Technical Assistance Response Plan - Terms of Reference

Country	**Chile, Brazil, Mexico and Uruguay**
Request ID#	**2018000028**
Title	*Analysis of the current situation of the circular economy for the development of a road map for each requesting country*
NDE	*Agency for Sustainability and Climate Change, Giovanni Calderón, Director, giovanni.calderon@ascc.cl, Santiago, Chile.*
Proponent	*Ministry of the Environment, Guillermo González, Head of the Circular Economy Office, ggonzalez@mma.gob.cl and San Martin 73, Santiago, Chile.* *In cooperation with the Agency for Sustainability and Climate Change, Santiago, Chile.*

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 Latin America. 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 the requesting countries, collaborating with Designated National Entity (DNE) counterparts in the systematization of these experiences in order to develop an analysis of the current situation of the circular economy in the requesting countries, identifying and developing an updated map of key players/stakeholders, public/private initiatives, definition of territories, and description of gaps and barriers, to serve as input for the development of a general, sectoral and/or process-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 buisinesses, innovation and technological transfer, generate quality employment and combat climate change in Latin America, while complying with their nationally determined contributions (NDC) and sustainable development goals (SDGs), enabling requesting countries to become leaders in the field of circular economy.

Agreement:

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

National Designated Entity (NDE) to the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism

Name: Giovanni O. Calderón Bassi
Title: Agency for Sustainability and Climate Change, Executive Director (Chile)
Date:
Signature:

Name: María Amparo Martínez Arroyo
Title: National Institute of Ecology and Climate Change, Director of Climate Change (Mexico)
Date:

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Name: Márcio Rojas da Cruz
Title: Ministry of Science, Technology, Innovation and Communications (MCTIC), Coordinator of Global Climate Change (Brazil)
Date:
Signature:

Name: Ignacio Lorenzo/Jorge Castro
Title: Director of Climate Change, Climate Change Division/Alternate Focal Point. Ministry for Social Housing, Territory Planning and Environmental Affairs of Uruguay
Date:
Signature:

Climate Technology Centre and Network (CTCN)

Name: Jukka Uosukainen
Title: Director of CTCN
Date:
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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 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] Latin America, owing to its wealth in natural resources and the limited industrialization of its economy, has played a fundamental role in the current linear model, accounting for 44 per cent of the world's copper, 49 per cent of silver, 65 per cent of lithium, 20 per cent of petroleum reserves, 33 per cent of freshwater reserves and 20 per cent of native forests. This has led the region to specialize in economic activities based on the extraction 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, Latin America generates 160 million tons of solid waste per year, at an average per capita of 1.1 kg per day, of which less than 3 per cent is reused or recycled, and it is expected that by 2030 the region's population will grow by 17 per cent, reaching 705 million, increasing its per capita waste generation by 45 per cent, to reach 1.6 kg per day.[4] While Latin America only produces 11 per cent of GHG emissions, it is one of the regions that is most vulnerable to climate change, which could come to represent a cost of up to US $100,000 million per year by 2050, mainly owing to natural disasters,[5] and leading up to 17 million people to migrate internally in the region.[6]

The circular economy (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.[7] 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,[8] and generating up to 6 million new jobs by 2030 worldwide,[9] thus complying in particular with Sustainable Development Goals (SDGs) 9, 12 and 13, as well as the nationally determined contributions (NDC) agreed to by each participating country, representing a great opportunity for sustainable development in Latin America.

