

Country	The Gambia
Request ID#	2016000041
Title	<i>Recycling of Organic Waste for Energy and Smallholder Livelihood</i>
NDE	<i>Mr. Lamin Jatta</i> <i>Head of Department</i> <i>Gambia Technical Training Institute (GTI)</i> <i>P.O. Box 989</i> <i>Banjul – The Gambia</i> <i>laminj@ymail.com; laminj781@gmail.com</i>
Proponent	<i>Ms. Isatou Ceesay</i> <i>Executive Director</i> <i>Women's Initiative The Gambia (WIG)</i> <i>Njau Village</i> <i>Upper Saloum District – The Gambia</i> <i>Isatoucesay2002@gmail.com</i>

Summary of the CTCN technical assistance

The Gambia is among the poorest countries in the world and agriculture is a dominant sector. Policies supporting the development from a strongly subsistence-based agriculture to a modern market-based sector are central to achieving the vision. However, climate change is expected to worsen the situation of food security for some of the country's major crops.

In order to improve agricultural production, energy supply and livelihood conditions, there are significant opportunities in utilizing organic waste materials for production of chicken feed and waste charcoal briquettes. The main, overall outcomes of this technical assistance will be to raise capacity in generating income through waste management of the women's groups and to improve the waste management value and supply chain at scale.

The technical assistance will have short-term benefits at a relatively small scale and longer-term benefits at local government area and potentially national scale. Direct beneficiaries of the technical assistance will be ca. 225 women organized in women's groups that will be trained in waste management, charcoal briquette making, fishmeal production, entrepreneurship and business management. These trainings will have direct impact on the livelihoods of the women and their families as well as induce a multiplier effect because the women pass their knowledge on to others and, via the sale of charcoal briquettes and poultry products, increase the demand for scaling up these approaches.

By developing a bankable proposal for scalable value and supply chains that is 'owned' by national actors, this project will lead to widespread replication of the development model throughout the country and thereby have an impact on the livelihoods of thousands of people as well as a measurable reduction of the demand for charcoal from wood, which will lower the emission of greenhouse gases. In consequence, the project will lead to lasting benefits for livelihoods and climate resilience as well as mitigation benefits.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

**National Designated Entity to the UNFCCC
Technology Mechanism**

Name: Lamin Jatta

Title: Head of Department

Date: 12th July, 2017

Signature:



Proponent (signature of the Proponent is optional)

Name:

Title:

Date:

Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Jukka Uosukainen

Title: CTCN Director

Date: 5 Oct 2017

Signature: 

1. Background and context

The Gambia is among the poorest countries in the world with a per capita GDP of USD 473 per capita in 2016 (World Bank) and nearly 40% of the population living on less than USD1 per day (GBS, 2010). Agriculture and services are the largest sectors of Gambia. Agriculture provides 25% of GDP and employs roughly 70% of the work force, whereas the service sector contributes to GDP with 60%. Food security and environmental sustainability are key pillars of Gambia's Vision 2020. Policies supporting the development from a strongly subsistence-based agriculture to a modern market-based sector are central to achieving the vision. However, climate change is expected to worsen the situation of food security for some of the country's major crops.

A vast majority of Gambians rely on firewood or charcoal for cooking. Charcoal consumption is growing due to population growth, urbanization and a dearth of alternatives despite the commodity being officially banned. While a part of the demand is being met through illegal trade from Senegal, charcoal production is also contributing to the degradation of Gambia's forests, although generally as the result of agricultural expansion to meet the growing population's needs for food and other natural resource based products.

There are significant opportunities to meet some of the energy and livelihood requirements of the population by utilizing waste materials that are generally either not collected or dumped on a small number of designated yet entirely uncontrolled sites which pose significant health and groundwater contamination risks. Next to scavenging for potentially valuable resources, burning is the only way of controlling the accumulation of inorganic materials and uncontrolled decay of organic waste.

For the past eight years the Women's Initiative The Gambia (WIG) has been working with women groups to transform byproducts of fishery, coconut and groundnut production into valuable resources. By training the community-based organizations in charcoal production, preparation of fishmeal for chickenfeed and composting as well as business management, entrepreneurship and environmental awareness and protection, WIG is offering a highly valued and sought after solution to both improving livelihoods, managing waste and reducing the need for wood fuels.

