CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Technical Assistance Response Plan - Terms of Reference

Country	**Zambia**
Request ID#	**2020000017**
Title	*Assessment of the current status of the circular economy in the waste sector for developing a waste stream specific roadmap in Zambia*
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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 Zambia, 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 Zambia, while complying with its nationally determined contributions (NDC) and sustainable development goals (SDGs), enabling Zambia 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:	Ben Makayi
Title:	Senior Science and Technology Officer National Designated Entity (NDE)

Date: Signature:	10th September 2020 
Project Proponent (Optional)	
Name:	Michael Annel Phiri
Title:	Technical Assistant to Director General
Date: Signature:	10th September 2020 
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]

Zambia, owning to its wealth in natural resources and the limited industrialization of its economy, has played a role in the current linear model, with key industries in the area of copper mining and processing, construction, agriculture and textiles. This has led the country to specialize in economic activities based on the extraction and partial processing of these resources, generating little economic benefit and significant environmental impacts, neglecting industrial activities that generate added value, and hindering industrial development based on technology and innovation. On the other hand, Zambia also generates around 19 million tons of solid waste every year[4] of which only around 3%[5] is reused or recycled. As one of the fastest growing economies in Africa and one of the most highly urbanized countries in Sub-Saharan Africa with a growing middle class and changing consumption and production patterns, waste generation will continue to grow in the upcoming years, exposing Zambia to ever increasing challenges of environmental degradation, rising GHG emissions and health problems.

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.[6] 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,[7] and generating up to 6 million new jobs by 2030 worldwide,[8] thus complying in particular with Sustainable Development Goals (SDGs) 9, 12 and 13, as well as the nationally determined contributions (NDC) agreed to by Zambia, 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] NAMA, 2014
[5] WIEGO, 2016
[6] Resource Efficiency: Potential and Economic Implications, IRP, 2017
[7] Waste to Wealth: The Circular Economy Advantage, Peter Lacy, Jakob Rutqvist, 2015
[8] World Employment Social Outlook 2018: Greening with Jobs, ILO, 2018

