
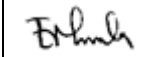



Country	Malawi
Request ID#	202000022
Title	<i>Assessment of the current status of the circular economy in the waste sector for developing a waste stream specific roadmap in Malawi</i>
NDE	<p>Lyson Kampira Directeur des services de recherche Commission nationale pour la science et la technologie Tel: +265 1 771 550, +265 999 916 036 Email: lkampira@ncst.mw, lkampira68@gmail.com Address: NCST, 1st Floor Lingadzi House, Robert Mugabe Crescent, Private Bag B303, Lilongwe 3, Malawi</p>
Proponent	<p>Professor Elijah M.M. Wanda (PhD) DIRECTOR GENERAL National Commission for Science and Technology (NCST) Lingadzi House P/Bag B303 Lilongwe 3 Malawi [Tel: (265) 01771550 Cell: (265) 0996723268 Fax: (265) 01772431 E-mail: ewanda@ncst.mw / elijahwanda@gmail.com</p>

Summary of Climate Technology Centre and Network (CTCN) technical assistance

The circular economy is a regenerative, restorative, economic and industrial model for design processes that seeks to use materials that have already been processed and can be recovered and reused, thus protecting the natural resources from overexploitation, which is particularly relevant in Africa. This aims to maintain resources for longer periods, driving more efficient processes and technologies and reducing the loss of materials.

To achieve these aims, processes such as redesigning, reusing, recycling, repairing and remanufacturing are required, as well as disruptive business models such as product-as-a-service and product lifecycle extension. CTCN will support Malawi, collaborating with its Nationally Designated Entity counterpart, in the systematization of these experiences in order to develop an analysis of the current situation of the circular economy within the waste sector, identifying and developing an updated map of key players/stakeholders, public/private initiatives, definition of territories, description of gaps and barriers, and a waste stream-specific circularity analysis, to serve as input for the development of a waste stream-specific circular economy road map relating to climate change, that could serve as a management tool for a future implementation phase in order to create new businesses, innovation and technological transfer, generate quality employment and combat climate change in Malawi, while complying with its nationally determined contributions (NDC) and sustainable development goals (SDGs), enabling Malawi to become a leader in the field of circular economy.

Agreement: (If possible, please use electronic signatures in Microsoft Word file format)	
National Designated Entity to the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism	
Name:	Lyson Kampira
Title:	Directeur des services de recherche Commission nationale pour la science et la technologie NDE
Date:	2 nd September 2020 
Signature:	
Project Proponent (Optional)	
Name:	Professor Elijah M.M. Wanda (PhD)
Title:	DIRECTOR GENERAL National Commission for Science and Technology (NCST) Lingadzi House P/Bag B303 Lilongwe 3 Malawi [Tel: (265) 01771550 Cell: (265) 0996723268 Fax: (265) 01772431 E-mail: ewanda@ncst.mw / elijahwanda@gmail.com
Date:	2nd September, 2020 
Signature:	
Climate Technology Centre and Network (CTCN)	
Name:	Rose Mwebaza
Title:	Director of CTCN
Date:	15/09/2020
Signature:	

1. Background and context

Since the Industrial Revolution, in the nineteenth century, most countries have based their growth and development on a linear model of production and consumption which can be summed up as “take, make and discard” and an energy matrix that is based on the use of fossil fuels. Some 250 years later, our Earth has become home to 7 billion people, who use resources equivalent to 1.7 planets.¹ Not only is the linear economy inefficient, because out of the 92.8 billion tonnes of resources mined each year, only 9 per cent is reused, but it also contributes to environmental degradation and climate change, as the management of materials accounts for approximately 67 per cent of greenhouse gas (GHG) emissions.² Human activity is estimated to have caused the global temperature to increase by about 1°C above pre-industrial levels and, if no rapid and far-reaching action is taken, the temperature is expected to rise by 1.5°C between 2030 and 2053.³

The sub-Saharan country Malawi is facing far reaching challenges linked to its current linear economic model. Waste in Malawi has been a pressing topic for years now, causing environmental degradation, rising GHG emissions and severe health problems. Despite attempts to respond to these challenges, waste management systems and public awareness are inadequate to cope with waste in general. Waste collection rates are about 30% and only about 4% of waste is recycled by municipalities with the rest being dumped on solid waste disposal sites. Waste generation in Malawi, like in many other sub-Saharan countries, is driven by a strong population growth, rapid urbanization, a growing middle class, changing consumption habits and production patterns, and a global waste trade and trafficking. Based on these tendencies, waste generation is expected to triple until 2050.⁴

The circular economy concept (Figure 1) seeks to replace the current linear economic model with a circular model, to enable the harnessing and efficient use of resources, promoting the use of non-conventional renewable energies (NCRE). Instead of extracting natural resources, the circular economy involves recovering and reusing materials that have already been processed, thus keeping them in circulation for as long as possible, reducing pressure by up to 28 per cent and GHG emissions by up to 72 per cent globally.⁵ A circular system allows the decoupling of economic growth from the use of natural resources, promoting the creation of new companies, as well as changes in the production processes of existing companies, with an economic potential of up to US \$4.5 trillion,⁶ and generating up to 6 million new jobs by 2030 worldwide,⁷ thus complying in particular with Sustainable Development Goals (SDGs) 9, 12 and 13, as well as the nationally determined contributions (NDC) agreed to by Malawi, representing a great opportunity for sustainable development in Africa.