However, given the overwhelming lack of information on the availability and amount of waste materials, the demand for energy, the extent of forest degradation from fuel wood production and the need for capacity development among others, it is very difficult to assess the scalability of the activities for generating income or the potential impact introducing more efficient technologies would have in reducing the pressure on forests.

In order to address its climate related challenges, The Gambia has actively engaged with the Convention on Climate Change and its support mechanisms. In particular, The Gambia is receiving support from the Green Climate Fund for the project *Large-scale Ecosystem-based Adaptation in the Gambia River Basin: developing a climate resilient, natural resource based economy* and the Global Environment Facility on the project *Greening the Productive Sectors in Gambia: Promoting the Use and Integration of Small to Medium Scale Renewable Energy Systems in the Productive Uses*. This technical assistance will be aligned and complementary to the mentioned projects as well as all other projects initiated under the Convention on Climate Change.

2. Problem statement

While the potential for creating important win-win situations for the livelihoods and empowerment of rural women is clear, there are major questions arising from the low level of technology currently being disseminated and the lack of available baseline information. The major question seems to be how the women groups can benefit from the activities in the long term, what the scope for scaling up the capacity development is and how to set up and manage the material flows needed to actually make a measurable impact on economic and environmental indicators. It is hence necessary to look at both the local scale to assess possible value and supply chains and the national scale to see if the planned interventions can have a long-lasting and transformative impact on livelihoods, sustainable development, drivers of environmental degradation and climate change adaptation and mitigation. If the appropriate ways for large-scale investments are to be identified, evidence is needed that scaling up the technologies can be achieved effectively and efficiently and is also financially viable long term. The technical assistance (TA) therefore requires a significant amount of learning to be successful.

To establish the potential for transformational change via women's groups generating income from charcoal briquettes and fishmeal requires increasing the current capacity through investment in appropriate technology and training in technical, business and entrepreneurial skills. As it is unclear how different technologies compare in terms of increased resilience via income generation (adaptation), substitution of woodfuels (mitigation) as well as scalability and potential impact, it is suggested to test both low-tech approaches and more advanced technologies. The more advanced technologies would still be largely manual but would multiply output by a factor of 2 to 10. The assumption is that the low-tech approach will be easier to implement and can have benefits even where the availability of sufficient waste flows is not given. On the other hand, it is expected that the higher-tech solution might be needed if measurable impact at national scale is to be achieved.

The main challenge of this technical assistance lies in finding the appropriate scales at which to target technology transfer interventions to avoid investing in technologies that are not sufficiently scalable and hence have little transformative character while not excluding women's groups from the supply chain through industrial scale technologies.

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

Experts required	Brief description of required profile
<i>Please use the same titles for all experts as applied in section 4.</i>	<i>Please provide a short description of expertise and experience needed (education, sectors of expertise, years of experience, country experience, language requirements, etc.).</i>
Team leader (TL)	Senior level international staff ; education and experience: minimum 8yr post PhD; expertise in sustainable land management, climate change adaptation and mitigation, development, high-level negotiations; project management; country experience: Anglophone Africa; language skills: excellent command of oral and written English
International expert (IE)	Mid-level international staff ; education and experience: minimum 3yr post PhD; expertise in waste management, charcoal value and supply chains, briquetting, sustainable land management; gender studies; training of rural women; country experience: Anglophone Africa; language skills: excellent command of oral and written English
Women’s Group The Gambia (WIG)	Subcontract for WIG;
National expert in charcoal value and supply chains (NE1)	Mid-level national consultant ; education and experience: minimum 3yr post MSc; expertise in natural resource management, charcoal value and supply chains, climate change, rural development; country experience: minimum Gambia; language skills: Excellent command of oral and written English; good command of Wolof and/or Mandinka
National expert in waste management (NE2)	Mid-level national consultant ; education and experience: minimum 3yr post MSc; expertise in waste management, recycling and waste technologies; country experience: minimum Gambia; language skills: Excellent command of oral and written English; good command of Wolof and/or Mandinka
National expert in natural resource management (NE3)	Mid-level national consultant ; education and experience: minimum 3yr post MSc; expertise in natural resource management, development economics, rural development and extension; country experience: minimum Gambia; language skills: Excellent command of oral and written English; good command of Wolof and/or Mandinka
Project administrator (PA)	National support staff ; education and experience: minimum 3yr post BSc; expertise in project management and finance; country experience: Anglophone Africa; language skills: Very good command of oral and written English