[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] What a Waste, a Global Review of Solid Waste Management, The World Bank, 2012
[5] The Climate and Development Challenge for Latin America and the Caribbean, ECLAC, IDB and WWF, 2014
[6] Groundswell: Preparing for Internal Climate Migration, The World Bank Group, 2018
[7] Resource Efficiency: Potential and Economic Implications, IRP, 2017
[8] Waste to Wealth: The Circular Economy Advantage, Peter Lacy, Jakob Rutqvist, 2015
[9] World Employment Social Outlook 2018: Greening with Jobs, ILO, 2018

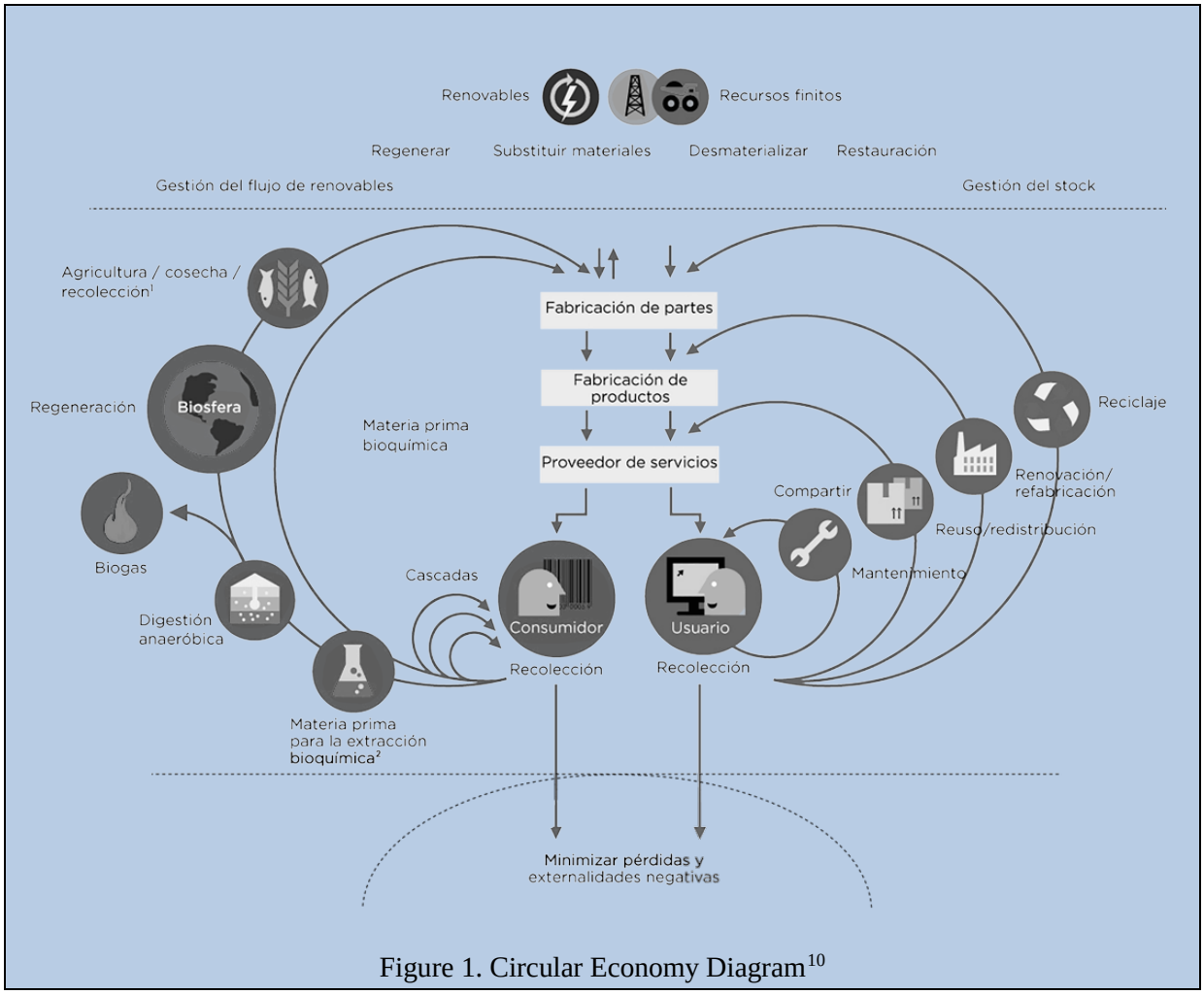

Figure 1. Circular Economy Diagram[10]