¹ Global Footprint Network, 2018, www.footprintnetwork.org

² Circularity Gap Report, Circle Economy, 2018

³ Global Warming of 1.5°C, IPCC, 2018

⁴ World Bank, 2018

⁵ Resource Efficiency: Potential and Economic Implications, IRP, 2017

⁶ Waste to Wealth: The Circular Economy Advantage, Peter Lacy, Jakob Rutqvist, 2015

⁷ World Employment Social Outlook 2018: Greening with Jobs, ILO, 2018

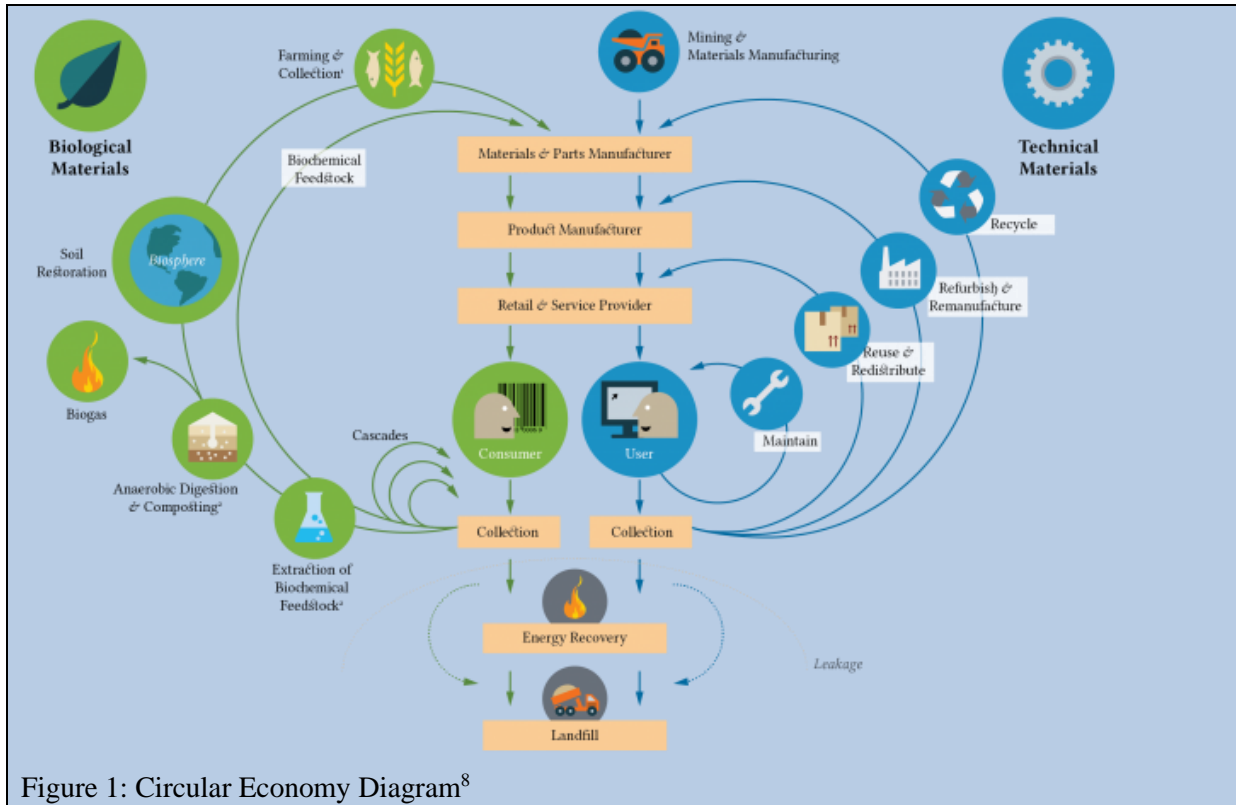


Figure 1: Circular Economy Diagram⁸

2. Problem statement

The problem to be addressed is the lack and asymmetry of information, as well as the initiation and coordination failures that exist in Malawi with regards to the state and level of development of the circular economy.

