking systems including addressing climate change and fundraising
Expert 2	Lead expert with knowledge on wood fuel cooking systems to contribute to development of the proposal.
Expert 3	Local expert with knowledge and skills on woodland and forest management and agroforestry systems to contribute to the development of the proposal
Materials	
Others	Transports and Communication
Overall	Project coordinator with knowledge on wood fuel cooking systems and implication on livelihoods and environment including climate change

2.5 Main partners

Stakeholder	**Role to support the implementation of the CTCN assistance**
Tanzania Commission for Science and Technology (COSTECH)	Innovation, access to technology and coordination of implementation, monitoring and evaluation of impact, up scaling, NDE
Tanzania Renewable Energy Association (TAREA)	Field implementation, monitoring and information dissemination, lead counterpart
Ministry of Natural Resource and Tourism	Provision of the policy and guidelines on the forestry
Ministry of Energy and Minerals	Provision of policy and guidelines on the biomass
Department of Environment Vice President Office	Provision of the policy and guidelines on standards for environmental air pollution + Participation in the SHARED workshops
Local Government Authorities	Awareness raising and facilitation of local adaptation
Forest Conservation Group (TFCG) and MJUMITA	Capacity building on sustainable charcoal model and charcoal value chain.
Kiwia & Lausten	Research and Development, Training and manufacturing of efficient Cooking stoves, efficient charcoal making kilns and other sustainable biomass and renewable energy technologies.
VETA (Lindi) and Small Industries Development Organization	Facility for training of stove producers and efficient kiln constructions
WWF	Participation in the SHARED workshops
SNV	Participation in the SHARED workshops
CARMATEC	Participation in the SHARED workshops
Academia (University of Dar es Salaam, Folks Development Colleges…)	Participation in the SHARED workshops

2.6 Indicative budget

Activities	Estimated Budget (USD)
Activity 1: Synthesis of secondary data	18,000
Activity 2: Conduct SHARED approach	80,000
Activity 3: Capacity building and awareness raising	49,000
Activity 4: Develop proposal for scaling up	58,000
Activity 5: Communication, evaluation and learning	15,000
Total	**220,000**

Implementation of this Response Plan will be coordinated by the Climate Technology Centre (including selection, contracting, supervision and monitoring of implementation partners) in close coordination with the corresponding National Designated Entity and relevant national actors. Implementation will be led by an International Consortium or Network Partner of CTCN.

2.7 Gender considerations

Gender will be integrated in the project through:

- Disaggregating data by gender and intra-household dynamics to show roles, benefits, challenges and opportunities e.g. in the Synthesis of existing literature in activity 1 and local context analysis through the participatory context analysis and planning process (SHARED) in activity 2.
- Use of gender responsive interactive tools and approaches during the participatory context analysis and planning process (SHARED) to allow gender inclusiveness, transparency and active and effective participation of men, women and youth.
- The trainings in activity 3 will include different gender categories based on their involvement along the value chain and use of tools that are easy to communicate irrespective of literacy level of target groups.
- Experiences and lessons on gender issues from activities 1-3 will be incorporated in the proposal to be developed in activity 4. Proposal writing will also involve participation of different gender categories.

In summary, integration of gender in the four activities as stated above will allow active contribution of the different gender categories in synthesising understanding of local contexts, setting development outcomes and designing an implementation strategy for interventions towards a sustainable wood fuel cooking systems. The capacity training courses on sustainable wood fuel cooking systems will ensure active participation of men, women and youth while considering their roles in the systems and opportunities to improve the situation. Visual aids and practical demonstrations will be used in the trainings for ease of understanding of the knowledge irrespective of literacy level. The proposal on sustainable wood fuel cooking systems will incorporate gender consideration and with gender sensitive indicators to monitor inclusive impact.

