CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Instructions to lead Implementers for drafting the Technical Assistance Closure and Data Collection Report

Objective of the technical assistance (TA) Closure Report and Data Collection Report:

- To communicate publicly in one synthesis document a summary of progress made and lessons learned under the technical assistance (TA) towards the anticipated impact (main template).
- Compile TA-specific information required for internal use in donor and UN reporting (annex 1).

Steps for completing the TA Closure report:

1. The lead TA implementer drafts the report at the end of the assignment as a final deliverable /product. The TA Closure report will capture all activities conducted under the TA hence it is expected that duplication of information will occur from earlier documents. Please copy and summarise relevant material from previous TA outputs/deliverables and the Response Plan, as relevant.
2. A CTCN Manager will review and revise the report before final approval by the CTCN Director.

Important note on public and internal use of the closure report:
Once approved by the CTCN Director, the TA Closure and Data Collection Report will be a public document available on the CTCN website. Annex 1 is for internal use only and will not be publicly available.

Closure and Data Collection Report for CTCN Technical Assistance

1. Basic information

Title of response plan	Recycling of Organic Waste for Energy and Smallholder Livelihood in The Gambia
Country / countries	**The Gambia**
NDE focal point and organisation	**Gambia Technical Training Institute (GTTI)** *Mr.LaminJatta* *Head of Department* *P.O.Box 989* *Banjul – The Gambia* *laminj@ymail.com; laminj781@gmail.com*
Proponent focal point and organisation	**Women initiative The Gambia (WIG)** *Ms.IsatouCeesay* *Executive Director* *Njau Village* *Upper Saloum District – The Gambia* *Isatouceesay2002@gmail.com*
Sector(s) addressed	Waste Agriculture Energy
Technologies supported	Instruction: Please indicate the type of technologies supported by this assistance, referring to the taxonomy of climate sectors and technologies available (download

	in pdf format and choose from column C) : https://www.ctc-n.org/about-ctcn/open-data Biomass briquettes or pellets Charcoal production for cooking and heating
Implementation period and total duration	**1 year, from 15 February 2018 to 31 March 2019**
Total budget for implementation	Instruction: In addition to financial value of the technical assistance, please also include if any pro bono or in-kind support has been provided by both the implementer and/or the national counterparts. $ 140 749 total budget
Designer of the response plan	**The World Agroforestry Centre (ICRAF)**
Implementer of response plan	**ECO Consult**

2. Summary of all activities, outputs and products that contribute to the expected impact of the technical assistance.

Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original response plan and refer to it as appropriate	The objective of the technical assistance was to develop a sustainable waste management value and supply chain for energy and livelihoods that can be scaled up to national levels. The overall outcomes of the technical assistance was to improve the waste management value and supply chain for local women groups. Outputs and products as well as the activities undertaken according to the ECO-proposal are presented in respective reports. ECO Consult conducted the following activities: - An in-depth analysis of the fuelwood, charcoal & agricultural residues sectors - Establishment of a competitive briquette value chain compared to traditional fuels - Training in the production and use of the briquettes produced - Provision of the necessary training equipment The main deliverables produced are as follow: - Excel database with relevant information on waste material to generate income through the production of chickenfeed and waste charcoal briquettes covering relevant social, environmental and economic variables in The Gambia - Baseline report on waste management in The Gambia covering both environmental and socioeconomic aspects - Training manual and report of completed trainings in basic and advanced technologies - Synthesis report including the analysis of data and preparation of model for waste management value and supply chain in The Gambia. - Mapping of stakeholder engagement - Action plan for scaling up the model - Concept note for submission by national agency to GCF
Partners organisations	Instruction: Implementers and other partner organisations are defined as the people and institutions engaged in the implementation of the TA