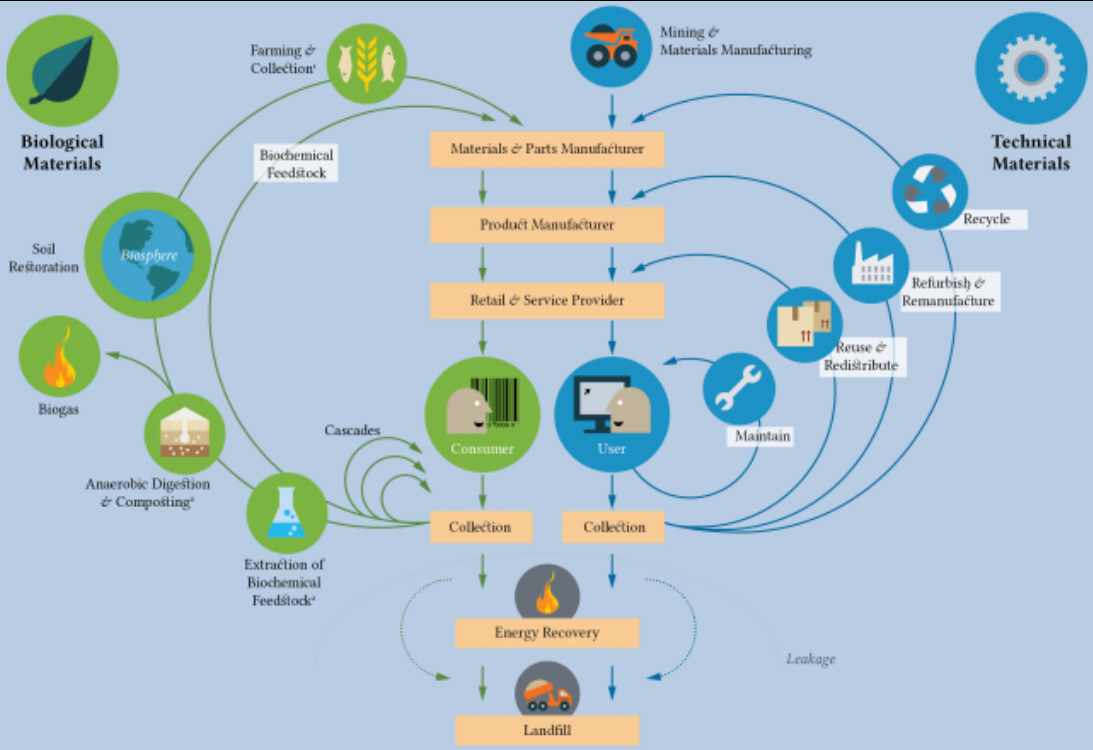

Figure 1: Circular Economy Diagram[9]

2. Problem statement

The problem to be addressed is the lack and asymmetry of information, as well as the coordination failures that exist in Zambia with regard to the state and level of development of the circular economy, as well as the lack of knowledge of the players and the circular initiatives that are being developed in their respective territories, their potential benefits and existing barriers.

Zambia 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, regulated extended producer responsibilities, and promoted recycling to reduce the generation of waste and its recovery and reuse in order to protect the health of its citizens and the environment. The 2014 Nationally Appropriate Mitigation Actions (NAMA) on Integrated Waste Management foresee the identification and implementation of waste management technologies to facilitate waste recovery and recycling at disposal sites. The 2017 research on "Waste-as-a-Resource" has conducted field studies at 6 dumpsites to identify waste-as-a-resource opportunities. In 2019, the status quo in the cities of Chongwe and Livingstone was assessed to find opportunities for the reduction of open burning practices. Despite the variety of past and ongoing initiatives, there has been a lack in terms of coordination and effectiveness of initiatives related to circular economy.

Zambia 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 to the national strategy

[9] The Circular Economy, Ellen MacArthur Foundation, 2012

for climate change, creating performance indicators that facilitate monitoring compliance with the NDC, the SDGs (9, 12 and 13) and the commitments of Zambia under the Paris Agreement adopted by the Conference of the Parties (COP) to the Framework Convention on Climate Change.

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

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

Excluded waste streams are:

- Hazardous waste
- Industrial waste
- Liquid waste (wastewater)
- 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:

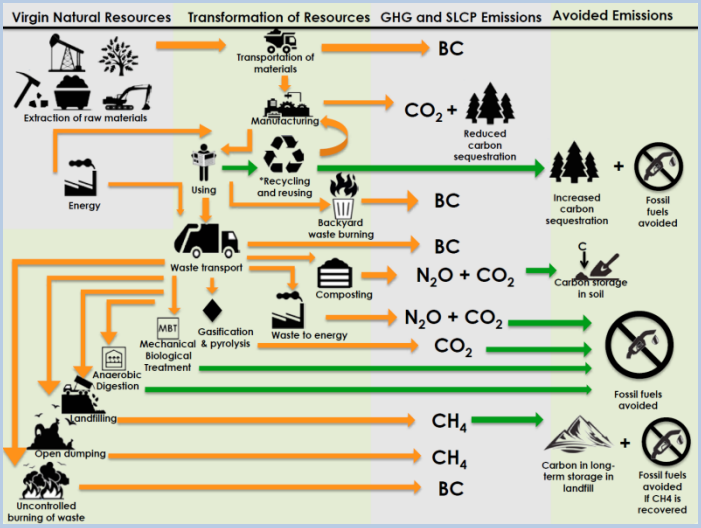

Figure 1: Waste management and climate change[10]

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 country 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.