2.8 Risk identification and risk mitigation

Risk	Consequence	Probability	Mitigation measure
Production costs of sustainable charcoal technologies can be high	Reduced profit margin by adaptors	Medium to high	Advocate for a premium price in the local market

Premium price for sustainably produced charcoal is not readily available in local markets	Less incentive to adopt the suitable practices for wood production and charcoal making	Medium to high	Strong awareness and advocacy campaigns to decision makers and large customers of charcoal in Dar-es-Salaam
Local stoves producers failing to use the knowledge received	ICS not available for use	Low	Train on business skills and sources of capital for starting business
Conflict on benefits sharing from sustainable forest management in a community	Sabotage by community members being disadvantaged	low	Increased awareness and training on benefits sharing mechanisms for community resources
Low interest in project activities by donor and government officials	Unsuccessful funding applications and limited government support	Low	Engage government official right from the beginning. Develop a strong case on relevance and environmental benefits of the response plan to national and international communities.
Few individuals or NGOs monopolizing project activities for personal interests	Limited ownership of the project by local community and sustainability of project activities	Low	Ensure participatory selection of action sites and stakeholders to be involved in training or other capacity building activities
Low interest in stove technologies by target groups / low long term uptake of technologies	Reduced or low uptake	medium	Enduring technologies fit with local needs and constraints
Interest from those outside the region having undue influence on internally made decisions	Unstained practices continuing despite local plans to the contrary	Low	Include all key actors during the SHARED meeting

3. Long-term impacts of the assistance

3.1 Expected climate change-related benefits

	CTCN climate technology impact	Anticipated contribution from CTCN assistance

1	Climate technologies adapted to national context are identified and prioritized to enable their deployment and/or transfer in the requesting countries	This CTCN assistance will identify and prioritize technologies for a sustainable wood fuel cooking system. The concept note/proposal developed will enable deployment of this approach in other regions of Tanzania
2	New national Technology Needs Assessment (TNA) and Technology Action Plan (TAP) as a result of the response	The TNA is on-going so this assistance will produce more of a focused/ detailed action plan with regards to biomass that will complement the TAP.
3	Progress made against mitigation objectives (i.e. energy and carbon intensity reduction) as a result of the response	Development of sustainable charcoal and wood fuel value chains + usage of improved cookstove will reduce the emissions of Carbon that would have happened otherwise in a business as usual scenario
4	Progress made against adaptation or resilience objectives (e.g. climate vulnerability index improvement) as a result of the response	Diversification and increased income reduces producers' vulnerability to climate-related shocks.
5	New mitigation or adaptation technology projects/initiatives implemented as a result of the response	The assistance will promote the use of efficient cookstoves and climate smart technics to produce charcoal sustainably.
6	New or strengthened policies/ laws developed, approved and enacted as a result of the response	
7	New policies/laws where climate change was mainstreamed as a result of the response	
8	Country integrating climate change mitigation and/or adaptation issues into its planning and policies as a result of the response	
9	New or strengthened Public-Private Partnerships (PPP) created directly as a result of the response	
10	New or strengthened twinning arrangement created as a result of the response	The activity 4 of the assistance will help Tanzania bring external funding to scale up the initiative started with the technical assistance (Activity 2 and 3). Meetings with potential donors will be organized
11	Capacities to access and attract public and private finance increase to enable financing of technology deployment	The NDE and her team will deeply be involved in the activity 4 in the search for funding opportunities to scale up the deployment of clean technologies around cooking systems
12	Climate technologies adapted to national context are identified and prioritized to enable their deployment and/or transfer in the requesting countries	This CTCN assistance will identification and prioritize technologies for a sustainable wood fuel cooking system. The concept note/proposal developed will enable deployment of this approach in other regions of Tanzania