	Eco-Consult & Women Initiative The Gambia
Beneficiaries	Instruction: Beneficiaries are defined as people and institutions benefitting from the TA 316 Women & 6 Men from 17 communities organised in women groups
Methodologies applied to produce outputs and products	Instruction: Examples of methodologies: E.g. Cost-benefit analysis; surveys and structured interviews with key stakeholders; etc. Cost-benefit analysis; Surveys and structured interviews with key stakeholders Equipment implantation Pilot scale project Trainings
Deviations	Instruction: Please describe any deviations from the response plan against the actual implemented activities, outputs and products. Initially, trainings and equipment to be provided to beneficiaries were of two scales: basic technology and advanced technology. The basic production technique (biomass burner whose combustion is stopped using water, a pestle & mortar system to reduce the carbonized biomass to powder and a cylinder & hammer system to shape the briquettes) has been taken into consideration but the preliminary studies have shown that the low productivity of this technique leads to an unsustainable value chain. The involved women groups were therefore all equipped with advanced technology equipment
Achieved or anticipated gender benefits from the TA	Instruction: Please describe expected gender benefits as described in the response plan. This technical assistance was mainly aimed at women. But men were welcome to attend the training and some participated. The team of trainers included as many women as men. The training provided support to increase the beneficiaries' income, either by saving part of the money on fuel (briquettes are cheaper than current fuels) or by having additional income (production and sale of carbonized groundnut shell powder).

Achieved or anticipated co-benefits from the TA	Instruction: Please describe expected co-benefits as described in the response plan.
	After upscaling (5000 tonnes briquettes per year), the benefit for climate mitigation and/or adaptation impact are:
	• Total tonnes of CO2 eq to be avoided or reduced per annum
	  ○ 32 500 TCO_2e will be avoid each year. Indeed, the use of briquettes instead of charcoal avoids the emission of 6,5 TCO_2e/tonne briquette. And 5 000 tonnes briquettes will be produced each year.
	• The expected total number of direct and indirect beneficiaries and number of beneficiaries relative to total population would be
	  ○ 100 women groups which will be involved in the project, in average one women group counts 20

	members, which means 2 000 women who are as much direct beneficiaries. A realistic estimate would be each woman saves 3 dls when she uses one kg briquettes instead of charcoal (it could be more, with habituation to the fuel), 5 000 tonnes briquettes means a total saving of 15 000 000 dls to be divided into 2000 women, leading to an annual saving of 7 500 dls (around 140 €) per year for each woman. ○ Indirect beneficiaries are the women families and the Gambian population, as pollution due to charcoal production will be drastically reduced • Potential for scaling-up and replication (e.g. multiples of initial impact size) ○ In the Gambia, the potential for briquettes production is a least 20 000 tonnes per year from easily available and accessible residues. Moreover, less easily accessible residues are also available and may be used for briquette production in a further stage. ○ In other countries the implementation strategy may be replicate to make briquettes project successful, which is not often the case and could be solved thanks to this proposed project. • Potential for knowledge and learning ○ more than 2,000 people will be trained in the production and use of briquettes, as well as their beneficial effect on the environment • Contribution to the creation of an enabling environment ○ By limiting the charcoal consumption and therefore its negative impact on the environment (CH_4 emissions, excessive use of forests...) the project contributes to a better environment • Contribution to the regulatory framework and policies • Economic co-benefits ○ The training will generate income directly for 2000 women ○ Carbonized powder production units will generate 100 additional jobs ○ Analysis and socio-economic evaluations are specifically addressed in project activity 7 • Social co-benefits ○ Indirectly, the organization of women into groups, the access to income-generating activities, the community based savings of part of their income are factors that contribute to better access to education ○ project specifically contributes to the improvement of the regulatory framework ○ The project contributes indirectly to improving health through improved air quality. ○ All safety equipment needed to use the installed machines is provided by the project and safety aspects are a training priority.