[10] Global Waste Management Outlook, 2015

3. Logical Framework for the CTCN Technical Assistance:

	Month[12]											
	1	2	3	4	5	6	7	8	9	10	11	12
***Goal**: Development of a sectoral or process-specific road map[11] for the circular economy in Zambia*												
***Outcome**: Zambia, 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 sectoral or process-specific circular model, in which public and private players will be identified to generate national strategies required for the development of the circular economy.*												
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.* **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. **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 Item 1.4 and Section 14 of the Response Plan); **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). **Activity 1.4**: A CTCN Closure and Data Collection report completed at the end of the technical assistance (a template will be provided).												
Deliverable 1:												

[11] Road maps will be at the national level and will be determined by Zambia; they may have a sectoral or process-specific scope.
[12] 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 Zambia											
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 Zambia.											
Activity 2.2: Analysis of the status quo of circularity in the waste sector of Zambia 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. 1. Analyse and aggregate policies, strategies, past and ongoing initiatives and projects 2. Identify and incorporate the NDC of Zambia and its commitments to the SDGs, in particular SDGs 9, 12 and 13, as well as other commitment and targets of Zambia's national development plan and legislation. 3. Map key stakeholders in Zambia, 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.[13]											

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

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 Zambia before the CTCN. 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. 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.[14]												
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 Zambia, 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 Zambia, including existing sectoral road maps. The report must contain information relating to the expected outcomes indicated in Activity 2.2.		X		X								
Output 3: Identification of the perceived value of the circular economy and of benefits, weaknesses, opportunities and challenges in Zambia's waste sector.												
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 Zambia identified in Output 2. Differentiation between the concept of 'waste' according to the legal definition in the country 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												

[14] CTCN Gender Mainstreaming Tool for Response Plan Development: https://www.ctc-n.org/technologies/ctcn-geNDEr-mainstreaming-tool-response-plan-development

economic, social and environmental benefit. The benefit of the circular economy recognized by the players involved will also be analysed. Incorporate the NDC of Zambia and its commitments to the Sustainable Development Goals (SDGs) of the United Nations, in particular SDGs 9, 12 and 13 for this first stage.												
Activity 3.2: Analysis of strengths and opportunities Analysis of the strengths and opportunities of Zambia in the adoption of a general, sectoral or specific circular economy process as agreed with the NDE, among others: (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 Zambia (h) Mapping of the main economic activities of Zambia that may be most impacted by the circular economy. The scope and methodology of the assessment must be previously approved by Zambia's NDE.												
Activity 3.3: Analysis of weaknesses and barriers Analysis of the weaknesses and barriers of Zambia in the adoption of a general, sectoral or specific circular economy process as agreed with the Designated National Entity (NDE), particularly the following barriers: (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) The scope and methodology of the assessment must be previously approved by the Zambia's NDE.												
Activity 3.4: Development of an indicator matrix Generation of a matrix of transparent and comparable circular economy indicators between different economic activities / waste streams.												
Activity 3.5: Stakeholder meeting on prioritization of waste streams												

In a meeting with the NDE, the project proponent and further participating stakeholders identified under output 2, the results of the indicator matrix should be presented and discussed. Together, one prioritized waste stream should be selected that will be further investigated under output 4 and 5.												
Deliverables 3: 3.1 Report presenting a map of the main economic activities / waste streams of Zambia that may be most impacted by the circular economy and the quantification of the economic, social and environmental benefits, and their impact on Zambia's nationally determined contributions (NDC) and SDGs. It will also include an analysis of the value recognized in the circular economy by the different key players of Zambia identified in Output 2. 3.2 Report on the strengths and opportunities identified. 3.3 Report on the weaknesses and barriers identified. 3.4 Report with indicator matrix on potential for circular economy. 3.5 Meeting report				X X	 X	 X X						
Output 4: Circularity analysis of one prioritized waste stream												
Activity 4.1: Identification and analysis of circularity pathways to enhance circularity Identification of circularity technologies, concepts, policies and best practices along the whole value chain of the prioritized waste stream. Analysis of general requirements for the adoption and the economic, social, institutional and environmental impact of these pathways towards circularity.												
Activity 4.2: Market analysis for the adoption of the identified pathways towards circularity in Zambia Analysis of the status quo of the national market for the value chain of the prioritized waste stream. Identification of potential adopters and stakeholders in Zambia with respect to the identified technologies, concepts, policies and best practices for enhanced circularity in the prioritized waste stream. Analysis of their current status of development as well as their potential interest, requirements, benefits and gaps linked to the adoption of the identified pathways towards circularity.												
Activity 4.3: Stakeholder meeting on circularity analysis In a meeting with the NDE, the project proponent and further participating stakeholders identified under output 2, the results of the circularity analysis should be presented and discussed. Together, one prioritized circularity pathway should be selected that will be conceptualized as a pilot project / proof of concept under Output 5.												
Deliverable 4: 4.1 Report presenting technologies, concepts, policies, engagement strategies and best practices enhancing circularity in prioritized waste streams, including requirements and benefits. 4.2 Report presenting the market analysis for the adoption of the identified circularity pathways in Zambia.							X	 X				