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

2. Problem statement

The problem to be addressed is the lack and asymmetry of information, as well as the coordination failures that exist in the participating countries 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. The requesting countries have implemented public policies and private initiatives to advance in the circular economy or for the integral management of waste, characterized mainly by regulations and programmes that have established a framework for waste management, extended responsibility to the producer and promoted recycling to reduce the generation of waste and promote its recovery and reuse in order to protect the health of their citizens and the environment. However, these initiatives have not been framed within a national strategy for a circular economy that systematizes these experiences, defines objectives and establishes clear goals, 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 for climate change, creating performance indicators that facilitate monitoring compliance with the NDC, the SDGs (9, 12 and 13) and the commitments of each requesting country under the Paris Agreement adopted by the Conference of the Parties (COP) to the Framework Convention on Climate Change.

3. Logical Framework for the CTCN Technical Assistance:

	Month[12]											
***Goal**: Development of a road map[11] for the circular economy in Brazil, Chile, Mexico and Uruguay*												
***Outcome**: Participating countries, which are aware of the economic, social and environmental benefits of the circular economy but have no specific strategies for its implementation, may develop a road map in each country for the promotion and development of a general, 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.*												
	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.* **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).												

[11] Road maps will be at the national level and will be determined by each participating country; they may have a general scope of the entire economy, or sectoral or process-specific scopes.

[12] The project timeline can be adjusted according to the level of development of the participating country.

Deliverable 1:												
1.1 Implementation plan	X											
1.2 Monitoring and evaluation plan	X											
1.3 Impact description document (initial and final version)	X											X
1.4 Closure and Data Collection Report												X
Output 2: Analysis of key players and existing circular economy initiatives in the participating country												
Activity 2.1: Initial meeting for the presentation of technical assistance with the different stakeholders of the participating countries. Present the technical assistance plan in order to gather information from the different participating countries and tailor it to the requirements and conditions of each country.												
Activity 2.2: Exploration and analysis of key players and initiatives 1. Prepare an updated map of players and processes of the requesting country, through the identification of key institutions, agencies, existing initiatives, policy instruments, institutional frameworks and public-private partnerships, as well as local and national initiatives for a circular economy, through the revision of the legal framework of expert government players in the field, as well as through consultations and interviews with organizations that are leading the topic in each country (ministries, government agencies, businesses, associations, universities, groups and entrepreneurs) and international organizations that can obtain information on companies and groupings that are developing circular economy models in each participating country (mainly the Ellen MacArthur Foundation, World Economic Forum, Circle Economy, Accenture, Deloitte, UNIDO, ILO, IDB, ECLAC, UNEP, IRP, Sustainia and Circular Economy Club), to define a conceptual framework for the mapping of players and consultations. 2. Prepare a diagram or concept map resulting from the identification of stakeholders and their institutional arrangements (e.g. partnership agreements), as well as existing public, private and inter-institutional information platforms. 3. Identify stakeholders and other interested parties. 4. Revise the organic statutes of governmental public players and academia. 5. Share objectives, methodologies and work plan for the development of the road map. 6. Share experiences. 7. Assess potential commitments to participate. 8. Identify and classify potential players for the road map. 9. Ideally group them into the following categories: (a) Government/Public Sector; (b) Companies; (c) Civil Society Organizations; (d) Academia; and (e) Enterprises. 10. Define one or more economic activities according to national priorities. The following categories have been identified as relevant: (a) Manufacturing (Technical Cycles); (b) Agriculture and Food; (c) Natural												