	• Environmental co-benefits - Improved air quality ○ Since briquettes replace charcoal and its production is highly polluting, the use of briquettes contributes to overall air quality - Improved biodiversity ○ Since briquettes replace charcoal and charcoal production puts high pressure on forests, the use of briquettes reduces pressure on forests. This leads to favourable conditions for improving biodiversity • Gender-sensitive development impact ○ The jobs created are for both women and men. In practice, given the cultural environment and the fact that briquettes are intended for domestic cooking, it is very likely that training in the use of briquettes will mainly be followed by women. On the other hand, jobs related to the production of carbonized groundnuts shell powder and brick production will not be related to gender
Anticipated follow up activities and next steps	Instruction: Please describe how the Proponent, partner organisations and beneficiaries will use outputs and products and how these will contribute to the expected impact of the TA. • This Technical Assistance promising results make it possible to consider scaling up briquette production. Technical assistance has shown that the positive environmental impact will be greatest if these briquettes are used to replace charcoal used in urban areas. A project proposal has been written to that purpose. In the meantime, • Following the trainings, 1500 kg carbonised and milled groundnuts shells were produced each week in Saro (Pyrolysis – grinding site) and were supplied to 15 other women communities (production - use) for processing into briquettes and subsequent replacement of traditional fuels. The total production of briquettes over the course of the CTCN intervention ran up to about 10 tonnes, including 6 tonnes produced in December 2018. In January 2019, production continued at the rate achieved in December rate, and an additional 5 tonnes of briquettes had been produced close to the end of January. Indeed, briquettes were found to be in high demand by users, and WIG (the intermediary between powder production site and briquettes production/use communities) receives many requests for more powder (from the women groups already involved) as well as for joining the project (from non-involved women groups). Moreover, briquette producing communities have received many requests from prospective buyers (who either express specific interest or are just curious for the time being). While these requests cannot be satisfied at this juncture for lack of production equipment, they nonetheless attest to the correctness of the chosen strategy and setup for the briquette value chain. By the end of January 2019, 12 tonnes briquettes had been produced & used.

	• The assistance can contribute to the UNIDO-funded project

3. Lessons learnt

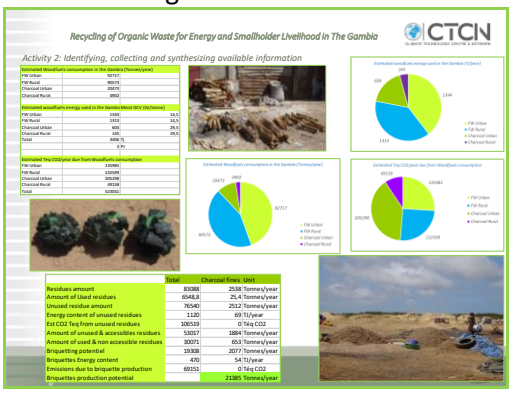
	Lessons learnt	Recommendations
Lessons learnt for this TA. Describe essential factors contributing to successful implementation, as well as specific challenges. Recommendations include considerations on what would need to be in place for increasing success of similar efforts (i.e. regulatory, legal, stakeholders, communication, etc.)	This Technical assistance and its implementation have confirmed the interest of applying "briquette projects rules": • The produced briquettes must be of very good quality and meet the expectations of the consumers. To do this, raw materials and production processes should be carefully selected to meet the needs and scale of the project. From the user's point of view, no fuel will reach the charcoal quality. Hence the price must be lower than charcoal (for the same cooking work) • To meet the charcoal consumer's needs, the produced briquettes must have comparable characteristics, it is why it must contain charred material. • In order to increase the environmental impact of briquettes , they should be used instead of urban charcoal, which is in accordance with already observed fact that briquettes are generally urban fuels • The primary objective of Substitution Biofuels projects must be to achieve a minimum critical consumption rather than to implement projects whose production is based on supply. Projects should be designed to be market driven rather than production driven. Therefore, briquettes projects must start on a small scale • The implementation strategy is specific to each project and must consider the opinions of users In this technical assistance, the in-depth analysis of the conditions under which briquette production is foreseen (available resources, cost of competing fuels, cost of production factors, etc.) made it possible to estimate the cost of the various production scenarios. The analysis of these scenario has highlighted the great disparity in the	Respect the briquettes project rules