4.3 Meeting report.								X				
Output 5: Development of a circular economy road map and identification of a potential circularity pilot project												
Activity 5.1: Development of a road map for increased circularity in the prioritized waste stream in Zambia Development of a road map to enhance circular economy in Zambia based on results of the outputs 2, 3 and 4. The road map should include: a) Circularity analysis of prioritized waste stream b) Roadmap with short-, medium-, and long-term recommendations for the implementation for • Appropriate Technologies • Legal reforms, policies and regulations • Concepts for capacity building and awareness campaigns • Private sector engagement and market creation • Further best practices												
Activity 5.2: Identification of a potential circular economy project for Zambia within the prioritized waste stream Based on the results of the circularity analysis and the stakeholder meeting of output 4, a potential circular economy project will be identified and conceptualized for a proof of concept. To that end, the following steps must be followed: a) Define the economic activities and/or productive process within the prioritized waste stream. b) Identify and define the supply of waste usable in economic activities and/or production processes (and its location in the value chain). c) Identify and define the demand for waste usable in economic activities and/or production processes (and its location in the value chain). d) Evaluate the economic, social, institutional and environmental impact. e) Identify existing productive and technological structures in order to create partnerships. f) Identify local public and private bodies that are already developing or are interested in developing the pilot circular model. g) Develop and establish performance indicators to track and measure progress and compliance of the pilot project.												

Activity 5.3: Establishment of communication material Development of communication material on the results of the technical assistance, summarizing the road map and the potential of circular value chains in Zambia.												
Activity 5.4. Presentation of final results Present the final results of the technical assistance to the NDE, the project proponent and further participating stakeholders.												
Deliverables 5: 5.1 Development of a road map for circular economy within the prioritized waste stream in Zambia. 5.2 Evaluation report to identify and define potential project agreed with the NDE and project proponent of Zambia, describing their potential benefits in economic, social, institutional and environmental terms. 5.3 Material for communication and the final presentation of the results to the NDE, the project proponent and other participating stakeholders. 5.4 Meeting report.									X	X	X X	

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 $)** *Please indicate the cumulative cost of the activities and outputs and provide an estimated cost range for each activity and the entire Response Plan.*	
					Minimum	**Maximum**
Output 1: Development of the work plan and related communication documents	***NC, 10 days***				***5,000***	***6,000***
Activity 1.1: Work plan	*NC, 2 days*	-	-	-	*1,000*	*1,200*
Activity 1.2: Monitoring and evaluation plan	*NC, 2 days*	-	-	-	*1,000*	*1,200*
Activity 1.3: Impact description document (initial and final version)	*NC, 2 days*	-	-	-	*1,000*	*1,200*