Malawi has implemented first public policies and private initiatives to advance towards an integrated waste management and a circular economy, characterized mainly by regulations, programs and initiatives that have established a framework for waste management, promoted recycling to reduce the generation of waste and promote its recovery and reuse in order to protect the health of its citizens and the environment. Yet, many of these initiatives have been lacking in terms of implementation and consistency. The 2013 National Climate Change Investment Plan as well as the 2015 assessment of Nationally Appropriate Mitigation Actions (NAMA) foresaw ambitious programmes and projects on waste management and pollution control, and sustainable solid waste management, yet without much progress that has been achieved to date.

Malawi requires a national strategy for a circular economy that collects and systematizes experiences, defines objectives and establishes clear goals, identifies and launches promising pilot projects, and provides information on the dimension of the existing benefits and barriers, thus enabling the creation of a road map in order to begin the transition towards a circular model aligned with national strategies for climate change, creating performance indicators that facilitate monitoring compliance with the NDC, the SDGs (9, 12 and 13) and the commitments of Malawi under the Paris Agreement adopted by the Conference of the Parties (COP) to the Framework Convention on Climate Change.

The following waste streams will be analysed within the technical assistance:

⁸ The Circular Economy, Ellen MacArthur Foundation, 2012

- Inorganic domestic waste:
 - Plastics
 - Metals
 - Glass
 - Paper
- Organic waste:
 - Household waste
 - Agricultural waste

Excluded waste streams are:

- Hazardous waste
- Industrial waste
- Liquid waste (waste water)
- E-Waste

Based on the concept of circular economy, the technical assistance foresees to analyse waste streams along the entire value chain with the inclusion of waste prevention so to maximise GHG mitigation benefits:

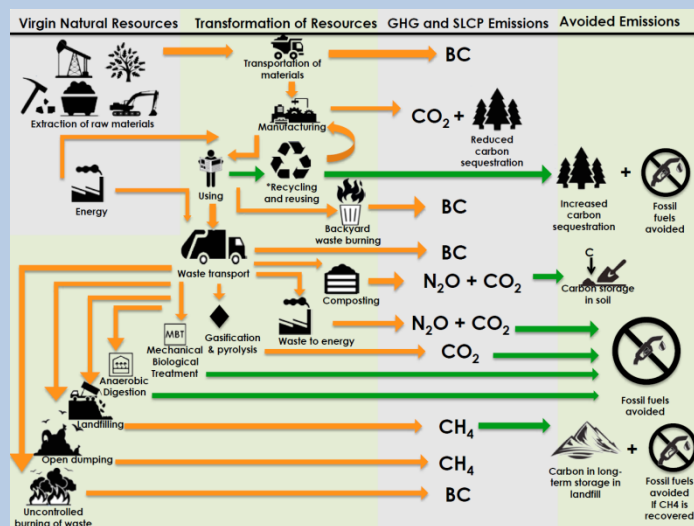


Figure 1: Waste management and climate change⁹

After a general overview and analysis of all waste streams, the technical assistance will put a focus on one specific waste-stream prioritized in coordination with the NDE and based on the results of a multi-criteria analysis. The technical assistance foresees a comprehensive circularity analysis for the prioritized waste stream resulting in a roadmap with recommendations on technologies, policies, private sector engagement and other best practices to adopt and on which stakeholders to involve.

⁹ Global Waste Management Outlook, 2015

3. Logical Framework for the CTCN Technical Assistance:

<i>Goal: Development of a waste stream-specific road map¹⁰ for the circular economy in Malawi</i>																						
<i>Outcome: Malawi, which is aware of the economic, social and environmental benefits of the circular economy but has no specific strategies for its implementation, may develop a road map for the promotion and development of a waste stream-specific circular model, in which public and private players will be identified to generate national strategies required for the development of the circular economy.</i>																						
											Month¹¹											
											1	2	3	4	5	6	7	8	9	10	11	12
Output 1: Development of an implementation plan and communication documents																						
Activity 1: All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance.																						
<p>Activity 1.1: Drafting a detailed implementation plan for all activities, deliverables, outputs, deadlines and responsible persons/organizations, including a gender study and an itemized budget for implementing the Response Plan. The detailed implementation plan and budget must be based directly on this Response Plan.</p> <p>Activity 1.2: Based on the indicators listed in the Closure and Data Collection Report, drafting a monitoring and evaluation plan with specific, measurable, achievable, relevant and time-bound indicators that can be used to monitor and evaluate the timeliness and appropriateness of implementation. The monitoring and evaluation plan should enable the implementer to complete the CTCN Closure and Data Collection Report at the end of the technical assistance (please refer to Activity 1.4 and Section 14 of the Response Plan);</p> <p>Activity 1.3: A two-page description of the expected impact of the CTCN technical assistance at the start of the assistance, updated at the end of the technical assistance (a template will be provided).</p> <p>Activity 1.4: A CTCN Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).</p>																						
Deliverable 1:																						

¹⁰ Road maps will be at the national level and will be determined by Malawi; they may have a sectoral or process-specific scope.