3.2 Co-benefits

	Sustainable Development Goal	Contribution from CTCN assistance
1	End poverty in all its forms everywhere	The assistance will gather information on current wood and cookstove production and management, charcoal production, marketing, domestic and commercial use, local regulations and interventions. The prioritized technologies will take into account those aspects and contribute to improving the livelihood of the stakeholders (households, charcoal producers, cookstove producers…) by strengthening the whole value chain
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Access to affordable cooking fuels enhances food and nutrition security by allowing families to cook and consume more nutritious food.
3	Ensure healthy lives and promote well-being for all at all ages	Trainers course will involve efficient cook stoves and their benefits in reducing illnesses associated to indoor air pollution. Adoption of agroforestry for wood fuel reduces women and girls health risks from firewood collection.
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	Capacity building course will first be conducted among trainers. These trainers will then conduct the course among the local community for sustainability and spread of skills and knowledge
5	Achieve gender equality and empower all women and girls	Women and men including youth will be involved in the activities of the project and their participation will be ensured through gender sensitive approaches and tools. Roles, benefits, challenges and opportunities for each will be characterised to ensure gender responsive decision making and impact.
6	Ensure availability and sustainable management of water and sanitation for all	Conserving trees and forest through sustainable wood fuel cooking systems will conserve watershed
7	Ensure access to affordable, reliable, sustainable, and modern energy for all	The main goal of this technical assistance is to promote a sustainable wood fuel cooking approach system (from production to consumption). This will ensure energy is more affordable, available, reliable safe and sustainable
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Making wood fuel sustainable involve production of wood by farmers which can be a source of income. Charcoal producers and cook stove producers and traders will also sharpen their production and marketing skills.
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Innovative ways of producing wood on farm for wood fuel, producing charcoal well using efficient kilns and efficient cook stoves will be instilled among stakeholders which can contribute to sustainability of the enterprises
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	There will be involvement of wood producers, charcoal and firewood producers, cook stove producers and users which will contribute to interaction between rural and urban ecosystem.
12	Ensure sustainable consumption and production patterns	The project target sustainable production, marketing of wood fuel and cook stoves and their utilization

13	Take urgent action to combat climate change and its impacts	Making charcoal in a climate friendly way and promoting improved cook stoves are at the heart of this assistance. It will considerably reduce on the deforestation rate which is one of the main cause of climate change
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	The landscape being targeting for sustainable utilization is along the coast hence indirectly contributing management of the ocean water body.
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Land degradation and poor forest management/deforestation is already been noticed in the 3 regions of Pwani, Lindi and Mtwara. This assistance, by promoting a sustainable cooking approach will allow sustainable forest management and restauration of the landscape
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	The participatory context analysis and planning process (SHARED) will ensure inclusivity in understating the context, setting development outcome and designing the implementation strategy of intervention for sustainable wood fuel cooking systems.
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	The participatory context analysis and planning process (SHARED) will ensure inclusivity in understating the context, setting development outcome and designing the implementation strategy of intervention for sustainable wood fuel cooking systems.

3.3. Post-assistance plans and actions

After the CTCN technical assistance completion, the applicant and the national stakeholders will use the results for scaling the interventions in the other regions of the country that have similar needs as those which will be identified during the planning of the future perspectives.
The applicant and stakeholders will continue following up the sustainability of the results in the project area through monitoring workshops and track of the performances of the stove entrepreneurs. The applicants will also conduct the follow up study to understand the use of the stoves and opinion of end users. The study will be used to improve marketing if it will be necessary.
The NDE organization (COSTECH) promotes and operates under the participatory context analysis and planning process (SHARED) at national level and thus will scale the concept and interventions to other sectors. The NDE will work with partner organizations to scale the capacity building approaches interventions in other climate change initiatives as deemed relevant.
The proposal developed will be used as a strategic document to mobilise resources for implementation of activities.

3.4 Monitoring and Reporting of technical assistance results and impacts

Please describe how the monitoring and reporting for the project will be constituted (i.e. M&E plan, data collection methodology, responsibilities, reporting, etc.). Please complete the table below with the requested information. Note that this tables aims to elaborate how the assistance provided by the CTCN and its expected outcome(s) will be taken ownership of by the stakeholders in the country, so as to create the anticipated impact(s). The table will serve alongside the Response Logframe in Annex 1

as a basis to measure the success of CTCN assistance after it has been completed (e.g. investment in technologies, number of technologies deployed, number of technology projects undertaken, number of policies enacted, etc.). Note that each response activity will be set out in the logframe alongside one or more respective performance indicators and source(s) of information, Means of Verification and responsible party for its collection. Note that the performance indicators should be able to measure whether and to what extent the activity has the achieved its result and they should be framed so as to provide a basis for the relevance, effectiveness, efficiency, impact and sustainability of the response to be assessed and evaluated effectively (i.e. the DAC criteria).