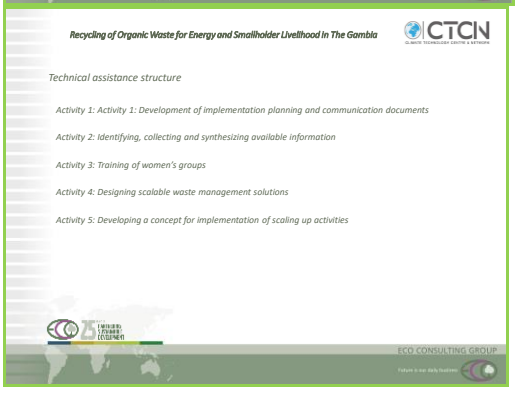
	production costs depending on the selected options. Even using the same raw material and the same production tools. If no precautions are taken, production costs can be much higher than the cost of using competing fuels, charcoal and fuelwood. However, some scenarios allow the production of briquettes at a competitive price, by separating the sites where raw material is prepared and the sites where the briquettes are produced and used. In addition, self-consumption of briquettes is encouraged. Even under these favourable conditions, the savings compared to the use of traditional fuels are not very significant. But they are enough to make briquettes competitive. The situation analysis showed a potential for unused and easily accessible agricultural and forestry residues. This potential would allow the annual production of 20 000 tonnes of briquettes. The benefit of their substitution to charcoal would reduce the use of the latter by 71% and avoid the emission of 140 000 Teq CO2, a reduction of 22,3% in the year. It has also been calculated that the present technical assistance, through which nearly 15 tons of briquettes have been produced so far, has prevented the emission of 90 Teq CO_2 and avoided the cutting of 50 tons of anhydrous wood. This is the equivalent of 2 ha of mature Eucalyptus plantations	
Lessons learnt related to climate technology transfer Describe opportunities, challenges and barriers for the use and deployment of the technology or technologies supported by the TA. The objective is to identify specific success factors for technology transfer	In terms of implementation, this technical assistance has demonstrated that: • The transport and cost of the binder are two major factors in the cost of producing briquettes • It is necessary to provide close support for users until they use the briquettes independently and with the same ease as traditional fuels. • The very positive effect of the delivery of manufacturing equipment (presses) in women's groups and the self-consumption of briquettes. They induce an appropriation of the briquettes and fewer requirement on	Scale up the project based on the strategy defined during this Technical Assistance

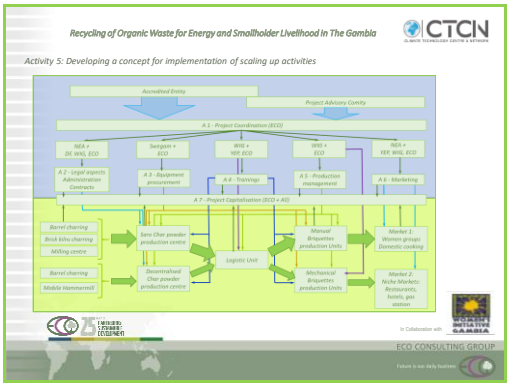
	them. • Gambian consumers are very open to the use of briquettes and very sensitive to respect for the environment • It is needed to identify the appropriate profitable production scenario to ensure scaling of the technology as well as ensuring low production cost so as to fairly price the products to be competitive as this can encourage the technology take up	
Lessons learnt related the CTCN process for TA	• The CTCN Technical Assistance is a fast, pragmatic and effective tool to implement positive actions for climate and environment. It has given us the opportunity to implement an innovative concept for fuel briquettes production, based on the field realities	