¹¹ The project timeline can be adjusted according to the level of development of the participating country.

1.1 Implementation plan																				
1.2 Monitoring and evaluation plan																				
1.3 Impact description document (initial and final version)																				
1.4 Closure and Data Collection Report																				
Output 2: Analysis of existing circular economy initiatives and key players in Malawi																				
<p>Activity 2.1: Kick-off meeting for the presentation of technical assistance with the different stakeholders Present the technical assistance plan (Deliverable 1.1). Collect relevant national policies, past and ongoing projects and initiatives in the waste sector, including the activities of the EU and other local, national and international stakeholders in Malawi.</p>																				
<p>Activity 2.2: Analysis of the status quo of circularity in the waste sector of Malawi to define a waste sector baseline Identification and analysis of the key initiatives, policies, strategies and stakeholders in the waste sector with a focus on agricultural and household waste (see point 5. below). Classification and data collection of waste sources, quantities and usage through primary and secondary research. This is to define the baseline scenario that will serve as a reference for the outcomes and objective of the technical assistance.</p> <ol style="list-style-type: none"> 1. Analyse and aggregate policies, strategies, past and ongoing initiatives and projects 2. Identify and incorporate the NDC of Malawi and its commitments to the SDGs, in particular SDGs 9, 12 and 13, as well as other commitment and targets of Malawi’s national development plan and legislation. 3. Map key stakeholders in Malawi, including institutions, agencies, public, private partnerships and other relevant stakeholders at local and national level. Ideally group them into the following categories: (a) Government/Public Sector; (b) Companies; (c) Civil Society Organizations; (d) Academia; and (e) Enterprises. 4. Identify stakeholders and other parties interested and committed to the circular economy concept and the road map to be developed. 5. Define waste streams. The following waste streams in domestic and agricultural waste have been identified as relevant: (a) Plastics (domestic), (b) Metals (domestic), (c) Paper (domestic), (d) Glass (domestic), (e) Organic Waste (domestic), (f) Agricultural Waste 6. Collect data on sources, quantities and usage of waste for each of the waste streams. Design and conduct questionnaires and random sampling of waste to collect further data where needed.¹² 																				

¹² Questionnaires and random sampling of waste should happen according to the guidelines of the United Nations Statistics Division.

<p>Through consultations and interviews with potential participants of the road map, a level of experience, knowledge, competencies, networks, interest, strengths/weaknesses and commitment to the development of a circular economy will be identified. In total, a minimum of five and a maximum of 15 players will be interviewed, prioritizing those that are recognized by national and international organizations as leaders in the field of circular economy. The definition of players and processes for consultation and/or to be incorporated in the analysis for the development of the road maps must have the approval of the NDE of Malawi before the CTCN.</p> <p>During this activity, the gender perspective must be incorporated transversally, and it must be evaluated how this diagnosis, associated with a baseline in circular economy issues, could carry economic, social and environmental implications, disaggregated by gender.</p> <p>In view of the CTCN's unrestricted commitment to gender equality, throughout this process the active inclusion of women in each phase should be considered, ensuring that their participation is considered incidentally, at all decision-making levels and that the dignity and respect of women also be considered, in line with SDG 5 on gender equality.¹³</p>																			
<p>Deliverable 2: 2.1 Meeting report. 2.2 Evaluation report to identify and define the status quo of the waste sector as well as the state of circular economy in this sector in Malawi, describing past and ongoing initiatives, policies, projects and the experience, capabilities and commitments of key stakeholders as well as the status quo within the different waste streams. The report should emphasize the degree of adoption of the circular economy in Malawi, including existing sectoral road maps. The report must contain information relating to the expected outcomes indicated in Activity 2.2.</p>		X		X															
<p>Output 3: Identification of the perceived value of the circular economy and of benefits, weaknesses, opportunities and challenges in Malawi’s waste sector.</p>																			
<p>Activity 3.1: Analysis of the perceived benefits Analysis of the benefits recognized in the circular economy within the waste sector by the different key players of Malawi identified in Output 2. Differentiation between the concept of ‘waste’ according to the legal definition in Malawi and products that still have useful life and value. Summarize the waste and the products or by-products that still have useful life and value for each economic activity evaluated under output 2 and 3 in the context of their</p>																			

¹³ CTCN Gender Mainstreaming Tool for Response Plan Development: <https://www.ctc-n.org/technologies/ctcn-geNDER-mainstreaming-tool-response-plan-development>