Resources (Mining, Forestry and Fisheries); (d) Construction, Transport, Logistics and Retail; (e) IT and Smart City; and (f) Energy. 11. Intersect players with economic activities to facilitate identification on the map. 12. Identify and incorporate the NDC of each participating country and their commitments to the SDGs, in particular SDGs 9, 12 and 13. 13. Identify commitments and targets in line with each country's national development plan and national legislation. 14. Compile information relating to activities 3, 4, 5 and 6. 15. Develop draft deliverables for revision, correcting and processing final versions. 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. The interviews will be carried out, distinguishing between the five (5) categories defined in Item 5. In total, a minimum of five and a maximum of 15 players per participating country 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 Designated National Entity (DNE) of each country 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.[13]												
Deliverable 2: 2.1 Meeting reports. A total of four reports will be delivered, corresponding to the meetings in Brazil, Chile, Mexico and Uruguay. 2.2 Evaluation report to identify and define the key players to take part in the development of the circular economy road map in each participating country, describing their experience, capabilities and commitments. The report should emphasize the degree of adoption of the circular economy in the requesting country, including existing sectoral road maps. The report must contain information relating to the activities indicated in paragraph 2.2.		X			X							

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

Output 3: Identification of the perceived value of the circular economy and of benefits, weaknesses, opportunities and challenges in each participating country.												
Activity 3.1: Analysis of the perceived benefits Analysis of the benefits recognized in the circular economy by the different key players of the requesting country identified in Output 2. Differentiation between the concept of 'waste' according to the legal definition in each country and products that still have useful life and value. Define the waste and the products or by-products that still have useful life and value for each economic activity established in Item 10 of Activity 2.2 in the context of their economic, social and environmental benefit. The benefit of the circular economy recognized by the players involved will also be analysed. Incorporate the NDC of each participating country and their 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 the requesting country in the adoption of a general, sectoral or specific circular economy process as agreed with the Designated National Entity (DNE), 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 each requesting country (h) Mapping of the main economic activities of each participating country that may be most impacted by the circular economy. The scope and methodology of the assessment must be previously approved by each country's DNE.												
Activity 3.3: Analysis of weaknesses and barriers Analysis of the weaknesses and barriers of the requesting country in the adoption of a general, sectoral or specific circular economy process as agreed with the Designated National Entity (DNE), 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 each country's DNE.												
Activity 3.4: Development of an indicator matrix Generation of a matrix of transparent and comparable circular economy indicators and raising of the baselines for the countries, comparing them with best international practices.												
Deliverables 3: 3.1 Report presenting a map of the main economic activities of each participating country that may be most impacted by the circular economy and the quantification of the economic, social and environmental benefits, and their impact on intended nationally determined contributions (INDC) and SDGs. It will also include an analysis of the value recognized in the circular economy by the different key players of the requesting country 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.				X	X X	X						
Output 4: Compilation of international experiences												
Activity 4.1: Benchmarking of international success stories Review and identification of successful cases of general, sectoral and specific circular economy processes, similar to those identified by the DNEs, in countries that stand out for their adoption (particularly the experiences of Finland, Denmark, France, Spain, Italy, Canada, Portugal, Scotland, Luxembourg, Japan, China, Sweden, Holland and Slovenia, and the European Commission's circular economy package).												
Activity 4.2: Analysis of the conditions and opportunities of international cases Analysis of the conditions and opportunities that have allowed circular models to be successful in these countries and identification of the main challenges and barriers. Identification of the main results and benefits of circular economy projects and their intersection with the compliance with the NDC and SDGs endorsed by each country. Identification of lessons learned, and what policies, incentives or conditions were developed for a successful implementation of the circular model.												
Activity 4.3: Designing a comparative matrix of experiences Analysis of regional experiences (including participating countries) and international experiences so as to visualize potential South-South exchanges and cooperation initiatives to be used in Output 6.												
Deliverables 4: 4.1 Report presenting an overview of the main cases of countries that have been successful in implementing a general, sectoral or specific circular economy model.						X	X					