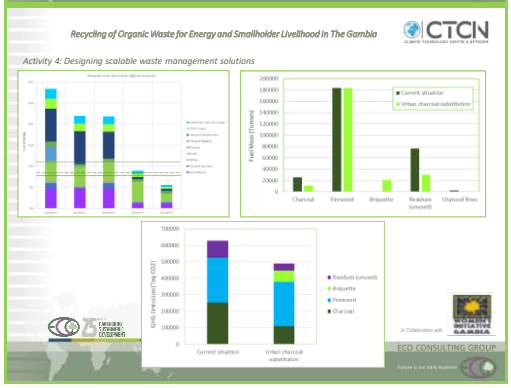
4. Illustration of the TA and photos

For communication purposes, please provide 2-4 Power Point slides with illustrations or charts showing the TA process, applied methodology, activities, outputs and achieved results. The illustrations must be copied into the TA Closure report but must also be delivered as power point files. Also, please provide at least five high-resolution pictures in jpg format, capturing technical assistance. The pictures should illustrate how the TA has impacted the lives of the beneficiaries in particular and the communities in general.









5. Information for TA impact description

The information in the table below will be used to produce the CTCN TA Impact Description. The TA Impact description is a 2-page summary document for communication purposes. Please copy information from sections above and technical delivery reports as required.

Challenge: Approx. 500 characters with spaces	The management of waste is a challenge in the Gambia, and its accumulation poses health risks for the population. At the same time, the use of charcoal and firewood for household energy consumption is huge and contributing to increased pollution and greenhouse gas emissions. The annual production of agricultural residues is important and offer huge opportunities for the valorization of this waste for energy conversion. However it is necessary to ensure development of a sustainable value chain for production of competitive fuel from agricultural waste.
CTCN Assistance: 2 to 4 bullet points. Approximately 450 characters with spaces	• An in-depth analysis of the fuelwood, charcoal & agricultural residues sectors • Establishment of a competitive briquette value chain compared to traditional fuels • Training in the production and use of the briquettes produced • Provision of the necessary training equipment

Anticipated impact: 2 to 4 bullet points to summarise anticipated impact. Approximately 250 characters with spaces. As a minimum, please include one of the following: i) Quantity of greenhouse gas emissions reduced, avoided or sequestered; or ii) Number of people with increased capacity to adapt to the impacts of climate variability and change.	• 15 groups of 15 people trained • 4 Teq CO2 avoided for each ton of briquette consumed • A sustainable briquette production line
Linkages and contribution to NDC: 2 to 4 bullet points. Approximately 350 characters with spaces	• Reduction in the agricultural sector • Reduction in the Energy sector • Reduction under Waste management
The narrative story: Approximately 1200 characters with spaces	The use of biomass energy has many advantages, it comes from familiar and affordable available resources, it creates jobs, ensures diversification and energy security and has a positive effect on the climate. Moreover, biomass energy will remain the primary source of energy in sub-Saharan Africa. In this context, the use of biomass other than wood (ground nuts shells, coconut nuts shells, corn cobs...) is often proposed to produce substitutes for charcoal, in the form of briquettes. However, these are difficult projects to implement in a sustainable way. Despite their many apparent advantages (price, length of combustion, environmental sustainability, possibility of standardization e.t.c) these fuels often fail in substituting charcoal significantly . Therefore, the objective of the technical assistance was to develop a sustainable waste management value and supply chain for energy and livelihoods that can be scaled up at national level. In this context, the following activities were conducted: - An in-depth analysis of the fuelwood, charcoal & agricultural residues sectors - Establishment of a competitive briquette value chain compared to traditional fuels - Training in the production and use of the briquettes produced - Provision of the necessary training equipment The trainings provided support to women groups to increase the beneficiaries' income, either by saving part of the money for fuel (briquettes are cheaper than

	current fuels) or by having additional income (production and sale of carbonized groundnut shell powder).
Contribution to SDGs: Always include contribution to SDG 13, and to the extent possible, please include contribution to 2 other SDGs, describing the contribution with a few sentence for each SDGs concerned. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/	5. Achieve gender equality and empower all women and girls 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 13 Take urgent actions to combat climate change and its impacts

Note: Please see example of a TA Impact Description at the following link: https://www.ctc-n.org/sites/www.ctc-n.org/files/benin_a_ag_forestry.final_.pdf

Annex 1 (for internal use in donor and UN reporting)

A. Standardised CTCN performance indicators for donor and UN internal reporting

Please add quantitative values for indicators relevant to the particular TA in the list below. Non-relevant indicators should be left blank. Please only fill in the table for activities and outputs conducted or produced directly by the CTCN assistance.