<p>economic, social and environmental benefit. The benefit of the circular economy recognized by the players involved will also be analysed.</p> <p>Incorporate the NDC of Malawi and its commitments to the Sustainable Development Goals (SDGs) of the United Nations, in particular SDGs 9, 12 and 13 for this first stage.</p>													
<p>Activity 3.2: Analysis of strengths and opportunities</p> <p>Analysis of the strengths and opportunities of Malawi in the adoption of a general, sectoral or specific circular economy process as agreed with the NDE, among others:</p> <ul style="list-style-type: none"> (a) Industrial, technological and innovative capacities and infrastructure (b) Policies or initiatives on recycling, climate change and circular economy (c) Governance and leadership (d) Level of integration of non-conventional renewable energies (NCRE) (percentage of the energy matrix) (e) Alignment of public and private agendas (commitment of government, companies, organizations, academia and society) (f) Job creation (g) Impact on NDC and SDGs in Malawi (h) Mapping of the main economic activities of Malawi that may be most impacted by the circular economy. <p>The scope and methodology of the assessment must be previously approved by Malawi's NDE.</p>													
<p>Activity 3.3: Analysis of weaknesses and barriers</p> <p>Analysis of the weaknesses and barriers of Malawi in the adoption of a general, sectoral or specific circular economy process as agreed with the Designated National Entity (NDE), particularly the following barriers:</p> <ul style="list-style-type: none"> (a) Regulatory (b) Market (c) Cultural (d) Support for entrepreneurship (e) Funding and capital (f) Industrial and technological (g) Recovery of products or materials (logistics, collection, repair and remanufacturing) <p>The scope and methodology of the assessment must be previously approved by the Malawi's NDE.</p>													
<p>Activity 3.4: Development of an indicator matrix</p> <p>Generation of a matrix of transparent and comparable circular economy indicators between different economic activities / waste streams.</p>													
<p>Activity 3.5: Stakeholder meeting on prioritization of waste streams</p>													

4 Resources required and itemized budget:

Provide an indicative summary of the necessary resources and detailed budget required to implement the technical assistance of the CTCN, including monitoring and evaluation activities, with the help of the following table. It is important to note that a minimum of 1 per cent of the budget must be explicitly aimed at gender-specific activities related to technical assistance (see Section 10 for more information on gender). Once the response plan is completed, the Climate Technology Centre (CTC) will select the implementers responsible for implementing the response. The CTCN and the chosen lead implementer will need to agree on a detailed activity-based budget.

Activities and Outputs	Input: Human resources (Title, role, estimated number of days)	Input: Travel (Purpose, national vs. international, number of days)	Inputs: Meetings and events (Meeting title, number of participants, number of days)	Input: Equipment and resources (Item, purpose, buy/rent, quantity)	Estimated cost (US \$)	
					Minimum	Maximum
Output 1: Development of the work plan and related communication documents	<i>NC1, 10 days NC2, 10 days</i>				4,000	4,800
Activity 1.1: Work plan	<i>NC1, 2 days NC2, 2 days</i>	-	-	-	800	960
Activity 1.2: Monitoring and evaluation plan	<i>NC1, 2 days NC2, 2 days</i>	-	-	-	800	960
Activity 1.3: Impact description document (initial and final version)	<i>NC1, 2 days NC2, 2 days</i>	-	-	-	800	960

Activity 1.4: Closure and Data Collection Report	<i>NC1, 4 days NC2, 4 days</i>	-	-	-	<i>1,600</i>	<i>1,920</i>
Output 2: Analysis of existing circular economy initiatives and key players in Malawi	E1, 22 days E2, 22 days NC1, 22 days NC2, 22 days GE, 7 days	-	-	-	<i>55,120</i>	<i>66,144</i>
Activity 2.1: Kick-off meeting for the presentation of technical assistance with the different stakeholders	<i>E1, 2 days E2, 2 days NC1, 2 days NC2, 2 days GE, 2 days</i>	<i>1 international trip to Malawi for E1 and E2 1 national trip for NC1, NC2 and GE</i>	<i>Kick-off meeting, 1 day, 25 participants</i>		<i>17,140</i>	<i>20,568</i>
Activity 2.2: Analysis of the status quo of circularity in the waste sector of Malawi to define a waste sector baseline	<i>E1, 20 days E2, 20 days NC1, 20 days NC2, 20 days GE, 5 days</i>	<i>4 national trips for E1, E2, NC1 and NC2</i>	<i>Interviews with local players: 5 focus groups (minimum 1 and maximum 3 local players per group) Random sampling of waste at landfills and households by E2 and NC2</i>	<i>Local transportation for 6 days (car rental) Waste sampling equipment</i>	<i>37,980</i>	<i>45,580</i>
Output 3: Identification of the perceived value of the circular economy and of benefits, weaknesses, opportunities and challenges in	E1, 26 days NC1, 26 days	-	-	-	<i>18,200</i>	<i>21,840</i>