6. Intended contribution to impact over time

The technical assistance (TA) will have short-term benefits at a relatively small scale and longer-term benefits at local government area and potentially national scale. Direct beneficiaries of the TA will be ca. 225 women organized in women's groups that will be trained in waste management, charcoal briquette making, fishmeal production, entrepreneurship and business management by the Women's Initiative The Gambia (WIG). These trainings will have direct impact on the livelihoods of the women and their families as well as induce a multiplier effect because the women pass their knowledge on to others and, via the sale of charcoal briquettes and poultry products, increase the demand for scaling up these approaches.

By developing a bankable proposal for scalable value and supply chains that is 'owned' by national actors, this project will lead to widespread replication of the development model throughout the country and thereby have an impact on the livelihoods of thousands of people as well as a measurable reduction of the demand for charcoal from wood, which will lower the emission of greenhouse gases. In consequence, the project will lead to lasting benefits for livelihoods and climate resilience as well as mitigation benefits.

7. Relevance to NDCs and other national priorities

Waste is addressed as one of the three priority sectors in the recent Technology Needs Assessment on mitigation. Although a preference is given for landfill management, reduction of waste streams and transformation of waste into valuable products can be considered of relevance to The Gambia.

Agriculture is considered a critical sector for climate change adaptation and the TNA mentions the need to improve agricultural production to address expected impacts on productivity. While not specifically mentioned, diversification of livelihoods constitutes great opportunities to reduce climate vulnerability. Through provision of alternative income sources, this TA will therefore strongly support resilience to climate change and other impacts.

Despite attempts to overcome gender inequalities, the Program for Accelerated Growth and Employment (PAGE 2012-15) lays out plans to further promote gender equality and women empowerment through awareness raising, empowerment, poverty eradication, combating violence and capacity development. This TA will strongly support the capacity of women and improve their livelihoods.

The National Adaptation Plan of Action (NAPA) mentions the need to rely on charcoal briquettes to divest from drivers destroying forest resources in the absence of viable alternatives whereas the Nationally Appropriate Mitigation Action (NAMA) document refers to energy efficient cookstoves to reduce the demand on woodfuels. While energy efficient cookstoves are not targeted, this TA will focus on producing renewable cooking fuels to reduce the demand woodfuels, which are causing deforestation and forest degradation both in The Gambia and neighboring Senegal.

In addition to the above, the Gambia's recent Intended Nationally Determined Contributions (INDC) mentions recycling and composting as opportunities for climate change mitigation. Under a business as usual scenario, waste flows are expected to triple by 2025, which would increase leakage from the open dumps and enhance soil and water contamination. Next to environmental concerns, the lack of control of this important sector would also have negative effects on the health of the communities living in the vicinity of these sites. Suggestions are therefore made to flare the evolving methane as a mitigation measure, but reduction of waste streams appears to be an urgent measure that this TA would tackle.

8. Linkages to relevant parallel on-going activities:

Over the past years Women’s Group The Gambia has supported poor women in rural and urban communities by providing training in waste management, charcoal briquetting, composting, business management and other topics (e.g. gardening, tree planting and bee keeping) as described in greater detail in the initial request.

These activities were funded by different donors but the Global Environment Facility (GEF) stands out as having provided several grants between 2012 and 2016 that were implemented or coordinated by a number of organizations such as RH Consulting and Deline’s Gift. At least one project was funded by the European Union and implemented by WasteAid, a UK based charity leveraging funds to tackle waste management problems in a number of developing countries. Concern Universal, an international NGO based in the UK, has also carried out capacity development activities in the past, some of which appear to be ongoing.

After the trainings WIG has stayed in touch with the women groups such that it has been possible to organize a meeting with at least 15 of them within a few days and meeting two of them in their communities during the field mission to The Gambia. The women are continually accompanied by WIG and given ongoing support and training in order to improve their capacities further and enhance their abilities as micro entrepreneurs. The TA is therefore requested to support these ongoing activities and enable further scaling up by targeting additional groups.