4.2 Report presenting the lessons learned such as what the main barriers, challenges and opportunities were, and what policies, incentives or conditions were developed for a successful implementation of the circular model. 4.3 Report with a comparative matrix of experiences.							X					
Output 5: Mapping of cases of successful implementation of industry 4.0 for the circular economy at the international level and adoption of certain practices at the local level taking into account technological developments in these countries.												
Activity 5.1: Analysis of technologies, benefits and opportunities of the fourth industrial revolution. Evaluation of the situation of each participating country with respect to its position within the framework of the fourth industrial revolution and in particular the situation and stage of development in which the relevant players identified in Output 2 find themselves. General analysis of the level of development of industry 4.0 in each participating country and analysis of the main technologies of the fourth industrial revolution.												
Activity 5.2: Analysis of the potential benefit of applying industry 4.0 to circular economy models Identification of circular economic activities defined in Output 2 that can be enhanced with the incorporation of technologies specific to industry 4.0, allowing them to make their production processes and services more efficient, optimize the use of resources and energy, and develop new business models.												
Deliverables 5: 5.1 Report presenting a general analysis of the level of development of industry 4.0 in each participating country, and of the main technologies of the fourth industrial revolution (big data, 3D printing, advanced manufacturing, cloud computing, the Internet of things, artificial intelligence, virtual/augmented reality, robotics, sensors and blockchain). 5.2 Report presenting the benefits of strengthening the players and initiatives identified in Output 2 with new disruptive circular business models (*re-manufacturing, circular design, circular supplies, resource recovery, lifecycle extension, shared platforms and product-as-a-service*) with the technologies identified in Activity 5.1.								X		X		
Output 6: Identification of potential circular economy projects for each requesting country prioritizing specific territories												
Activity 6.1: Definition of pilot projects In order to develop a general, sectoral or specific circular economy strategy prioritized by the DNE, at least one pilot project will be defined for the road map to be supported by the CTCN. To that end, the following steps must be followed: (a) Define at least the economic activities and/or productive process to develop a circular strategy. (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) Identify existing productive and technological structures in order to create partnerships. (e) Identify local public and private bodies that are already developing or are interested in developing the pilot circular model. (f) Develop and establish performance indicators to track and measure progress and compliance of the pilot project. The identification of the productive processes and/or economic activities to be considered in the pilot projects will be defined by the DNE of each participating country.												
Activity 6.2. Presentation of the results to the different requesting countries Present the results and consult generally with DNEs and requesting organizations of the four participating countries.												
Activity 6.3. Organization of a final workshop to present the results of the work of the technical assistance in the requesting countries The workshop will be organized as part of an event or forum related to the concept of the circular economy in the region. This workshop will also define the creation of a regional platform for the circular economy in Latin America, as well as alternatives for South-South cooperation. During the workshop, each country will present its case study and a discussion session will be organized on: • Potential synergies at the regional level; • The possibility of following up on the work through a regional platform on circular economy issues that can disseminate the results of technical assistance to other countries.												
Deliverables 6: 6.1. Evaluation report to identify and define potential projects agreed with the DNE in each participating country, describing their potential benefits in economic, social and environmental terms. 6.2 Development of a draft road map for circular economy implementation for each country. 6.3 Material for the final workshop presenting the results to the DNEs and the requesting organizations and a report of the meeting. A draft MoU for the creation of a regional platform for circular economy and alternatives for South-South cooperation. 6.4 Material for the presentation of results in an event or forum and list of participants. Report on the success of the event.								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 Center (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***				***10,000***	***12,200***
Activity 1.1: Work plan	*NC, 2 days*	-	-	-	*2,000*	*2,400*
Activity 1.2: Monitoring and evaluation plan	*NC, 2 days*	-	-	-	*2,000*	*2,400*
Activity 1.3: Impact description document (initial and final version)	*NC, 2 days*	-	-	-	*2,000*	*2,400*