Malawi's waste sector.						
Activity 3.1: analysis of perceived value	<i>E1, 5 days NC1, 5 days</i>	-	-	-	<i>3,500</i>	<i>4,200</i>
Activity 3.2: Analysis of strengths and opportunities	<i>E1, 5 days NC1, 5 days</i>	-	-	-	<i>3,500</i>	<i>4,200</i>
Activity 3.3: Analysis of weaknesses and barriers	<i>E1, 5 days NC1, 5 days</i>	-	-	-	<i>3,500</i>	<i>4,200</i>
Activity 3.4: Development of an indicator matrix	<i>E1, 10 days NC1, 10 days</i>	-	-	-	<i>7,000</i>	<i>8,400</i>
Activity 3.5: Stakeholder meeting on prioritization of waste streams	<i>E1, 1 day NC1, 1 day</i>	-	Online Meeting	-	<i>700</i>	<i>840</i>
Output 4: Circularity analysis of one prioritized waste stream	<i>E1, 27 days E2, 27 days NC1, 27 days NC2, 27 days</i>	-	-	-	<i>36,400</i>	<i>43,680</i>
Activity 4.1: Identification and analysis of circularity pathways for the prioritized waste stream	<i>E1, 10 days E2, 10 days NC1, 10 days NC2, 10 days</i>	-	-	-	<i>14,000</i>	<i>16,800</i>
Activity 4.2: Market analysis for the adoption of the identified circularity pathways in Malawi	<i>E1, 15 days E2, 15 days NC1, 15 days NC2, 15 days</i>	-	-	-	<i>21,000</i>	<i>25,200</i>
Activity 4.3:	<i>E1, 1 day E2, 1 day</i>	-	Online Meeting	-	<i>1,400</i>	<i>1,680</i>

Stakeholder meeting on circularity analysis	<i>NC1, 1 day NC2, 1 day</i>					
Output 5: Development of a circular economy road map and identification of a potential circularity pilot project	E1, 33 days E2, 33 days NC1, 35 days NC2, 35 days GE, 6 days				62,140	74,568
Activity 5.1: Development of a road map for increased circularity in the prioritized waste stream in Malawi	<i>E1, 20 days E2, 20 days NC1, 20 days NC2, 20 days GE, 2 days</i>				<i>28,400</i>	<i>34,080</i>
Activity 5.2: Identification of a potential circular economy project for Malawi within the prioritized waste stream	<i>E1, 10 days E2, 10 days NC1, 10 days NC2, 10 days GE, 1 day</i>				<i>14,200</i>	<i>17,040</i>
Activity 5.3: Establishment of communication material	<i>E1, 1 day E2, 1 day NC1, 3 days NC2, 3 days GE, 1 day</i>				<i>2,400</i>	<i>2,880</i>
Activity 5.4: Presentation of final results	<i>E1, 2 days E2, 2 days NC1, 2 days NC2, 2 days GE, 2 days</i>	<i>1 international trip to Malawi for E1 and E2 1 national trip for NC1, NC2 and GE</i>	<i>Kick-off meeting, 1 day, 25 participants</i>		<i>17,140</i>	<i>20,568</i>
Estimated cost range for the entire Response Plan (US\$)					175,280	210,336

5 Profile and experience of experts

Experts required	Brief description of required profile
Expert 1 (E1)	Economist or commercial engineer, M.Sc., with experience in the design and development of road maps, knowledge and experience in circular economy policies and development, project management, technological innovation, industry 4.0, lifecycle assessment of products and services, climate change, SDGs and NDC with a minimum of seven years of experience. Fluency in English is required.
Expert 2 (E2)	Industrial engineer or mechanical engineer, M.Sc., with specialisation in the waste sector, knowledge and experience in circular economy policies and development, technological innovation, industry 4.0, lifecycle assessment of products and services, climate change, SDGs and NDC with a minimum of seven years of experience. Fluency in English is required.
National consultant 1 (NC1)	Economist or commercial engineer, expert in evaluation and development of industrial policies (technological innovation, road maps, national programs) and environmental policies (waste management, climate change, NDC (nationally determined contributions), TNAs (technology needs assessments), TAPs (technical assistance programmes), NAPs (national action plans) or NAMAs (nationally appropriate mitigation actions), according to the experience of the Malawi), with a minimum of five years of experience. Experience working in Malawi. Fluency in English is required.
National Consultant 2 (NC2)	Industrial engineer or mechanical engineer, M.Sc., with specialisation in the waste sector, knowledge and experience in circular economy policies and development, technological innovation, industry 4.0, lifecycle assessment of products and services, climate change, SDGs and NDC with a minimum of seven years of experience. Experience working in Malawi. Fluency in English is required.
National Consultant - Gender expert (GE)	Social science professional (sociologist, anthropologist or psychologist) expert in gender studies and management of equality policies, with experience in research methodologies and data processing, with a minimum of seven years of experience. Experience working in Malawi. Fluency in English is required.