Performance indicators of CTCN Assistance				
Response output *(linking to sec 1.2)*	**How output will be used to ensure creation of result**	**Expected result**	**Expected outcome of result** *(linking to sec 1.1)*	**Anticipated impact that outcome will produce** *(linking to section 3)*
Output 1: A synthesis of existing literature (secondary data, projects, initiatives) on **wood fuel** cooking systems and lessons for replication (report)	Results will be presented to the stakeholders in an interactive way that will allow them to own them. A report will also be provided	Knowing and understanding of the status of wood fuel and the need for adopting a sustainable wood fuel cooking systems approach in the 3 target regions	Stakeholders attitude and behavious changing towards turning wood fuel into a sustainable cooking system	Stakeholders producing, selling and utilization wood fuel in a sustainable manner while linking the different sectors
Output 2: Workshops held in the 3 target regions	The workshops approach will allow stakeholders engagement. The participating stakeholders will identify and prioritize interventions hence owning the process and will be able to build a real custom-made action plan	Stakeholders come up with a concrete action plan including technology, capacity building and communication needs for scaling up sustainable woodfuel cooking systems in the country	Stakeholders including communities, stove producers decision makers, prioritize interventions and supporting activities for sustainable wood fuel cooking systems. Stakeholder collaborating and working together towards sustainable wood fuel coming systems	The stakeholders aware of the impacts of each segment of the wood fuel cooking system and working toward their linkages. Sustainable wood fuel cooking system approach being applied in policy development and budget planning and community development projects
Output 3: Capacity building and awareness raising on sustainable **wood fuel** cooking system	The training materials and delivery methods will use knowledge and skills of the implementers as well as hiring of consultants where necessary as well as lessons and experiences from previous work in the e regions and elsewhere.	Training materials and methods of delivery on sustainable wood fuel cooking systems produced that suit target groups	Stakeholders knowledgeable and skills enhanced on sustainable wood fuel cooking systems. E.g. management of wood for wood fuel production being carried out sustainably, policy makers delivering the	Stakeholders producing, selling and utilization wood fuel in a sustainable manner while linking the different sectors along the supply chain

			knowledge to communities and using it in policy development, cook stove producers and kiln makers producing efficient facilities,	
Output 4: Proposal on theory of change for sustainable **wood fuel** cooking systems	The stakeholders will be engaged throughout the whole process, from the identification of potential donors to the writing of the proposal and to the promotion of the project at donors round tables	Based on the first 2 outcomes, the stakeholders will be able to draft a strong proposal and take it to potential donors in order to scale up sustainable biomass cooking systems in Tanzania	Decision makers are able to push the case for scaling up sustainable cooking systems in Tanzania and get additional funding for a bigger project	Stakeholders engaged will be able to reproduce the process of the elaboration of a proposal with other projects and hopefully get additional funding to scale up climate initiatives

4. Signatures

Signatures of the requesting country

NDE

Name: Dr. HASSAN MSHINDA
Title: DIRECTOR GENERAL
Date: 17/03/2017
Signature:

TANZANIA COMMISSION FOR SCIENCE AND TECHNOLOGY
P.O. Box 4302
DAR-ES-SALAAM

Request Proponent

Name: Geoffrey R. John
Title: Chairperson
Date: 15-03-2017
Signature:

Tanzania Renewable Energy Association
P.O. Box 32643
Dar-es-Salaam, TANZANIA
Tel: +255 (0) 22 2451674
Email:info@tarea-tz.org

Signatures of the CTCN

CTCN Director

Name: Jukka Uosukainen
Title: Director
Date: 02/03/2017
Signature:

Climate Technology Manager

Name:
Title: MANAGER
Date: 02/03/2017
Signature:

Annex 1: Response Logframe

Activity *(link to sec 2)*	**Description of sub-activities conducted by the CTCN**	**Output/ Deliverable** *(link to sec 2.9)*	**Expected Outcome** *(link to sec 3)*	**Main national partners involved**	**Objectively Verifiable Indicator** *(see Annex 5 guidance)*	**Means of Verification** (data source, method of collection, responsibility and periodicity)
Activity 1: Synthesis of secondary data on the situation of wood fuel cooking systems in the three target regions		A synthesis of existing literature on wood fuel cooking systems and lessons for replication	Decision makers, communities, stove producers understand the state of the art concerning the wood fuel value chain in Tanzania and are able to use the information to build a strong action plan	WWF, Local Government Authority, SNV, MJUMITA	Information shared with the participants is understood and used in the action plan to be designed in activity 2	**Data**: Review of reports, publications **Method of collection**: Consulting with stakeholders who have been involved in work on wood fuel in the region and elsewhere to get best cases for replication. **Responsibility**: Implementer + COSTECH **Periodicity**: once
Activity 2: Conduct stakeholder approach to risk-informed and evidence-based decision making (SHARED) for sustainable wood fuel cooking systems	*Activity 2.1:* Gathering and analyzing information to understand the wood fuel cooking systems context and problems and causal relationships facing sustainability	Synthesis of local context in wood fuel cooking systems	All stakeholders are on the same page concerning the local context in wood fuel cooking systems	Local Government Authority, NGOs, Academia, VETA, Community leaders, Ministry of Energy, Ministry of Natural Resource, Department of Environment Vice President Office	Workshops held, surveys conducted and number of people involved	**Data**: …Maps, reports, action plans per region **Method of collection**: Workshops facilitated using participatory tools, a questionnaire to collect primary data, GIS, participatory mapping **Responsibility**: implementer and other partners **Periodicity**: one workshop per site, primary data from stakeholders

	Activity 2.2: Communities drawing of natural resource maps depicting past, present, and scenarios of the outcomes in 2030 with and without (BAU) interventions	Area natural resource maps by communities indicating past, present and future with or without intervention outcomes in 2030	Stakeholder aware of the implication of their actions on the status of wood fuel and inspired to take make the sector sustainable	Local Government Authority, Community leaders	Maps drawn,,	Same as above
	Activity 2.3: Interactive prioritization of feasible interventions/options including technological action, capacity building and training design and policy to make wood fuel cooking systems sustainable	Priority feasible interventions and implementation strategy for sustainable wood fuel cooking systems	Stakeholders aware of the priority interventions to make wood fuel cooking system sustainable and develop a work plan to implement them	Local Government Authority, Ministry of Natural Resource, Ministry of Energy, Community leaders	Prioritized interventions, action plan developed	Same as above
	Activity 2.4: Interactive prioritization of effective communication strategies for effective adoption of sustainable wood fuel cooking systems	Priority communication processes and implementation strategy for sustainable wood fuel cooking systems	Stakeholders aware of the priority communication strategies to make wood fuel cooking system sustainable and develop a work plan to implement them	Local Government Authority, Ministry of Natural Resource, Ministry of Energy, Community leaders	Prioritized communication strategy, action plan developed	Same as above

	Activity 2.5: Design of the sustainable wood fuel cooking system training	Report on the training design	Stakeholders working together to produce a training design	Private enterprises in biomass, VETA, CARMATEC, Ministry of Natural Resource	Design of the training	Same as above
Activity 3: Capacity building and awareness raising on sustainable wood fuel cooking system	*3.1: …*	A manual on a trainers course on sustainable wood fuel cooking system	Stakeholders working together to produce training materials that address the different segments of the wood fuel cooking system	Private entrepreneurs, VETA, Ministry of Natural Resources, University of Dar es Salaam, Folks Development Colleges, Forestry Conservation Group	Training manual	**Data**: …Materials from stakeholders working on wood fuel **Method of collection**: Identifying trainers to development the materials **Responsibility**:…implementer and other partners **Periodicity**:One training manuals developed
	3.2:	A trainers course on sustainable wood fuel cooking system held among stakeholders in the wood fuel cooking system	Knowledge and skills enhanced among stakeholders	VETA, Biomass stoves and fuel producers, Local Government Authority, Folks Development Colleges, Forestry Conservation Group	Training conducted and number of people trained	**Data**: …Training manual **Method of collection**: Identified trainers to deliver course **Responsibility**:…implementer and other partners **Periodicity**: one trainers course per site.
	3.3	Trainings on sustainable wood fuel cooking system held by those trained in the trainers course per site comprising of	Specialised knowledge and skills enhanced among targeted stakeholders	VETA, Biomass stoves and fuel producers, Local Government Authority, Folks Development Colleges	Training conducted and number of people trained	**Data**: …Training manual **Method of collection**: Identified trainers to deliver course **Responsibility**:…implementer and other partners