Activity 1.4: Closure and Data Collection Report	*NC, 4 days*	-	-	-	*4,000*	*5,000*
Output 2: Analysis of key players and circular economy initiatives in the participating country	**E1, 38 days** **NC, 38 days** **GE, 15 days**				***50,000***	***59,800***
Activity 2.1: Introductory meeting	*E1, 8 days* *NC, 8 days*	*1 trip to Brazil* *1 trip to Brazil* *1 trip to Mexico* *1 trip to Uruguay*			*13,000*	*15,000*
Activity 2.2: Exploration and analysis of key players and initiatives	*E1, 30 days* *NC, 30 days* *GE, 15 days*	*4 national trips*	*Interviews with local players: 5 focus groups (minimum 1 and maximum 3 local players per group)*	*Local transportation for 6 days (car rental)*	*37,000*	*44,800*
Output 3: Identification of the value of the circular economy and definition of benefits, opportunities and challenges in each participating country	**E1, 25 days** **NC, 25 days**	-	-	-	***18,200***	***22,750***
Activity 3.1: analysis of perceived value	*E1, 5 days* *NC, 5 days*	-			*3,640*	*4,550*
Activity 3.2: Analysis of strengths and opportunities	*E1, 5 days* *NC, 5 days*				*3,640*	*4,550*
Activity 3.3: Analysis of weaknesses and barriers	*E1, 5 days* *NC, 5 days*				*3,640*	*4,550*

Activity 3.4: Development of an indicator matrix	*E1, 10 days* *NC, 10 days*				*7,280*	*9,100*
Output 4: Compilation of international experiences	**E1, 20 days** **IC, 20 days**				***15,550***	***18,950***
Activity 4.1: Benchmarking of international cases	*E1, 5 days* *IC, 5 days*				*4,025*	*4,875*
Activity 4.2: Analysis of the conditions and opportunities of international cases	*E1, 5 days* *IC, 5 days*				*4,025*	*4,875*
Activity 4.3: Designing a comparative matrix of experiences	*E1, 10 days* *IC, 10 days*				*7,500*	*9,200*
Output 5: Mapping of cases of successful implementation of industry 4.0 for the circular economy at the international level and adoption of certain practices at the local level taking into account technological developments in these countries	**E2, 35 days** **IC, 35 days** **GE, 10 days**				***19,580***	***25,950***
Activity 5.1: Analysis of technologies, benefits and	*E2, 15 days* *IC, 15 days*				*8,560*	*12,200*

opportunities of the fourth industrial revolution						
Activity 5.2: Analysis of the potential benefit of applying industry 4.0 to the circular economy	*E2, 20 days* *IC, 20 days*				*11,020*	*13,750*
Output 6: Identification of potential circular economy projects for each requesting country prioritizing specific territories	**E1, 30 days** **E2, 30 days** **NC, 30 days**				***35,050***	***59,850***
Activity 6.1: Definition of pilot projects	*E1, 20 days* *E2, 20 days* *NC, 10 days*	*4 national trips*		*Local transportation for 6 days (car rental)*	*35,350*	*41,750*
Activity 6.2: Presentation of the results to the different requesting countries	*E1, 5 days* *E2, 5 days* *NC, 10 days*				*6,800*	*8,600*
Activity 6.3: Organization of a final workshop to present the results of the work of the technical assistance in the requesting countries	*E1, 5 days* *E2, 5 days* *NC, 10 days*	*1 international trip*			*7,600*	*9,500*
Estimated cost range for the entire Response Plan (US$)					***163,080***	***199,500***

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. Fluent Spanish (Portuguese in the case of Brazil) and English are required.
Expert 2 (E2)	Industrial engineer or mechanical engineer, M.Sc., with experience in the design and development of road maps, 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. Fluent Spanish (Portuguese in the case of Brazil) and English are 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 each country), with a minimum of five years of experience. Fluent Spanish (Portuguese in the case of Brazil) and English are required.
International consultant (IC)	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 each country), with a minimum of five years of experience. Fluent Spanish (Portuguese in the case of Brazil) and English are 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. Fluent Spanish (Portuguese in the case of Brazil) and English are required.