CTCN standardised performance indicators	**Quantitative value**	**Qualitative description** *List the various elements corresponding to the quantitative value*
1. Overview		
Number of active person-days (not full duration) of technical assistance provided to counterparts or stakeholders by international experts and consultants	***120***	*Eco-Consult assistance:* *TA implementation* *Reporting*
Number of active person-days (not full duration) of technical assistance provided to counterparts or stakeholders by national experts and consultants	***1005***	*Local Consultant & Trainers*
Number of for external communication and outreach activities conducted to showcase the assistance (news release, newsletters, articles on website, etc.)	***3***	*Two pages impact description delivered to CTCN* *Closure & data collection report delivered to CTCN* *Newspaper, radio and TV release*
2. Events (other than trainings) held as part of the assistance		
Number of international and multi-country (at regional or sub-regional level) technology and knowledge sharing events	**0**	
Number of participants in the events above	**0**	
Number of national technology and knowledge sharing events	**1**	*Final workshop*
Number of participants in the events above	**10**	
Number of public-private events related to technologies	**0**	
Number of participants in the events above	**0**	
3. Training and capacity building activities conducted during the assistance		
Number of training sessions and capacity strengthening activities	**17**	*2 Char powder production trainings & 15 Briquettes production trainings*
Number of people who received the training	**322**	*A participant database is available*
Number of men	**6**	
Number of women	**316**	
Total number of organisations trained	**17**	

Number of research organisations, laboratories and universities		
Number of private companies		
Number of cities and local government		
Number of communities	**17**	
Number of ministries		
Number of specialised governmental institutions		
Number of non-profit organisations	**1**	*The beneficiary association "Women Initiative The Gambia"*
Level of satisfaction of participants after the training (from training feedback form). Categories include: From very satisfied, satisfied, partly not satisfied, not satisfied at all	**100**	*Training feedback form analysis is provided in the synthesis and final reports*
Percentage of participants that increased their capacities thanks to the training (from training feedback form). Categories include: Significantly, very, moderately, to none.	**100 % significantly**	*Training feedback form analysis is provided in the synthesis and final reports*
Percentage of men	**100%**	*Training feedback form analysis is provided in the synthesis and final reports*
Percentage of women	**100%**	*Training feedback form analysis is provided in the synthesis and final reports*
4. Tools, technical reports and information material supported by the assistance		
Total number of tools, technical reports and information material supported by the assistance (excluding mission, progress and internal reports)		
Number of tools strengthened, revised or developed	**3**	*Data base available (Excel file)* *Training manual available* *Indicator list*
Number of technical reports strengthened, revised or created	**4**	*Baseline report* *Synthesis report* *Action plan* *Concept note for project upscaling submission by national agency to GCF*
Number of other information materials strengthened, revised or created	**2**	*Bill of quantities for equipment & suppliers provided and included in First progress report* *Stakeholder analysis*
5. Policies, laws and regulations supported by the assistance		
Number of policies, strategies, and plans drafted addressing climate change adaptation		

Number of policies, strategies, and plans drafted addressing climate change mitigation	**1**	*Action plan*
Number of documents developed to inform other policies, strategies, and plans on climate change adaptation (sectoral strategies, national development plans, etc.)		
Number of documents developed to inform other policies, strategies, and plans on climate change mitigation (sectoral strategies, national development plans, etc.)		
Number of laws, agreements, or regulations drafted addressing climate change adaptation		
Number of laws, agreements, or regulations drafted addressing climate change mitigation		
Number of documents developed to inform laws, agreements, or regulations on climate change adaptation		
Number of documents developed to inform laws, agreements, or regulations on climate change mitigation		
6. Institutional strengthening supported by the assistance		
Number of institutional arrangements in place to coordinate near and long-term national adaptation plans (NAPs)		
Number of organisations with increased technical capacity to advance near and long term national adaptation plans (NAPs) which integrate EbA		
Number of organisations with increase awareness and knowledge among countries to better own and drive national adaptation planning processes		
7. Partnerships and cooperation		
Number of private companies directly engaged in the assistance (that partnered with the proponent, the beneficiaries or the CTCN to implement the assistance)	**1**	*The Gambian company "Swegam" was selected to provide the necessary equipment for this TA. Its advice on the implementation and its involvement made there are now proposed as partners for the project upscaling.*