Activity 1.4: Closure and Data Collection Report	*NC, 4 days*	-	-	-	*2,000*	*2,400*
Output 2: Analysis of existing circular economy initiatives and key players in Zambia	**E1, 27 days** **E2, 27 days** **NC, 27 days** **GE, 5 days**	-	-	-	***56,600***	***67,000***
Activity 2.1: Kick-off meeting for the presentation of technical assistance with the different stakeholders	*E1, 2 days* *E2, 2 days* *NC, 2 days*	*1 international trip to Zambia for E1, E2 and NC*	*Kick-off meeting, 1 day, 15 participants*	-	*9,600*	*12,000*
Activity 2.2: Analysis of the status quo of circularity in the waste sector of Zambia to define a waste sector baseline	*E1, 25 days* *E2, 25 days* *NC, 25 days* *GE, 5 days*	*4 national trips for E1, E2 and NC*	*Interviews with local players: 5 focus groups (minimum 1 and maximum 3 local players per group)* *Random sampling of waste at landfills and households*	*Local transportation for 6 days (car rental)* *Waste sampling equipment*	*47,000*	*55,000*
Output 3: Identification of the perceived value of the circular economy and of benefits, weaknesses, opportunities and challenges in Zambia's waste sector.	**E1, 26 days** **NC, 26 days**	-	-	-	***26,000***	***31,200***

Activity 3.1: analysis of perceived value	*E1, 5 days* *NC, 5 days*	-	-	-	*5,000*	*6,000*
Activity 3.2: Analysis of strengths and opportunities	*E1, 5 days* *NC, 5 days*	-	-	-	*5,000*	*6,000*
Activity 3.3: Analysis of weaknesses and barriers	*E1, 5 days* *NC, 5 days*	-	-	-	*5,000*	*6,000*
Activity 3.4: Development of an indicator matrix	*E1, 10 days* *NC, 10 days*	-	-	-	*10,000*	*12,000*
Activity 3.5: Stakeholder meeting on prioritization of waste streams	*E1, 1 day* *NC, 1 day*	-	Online Meeting	-	*1,000*	*1,200*
Output 4: Circularity analysis of one prioritized waste stream	**E1, 32 days** **E2, 32 days** **NC, 32 days**	-	-	-	***39,000***	***46,800***
Activity 4.1: Identification and analysis of technologies, concepts, policies and best practices to enhance circularity	*E1, 10 days* *E2, 10 days* *NC, 10 days*	-	-	-	*15,000*	*18,000*
Activity 4.2: Market analysis for the adoption of the identified pathways towards circularity in Zambia	*E1, 15 days* *E2, 15 days* *NC, 15 days*	-	-	-	*22,500*	*27,000*
Activity 4.3:	*E1, 1 day* *E2, 1 day*	-	Online Meeting	-	*1,500*	*1,800*

Stakeholder meeting on circularity analysis	*NC, 1 day*					
Output 5: Development of a circular economy road map and identification of a potential circularity pilot project	**E1, 33 days** **E2, 33 days** **NC, 37 days** **GE, 6 days**				***61,100***	***72,600***
Activity 5.1: Development of a road map for increased circularity in the prioritized waste stream in Zambia	*E1, 20 days* *E2, 20 days* *NC, 20 days* *GE, 2 days*				*31,000*	*37,200*
Activity 5.2: Identification of a potential circular economy project for Zambia within the prioritized waste stream	*E1, 10 days* *E2, 10 days* *NC, 10 days* *GE, 1 day*				*15,500*	18,600
Activity 5.3: Establishment of communication material	*E1, 1 days* *E2, 1 day* *NC, 5 days* *GE, 1 day*				*4,000*	*4,800*
Activity 5.4: Presentation of final results	*E1, 2 days* *E2, 2 days* *NC, 2 days*	*1 international trip to Zambia for EI, E2 and NC*	*Final Presentation meeting, 1 day, 15 participants*	-	*9,600*	*12,000*
Estimated cost range for the entire Response Plan (US$)					***187,700***	***223,600***

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 (NC)	Engineer or economist, 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 country), with a minimum of five years of experience. Experience working in Zambia. Fluency in English is required.
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. Fluency in English is required.

6 Intended contribution to the expected impact of the technical assistance

The products developed under Section 3 will allow Zambia 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 Zambia towards circularity, with defined potentialities, identification of circular opportunities and clear recommendations for governments in order to strengthen the competitiveness and sustainability of Zambia. Moreover, the selection of a specific project in Zambia will facilitate access to other financial mechanisms that can scale up the work of this technical assistance.