6 Intended contribution to the expected impact of the technical assistance

The products developed under Section 3 will allow Malawi to have practical tools to identify players, technologies, territories and local and national initiatives relating to circular economy that will facilitate the development of a road map in order to generate a first updated map of stakeholders in the development of a circular economy to further the transition of Malawi towards circularity, with defined potentialities, identification of circular opportunities and clear recommendations for governments in order to strengthen the competitiveness and sustainability of Malawi. Moreover, the selection of a specific project in Malawi will facilitate access to other financial mechanisms that can scale up the work of this technical assistance.

Malawi will obtain an analysis of its productive matrix, identifying the potential for territorial development, considering at least the following aspects:

- (a) Economic (productive chains that add value to industry and competitiveness to the country)
- (b) Social (increased employment rate and impact on gender equality)
- (c) Environmental (saturated or latent zones and quantification of greenhouse gas emission reduction)
- (d) Institutional (capacities, institutions, human capital, knowledge)

As noted by the request made by Malawi to the CTCN, this technical assistance (TA) will enable the country to enhance the potential of these aspects, facilitating the creation of new national policies and initiatives, and to quantify these results to develop performance indicators that enable the country to delineate and measure progress and compliance with the draft circular economy, as well as the implementation of the NDC and SDGs signed by Malawi.

7 Relevance to NDCs and other national priorities

Within its nationally determined contributions (NDCs), Malawi has set a commitment to save between 14,000 and 16,000 Gg of CO₂e overall and up to 400 Gg of CO₂e within the waste sector by 2030. The NDC prioritizes waste as a key mitigation sector, targeting interventions in the area of waste generation reduction, recovery and composting of organic manure.¹⁴

Furthermore, the Plan for Nationally Appropriate Mitigation Actions (NAMA) from 2015 prioritizes a comprehensive project on sustainable solid waste management including the concept of reduce, reuse and recycle.¹⁵

The waste sector is a priority mitigation area and is equally a sector where the circular economy has one of the greatest impacts. This is of high importance, since the TA seeks to lay the foundations for the development of a road map to create a general, sectoral or specific circular economy strategy that generates an economic, social, institutional and environmental impact through the identification of players and territories that have favourable conditions for the development of a circular model, improving the competitiveness and efficiency of local businesses, enterprises and organizations that operate in these three sectors, particularly small and medium-sized enterprises (SMEs) that require

¹⁴ INDC, 2015

¹⁵ NAMA, 2015

sustainable and inclusive development due to the high impact that this type of enterprise has for Malawi as a main source of employment.

The field of circular economy within the waste sector represents a great opportunity for companies, organizations and academia to develop new circular business models through the incorporation of technologies and continuing competitiveness, and to reduce the environmental impact of their productive activities.

8 Links to relevant parallel activities:

This TA is built on the basis of Malawi's identification of the circular economy as an economic model with a triple impact that offers economic, social, institutional and environmental benefits.

Malawi's NAMA from 2015 foresaw the development of a comprehensive project on sustainable solid waste management.¹⁶ The technical assistance will be coordinated with eventual implementation activities under the NAMA.

Furthermore, there are several EU-funded activities in the area of water supply, sanitation and solid waste management services as well as the improvement of the circular economy of solid waste management in Blantyre and Lilongwe. The EU-funded Zantchito project, to be implemented by the UNDP, may provide opportunities to support entrepreneurs in the sector through seed funding and concessional loans.

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

The TA will be the beginning of a set of activities that will lead to the development of specific circular economy road maps in Malawi. However, the future and continuity of this initiative will be underpinned by the following actions:

- (a) Communication and promotion of the road map at a government, business, academic and social organization level.
- (b) Dissemination of the results and potential benefits of the triple impact that the implementation of the circular economy road map could have in Malawi.
- (c) Use of the road map by government agencies for the creation of new instruments to promote the development of circular business models in specific territories and/or economic activities.
- (d) Use and continuous updating of Outputs 2, 3 and 4 by the country.
- (e) Fulfilment of commitments taken on by public and private players for the implementation of actions that enable the development of a circular economy and the reduction of greenhouse gas emissions.
- (f) Creation and/or continuation of support programmes for circular economy projects by development organizations or corporations in Malawi.
- (g) Institutionalize this initiative in order to update the list of relevant players and promote the development of national and territorial circular economy strategies.
- (h) Update and monitor the NDC committed by Malawi and incorporation of new SDGs.

¹⁶ NAMA, 2015

(i) Seek opportunities for South-South cooperation from lessons learned. Potential cooperation partners will be identified through the coordination with other Circular Economy projects of the CTCN in the region.