9. Anticipated follow up activities after this technical assistance is completed:

The technical assistance will lead to a number of deliverables that are critical to an improved waste management, rural development and empowerment of women in The Gambia. In particular, the TA will produce:

- A baseline report and database detailing expected current and future waste streams next to providing a better understanding of the environmental degradation related to unmanaged waste and demand for charcoal as cooking fuel. This report will be instrumental for future reference and scaling up of the activities for actors in the public, private and civil society domains as well as for development-oriented research.
- A report providing a model for developing a sustainable waste management value and supply chain that can be further scaled up. The primary objective of the report will be to assess how the supply of waste material can best be utilized to increase the livelihoods of rural women while improving environmental indicators. This document can be used in future planning and will be useful to both public and private sector actors.
- A concept note for fundraising developed in collaboration with national stakeholders and funding agencies to ensure scaling up of the TA within the moulds of the model report. This document will be particularly instrumental for leveraging large-scale support with international funding agencies and donors.

If the TA is successful in leveraging large-scale funding as planned, it would lead to major investments in sustainable waste management at Local Government Area to national scales. Implementation could immediately follow the TA if a phased approach is taken and could reach thousands of households within a year. By the end of the TA it will be possible to make better projections of the total potential environmental and economic impact of scaling up the planned activities.

10. Gender and co-benefits:

Imbedded in design of the activities:	A gender mainstreaming analysis is mandatory to include for all technical assistances. A gender expert will be assigned to carry out an assessment and
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	<p>evaluation regarding gender mainstreaming during the implementation of the TA. In addition, please describe all support to gender aspects, women's equality and other co-benefits embedded into the Response Plan (please include a reference to the actual activities and outputs as described in section 3).</p> <p>For guidance, please refer to the CTCN's website here: https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development</p> <p>Further reading on gender mainstreaming can be found here: https://www.ctc-n.org/technology-sectors/gender</p>
Gender and co-benefits intended as result of the activities:	It is anticipated that the TA will create a growing interest in the activities of the groups that could lead to spin-offs and wider adoption of the technologies. Whether this will take place and how depends strongly on the success of the initial work of the TA and the scaling up activities implemented.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

In country stakeholder	Role in implementation of the technical assistance
Ministry of Environment, Climate Change and Natural Resources	Line ministry responsible for the activities; important role in implementing and scaling up the TA
Ministry of Finance and Economic Affairs	Ministry hosting GCF National Designated Authority; important role in scaling up the TA through financial support; potential role in supporting the implementation of the TA
Ministry of Health and Social Welfare	Waste is relevant for health hence potential role in scaling up the TA
Banjul City Council	Partner in waste management and provider of training facilities
Women's Group The Gambia	Main training partner on the ground; builds and maintains the links to the women's groups
Gambia Technical Training Institute	CTCN National Designated Entity
Department of Water Resources	National UNFCCC focal point
Brikama area council	Partner in waste management
Community women groups	Main beneficiaries of the technical assistance; provide learning experience for scaling up
Concern Universal	Partnering international NGO
WasteAid	Partnering international NGO
Others?	

12. SDG Contributions:

Instructions: Please complete the grey section below for a maximum of three SDGs that will be advanced through this TA. A complete list of SDGs and their targets is available here:

<https://sustainabledevelopment.un.org/partnership/register/>.

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	The TA will focus on empowering women groups by providing access to knowledge and technology to improve their livelihoods
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all(consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	Through the TA demand for charcoal briquettes will substitute the need for charcoal and other woodfuels as cooking energy source
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	By introducing renewable energy from waste briquettes the TA will contribute to The Gambia's INDC, which foresees action in the areas of forest protection, agricultural intensification and waste management
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	The TA will provide The Gambia with technical and institutional capacity to better manage waste, which has considerable impact on both mitigation and adaptation
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	

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	By reducing the demand for woodfuels the TA will contribute to protecting forests and it will potentially improve environmental indicators related to waste management
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	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

<i>Please tick off the relevant boxes below</i>	<i>Primary</i>	<i>Secondary</i>
<input type="checkbox"/> 1. Technology identification and prioritisation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 2. Research and development of new climate technologies	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3A. Feasibility studies for specific known climate technology options	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3B. Piloting of known technologies in local conditions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 4A. Law, policy and regulatory reform recommendations	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 4B. Sector specific roadmap or strategy design	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 5. Finance facilitation and market creation	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.