Zambia 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 Zambia 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 Zambia to delineate and measure progress and compliance with the draft circular economy, as well as the implementation of the NDC and SDGs signed by Zambia.

7 Relevance to NDCs and other national priorities

Within its nationally determined contributions (NDCs), Zambia has set a commitment to save between 20,000 and 38,000 Gg of CO2e. The NDC prioritizes waste as a key mitigation sector, targeting interventions in the area of sustainable agriculture and waste to energy from agricultural waste.

The Nationally Appropriate Mitigation Actions (NAMA) on Integrated Waste Management from 2014 foresee the he assessment of waste management technologies to facilitate waste recovery and recycling at disposal sites.

Furthermore, the 7th National Development Plan 2017 to 2021 prioritize the enhanced provision of adequate solid waste management services under strategy 5 with a focus on institutional and capacity development, provision of appropriate equipment and infrastructure for solid waste management and nationwide campaigns against littering.

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

The intersection between circular economy and industry 4.0 represents a great opportunity for companies, organizations and academia to develop new circular business models through the incorporation of technologies and continuing competitivity, and to reduce the environmental impact of their productive activities.

8 Links to relevant parallel activities:

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

Zambia's NAMA on Integrated Waste Management from 2014 foresees the assessment of waste management technologies to facilitate waste recovery and recycling at disposal sites. The assessments of opportunities for the reduction of open burning practices in the cities of Chongwe and Livingstone conducted in 2019 foresee roadmaps for each city to improve waste processing and recycling and avoid open burning practices.

Furthermore, Zambia has introduced a series of regulations related to waste management, including the Solid Waste Regulation and Management Act as well as the Environmental Management (Extended Producer Responsibility) Regulations in 2018.

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 Zambia. 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 Zambia.
(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 Zambia.
(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 Zambia and incorporation of new SDGs.

(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:

Imbedded into the design of the activities:	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.
Gender and co-benefits of the activities:	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. In general, the following benefits are envisioned through circular economy implementation: (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 Zambia 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. (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). (g) The promotion of the use of non-conventional renewable energies (NCRE). (h) Tools for monitoring compliance with NDC and SDGs (i) Climate change mitigation and adaptation.

11 Main national stakeholders in the implementation of the technical assistance activities:

National Stakeholder	**Function in the implementation of the technical assistance**
Zambia Environmental Management Agency	Coordination of various stakeholder and responsible for approval of treatment facilities and trials
Ministry of High Education	General Oversight and M&E
Ministry of Local Government and Housing (MLGH)	Responsible for waste management, charges and/or incentives
Ministry of Finance	Incentives to private sector in waste stream-specific circular economy map relating to climate change
Ministry of Commerce, Trade and Industry (MCTI)	Responsible in engaging with manufacturers such as recycling of waste
Ministry of Lands and Natural Resources (MLNR)	Coordination of the Implementation of NDC and SDGs
Ministry of Agriculture	Agriculture waste management strategies
Ministry of Livestock and Fisheries	Agriculture management strategies
Ministry of Water Development, Sanitation and Environmental Protection	
National Water and Sanitation Council	Waste water management strategies
Ministry of Gender	Gender mainstreaming into the waste stream-specific circular economy map relating to climate change

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	*All technical assistance should indicate relevance to SDG 13 and at*

		least one of the following targets (13.1 to 13.b).
	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:

Please tick the relevant boxes below	Primary	Secondary
☐ 1. Decision-making tools and/or information provision		X
☐ 2. Sectoral road maps and strategies	X	
☐ 3. Recommendations for legal reforms, policies and regulations		X
☐ 4. Financing facilitation		

☐ 5. Private sector engagement and market creation		X
☐ 6. Research and development of new technologies		
☐ 7. Feasibility of technology options		
☐ 8. Piloting and deployment of technologies in local conditions		X
☐ 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 (i) Zambia 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.