10 Benefits in terms of gender and co-benefits:

<p>Imbedded into the design of the activities:</p>	<p>Consideration should be given to the active inclusion of women at each stage, ensuring that their participation is taken into account at all levels of decision making, as well as respect for women and their dignity. This is why this condition is clearly defined in the design of this TA in outputs 1 and 2. The road map must transversely incorporate a gender perspective. The challenge is to evaluate how this analysis associated with a baseline in circular economy issues (and the subsequent road map) could create economic, social and environmental implications, disaggregated by gender. Once the project is established, the expected results and impact should be established in terms of gender perspective, in compliance with SDG 5 on gender equality. This considers the inclusion of appropriate gender indicators in the monitoring and evaluation process.</p>
<p>Gender and co-benefits of the activities:</p>	<p>The benefits in terms of gender will be the incorporation of women into new business models based on a circular economy that, being intensive in skilled labour and use of technology, offer new and better opportunities for their education, training and subsequent participation in economic activities with circular models, as well as in the creation of new ventures and academic research. These new opportunities have the potential to improve women's living conditions, offering economic stability, security, health and equal opportunities for access to jobs, whilst at the same time reducing the wage gap, in compliance with SDG 5 on gender equality.</p> <p>In general, the following benefits are envisioned through circular economy implementation:</p> <ul style="list-style-type: none"> (a) A new awareness of the importance of moving towards a circular, low-carbon economy. (b) A decrease in the use of resource requirements per unit produced. (c) A reduction in waste generation, which increases the useful life of waste disposal sites. (d) A reduction in the amount of energy consumed and the reuse of raw materials, which reduces the energy required to produce the same product or another (if it cannot be recycled, the mineral must be extracted and refined, and the raw materials required for the manufacture of the final product must be produced, with all externalities associated with mining and industrial operations). (e) The development of new businesses and creation of new jobs. The recycling rate in Malawi is currently low, and an increase will create the need to hire more staff for the different tasks required in each link of the value chain of every product.

	<p>(f) The promotion of innovation, because it is necessary to change the production model and update production infrastructure, its equipment and technologies in order to process what is now considered waste (a future raw material).</p> <p>(g) The promotion of the use of non-conventional renewable energies (NCRE).</p> <p>(h) Tools for monitoring compliance with NDC and SDGs</p> <p>(i) Climate change mitigation and adaptation.</p>
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11 Main national stakeholders in the implementation of the technical assistance activities:

National Stakeholder	Function in the implementation of the technical assistance
Environmental Affairs Department	Policy guidance, Enforcement of regulations and source of policy and regulatory documents
City Councils (Blantyre, Lilongwe, Mzuzu and Zomba)	Data on waste generation, collection, disposal and reuse.
Municipal and Town Councils (Kasungu, Luchenza, Mangochi, Salima, Liwonde, etc.)	Data on waste management players. Identification of areas for the waste sampling. Assist in the sampling, quantification and characterisation of waste.
Academic and Research Institutions	Data on research carried out on waste.
Civil Society Organisations (youth groups, women organisations, etc.)	Waste management initiatives being undertaken. Groups of people engaged in waste management
Development Partners	Waste management initiatives being supported. Possible funding of waste management activities
Solid Waste Management Entrepreneurs	Data on waste collection, disposal and processed. Products from solid waste management activities.

12 Contribution to the SDGs:

Goal:	Sustainable Development Goal	Direct contribution from CTCN TA
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 lifelong learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
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	
	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	The objective of the technical assistance (TA) is to promote the development of circular models in the waste sector that incorporate innovative technologies and approaches aiming at strengthening the resilience of supply chains and the waste value chain.
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	The circular economy is directly related to SDG 12, promoting sustainable consumption and developing technologies and business models that enable this change with focus on the waste value chain.
13	Take urgent action to combat climate change and its impacts	<i>All technical assistance should indicate relevance to SDG 13 and at least one of the following targets (13.1 to 13.b).</i>
	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	The circular economy, through new business models and reuse of resources, allows for the direct reduction of greenhouse gas emissions.

	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	
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	
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:

<i>Please tick the relevant boxes below</i>	Primary	Secondary
<input type="checkbox"/> 1. Decision-making tools and/or information provision		X
<input type="checkbox"/> 2. Sectoral road maps and strategies	X	
<input type="checkbox"/> 3. Recommendations for legal reforms, policies and regulations	X	
<input type="checkbox"/> 4. Financing facilitation		
<input type="checkbox"/> 5. Private sector engagement and market creation	X	
<input type="checkbox"/> 6. Research and development of new technologies		
<input type="checkbox"/> 7. Feasibility of technology options		
<input type="checkbox"/> 8. Piloting and deployment of technologies in local conditions		X
<input type="checkbox"/> 9. Technology identification and prioritization		

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

14 Monitoring and evaluation process

Upon contracting the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. This monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) THE COUNTRY on overall satisfaction level with the technical assistance service provided; (ii) the Lead Implementer on the experience and knowledge gained through the technical assistance; and (iii) the CTCN Director on the timeliness and appropriateness of the activities and outputs.