		stakeholder in the wood fuel cooking system				**Periodicity**: Number of training depending on identified targeted groups.
Activity 4: Develop a proposal on theory of change for sustainable wood fuel cooking systems	*4.1:* Elaboration of the strategy of the proposal and list of potential donors	Strategy for promoting the proposal + list of potential donors	Stakeholders working together to fundraise for sustainable wood fuel cooking system	Development partners, Rural Energy Agency (REA), Ministry of Natural Resource	Stakeholder meetings to write the proposal	**Data**: Reports on proposal writing process **Method of collection**: Meetings **Responsibility**: implementer and other partners **Periodicity**: Number of meetings and consultations in the writing process.
	4.2: Preparation of the proposal in collaboration with the NDE team other stakeholders	Theory of change for sustainable wood fuel cooking system proposal	Stakeholders working together to fundraise for sustainable wood fuel cooking system	WWF, SNV	Same as above	Same as above
	4.3: Organization and facilitation of round tables with donors and bilateral meetings to present the proposal	Synthesis of outcomes from meetings with donors	Donor interested in supporting sustainable wood fuel cooking systems		Meetings with donors	**Data**: Reports on meetings with donors **Method of collection**: Meetings **Responsibility**: implementer and other partners **Periodicity**: Number of meetings and consultations in the writing process.

Annex 2: Indicative list of performance indicators

Overall Activity	Specific Activity	Indicator
Capacity Building	▪ development and delivery of workshops ▪ development and delivery of trainings (e.g. webinars, e-learning, ad-hoc) ▪ development and delivery of toolkits	Number of participants trained or training days received; Post training evaluation and feedback (and minutes); CTCN Knowledge Management System (KMS) users; Webinar content/minutes/feedback; e-learning content/feedback
Advisory	▪ development of needs assessment/ studies/ reports/ etc. ▪ establishment/development of recommendations	Diversity of sources used; Response Implementer efforts days; Recommendations; Scope of dissemination; Level of detail used; Feedback; Uptake of recommendations
Policy development	▪ development of strategy ▪ drafting of implementation plan ▪ formulation inputs to policy/ law	Strategy available and adapted to local context and national priorities; Number of interview/events conducted to developed the strategy/ plan; Strategy/Plan dissemination; Number of technologies recommended in the strategy/plan; Scope of changes recommended by the strategy/plan.
Project implementation	Mitigation ▪ Energy supply ▪ Energy use ▪ Industry ▪ Transport ▪ Agriculture ▪ Waste management ▪ Forestry Adaptation ▪ Water ▪ Infrastructure, transport and urban design ▪ Early warning and environmental assessment ▪ Coastal zones ▪ Agriculture and forestry ▪ Human health ▪ Marine and fisheries	Outputs available and adapted to local context and national priorities; Level of private sector participation; Planning/Outputs distributed to decision makers with feedbacks; Integration of outputs/outcomes into planning of host country; implementation of outputs/outcomes by host country or other multi/bi-lateral organisation; Level of cooperation between Response Implementer, NDE and Response Proponent(s).
Development of a new	▪ Development/ Establishment of basis for Twinning ▪ Development/ Establishment of basis for PPP	

Overall Activity	Specific Activity	Indicator
partnership or strengthening of an existing one	▪ Development/ Establishment of basis for knowledge partnership	