Number of South-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		
Number of North-South collaboration enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		
Number of Triangular collaborations enabled during or through the assistance, when stakeholders from other countries were involved in the assistance		

B. Indicators of anticipated impacts that may occur after the TA is completed

CTCN standardised performance indicators	**Quantitative value** Insert the request value and unit	**Content** List the elements included in the number provided	**Expected timeline** Indicate when the indicator and value are expected to be achieved	**Responsible institution** Indicate the institution(s) that will play leading role in enabling the indicators and anticipated values to be achieved
16. Anticipated finance mobilised				
a) Anticipated amount of public/donor investment mobilised (in USD) from the beneficiary country for climate change activities as a result of the TA				
b) Anticipated amount of public/donor investment mobilized (in USD) from international and regional sources for climate change activities as a result of the TA	2,1 million $	Concept note	2023	To be identified
c) Anticipated amount of private investment mobilised (in USD) from the beneficiary country for climate change activities as a result of the TA				
d) Anticipated amount of private investment mobilised (in USD) from international and regional sources for climate change activities as a result of the TA				
17. Policies				
a) Anticipated number of policies,				

strategies, plans, addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA				
Anticipated number of policies, strategies, plans, addressing climate change adaptation officially proposed, adopted, or implemented as a result of the TA.				
b) Anticipated number of laws, agreements, or regulations addressing climate change mitigation officially proposed, adopted, or implemented as a result of the TA.				
Anticipated number of laws, agreements, or regulations addressing climate change adaptation officially proposed, adopted, or implemented as a result of the TA.				
c) Anticipated laws, policies, regulations, strategies and plans where climate change mitigation will be mainstreamed as a result of the TA				
Anticipated laws, policies, regulations, strategies and plans where climate change adaptation will be mainstreamed as a result of the TA				
18. Anticipated number of public-private partnerships created				
19. Anticipated twinning arrangements created as a result of the TA				
20. Anticipated number of technology projects prepared and implemented to support action on low emission and climate-resilient development	1			
21. Anticipated number of strengthened National Systems of Innovation and technology innovation centres in recipient country				
22. Anticipated Clean Energy Generation Capacity Clean supported by the TA that has achieved financial closure				
23. Anticipated and projected GHG	32 500 TCO_2e			

reductions. Quantity of greenhouse gas (GHG) emissions, measured in metric tons of $CO_{2\text{-}e}$, anticipated to be reduced or sequestered as a result of projects supported by the TA				
24. Anticipated clean energy generation capacity supported by the TA that has achieved financial closure				
25. Anticipated and projected greenhouse gas emissions reduced or avoided through 2030, in metric tons of $CO_{2\text{-}e}$, from adopted laws, policies, regulations, or technologies related to clean energy/sustainable landscapes as a result of the TA	350 000 TCO_2e			
26. Anticipated number of people improving their livelihood as co-benefits as a result of the TA	2000			
27. Anticipated technology types effectively deployed in the country	Briquette production chain			
28. Anticipated UNFCCC processes implemented as a result of the TA (NAMA, NAPA, NDC, etc.)				
29. Anticipated Technology Needs Assessments (TNA) and technology Action Plans (TAP) as a result of the TA				
30. Anticipated cooperative research, development and demonstration programmes within and between developed and developing country Parties facilitated as a result of the TA				
31. Anticipated improved climate change observation systems and related information management in developing country Parties.				