6 Intended contribution to the expected impact of the technical assistance

The products developed under Item 3 will allow the requesting countries 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 and an international network that allows, in a next stage, to further the transition of the country towards a circular model, with defined potentialities, identification of circular opportunities and clear recommendations for governments in order to strengthen the competitiveness and sustainability of the country. Moreover, the selection of specific projects in each country will facilitate access to other financial mechanisms that can scale up the work of this technical assistance.

The countries will obtain an analysis of their 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 the requesting countries to the CTCN, this technical assistance (TA) will enable participating countries 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 countries to delineate and measure progress and compliance with the draft circular economy, as well as the implementation of the NDC and SDGs signed by each participating country.

7 Relevance to NDCs and other national priorities

All requesting countries have commitments to nationally determined contributions (NDC): Chile, a 30 per cent reduction of emissions per unit of GDP by 2030, and varying between 35 and 45 per cent if international contributions are received; Brazil, a reduction of 37 per cent by 2025 compared to 2005 levels and an indicative contribution of 43 per cent by 2030 (also compared to 2005 levels); Mexico, an unconditional reduction of 22 percent in its GHG emissions by 2030 and a conditional reduction of 36 per cent by 2030, compared to a BAU (business as usual) scenario; and Uruguay's emission reduction targets for 2030 by sector comparable to 1990 levels.

Furthermore, all participating countries agree that productive/industrial processes, energy and waste are priority sectors for mitigation, and are sectors where the circular economy has the greatest impact. This is of great 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 the requesting countries 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.

Finally, all the participating countries have nationally appropriate mitigation actions (NAMAs), that can serve to better link this TA with the different NDC as part of the voluntary commitment to reduce greenhouse gas emissions.

8 Links to relevant parallel activities:

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

Chile has made great strides in regard to climate change for more than 15 years, developing the first NAMA recognized at world level, and for over five years has fostered circular undertakings with a national and international impact. These initiatives have enabled organizations such as the Production Development Corporation (CORFO) to develop national support plans for circular economy projects such as the circular economy innovation programme, launched in 2018, and the incorporation of the circular model as one of the three axes of its new development model. The Ministry of the Environment has supported CORFO in these programmes and also promotes policies such as the Extended Producer Responsibility (EPR) Law. All these efforts will be of great importance, particularly now that Chile will be the organizer of Conference of Parties (COP 25) to the UNFCCC.

Uruguay has also led the circular economy by developing the first Forum on Circular Economy for Latin America (FCE), which has already been replicated in other countries and is expected to have repercussions over time. This TA will be a great contribution to reinforcing initiatives such as Circular Opportunities organized by Uruguay's National Development Agency (ANDE), the PNTPC circular economy project, the Biovalor project and the new Biovalor project to be presented in GEF-7 (Global Environment Facility.

Mexico and Brazil have also developed circular economy initiatives through public and private initiatives. Mexico has done so through the Ministry of Environment and Natural Resources (SEMARNAT). Brazil has been mainly led by the presence of the Ellen MacArthur Foundation in the country, articulated by the CE100 initiative that brings together companies with circular business models, universities and organizations, as well as investments by the Brazilian Funding Agency for Studies and Projets (FINEP), an innovation agency of the federal government.

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 general, sectoral or specific circular economy road maps in each requesting country. 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 the requesting country.
(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, 5 and 6 by participating countries and those that may join.
(e) Fulfilment of commitments taken on by public and private players for the implementation of actions that enable the development of a circular economy through the promotion of industry 4.0 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 each country.
(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 each requesting country and incorporation of new SDGs.
(i) Seek opportunities for South-South cooperation from lessons learned.

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 activities 2.1 and 2.2. 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.
Intended 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 labor 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 Latin America 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**
Climate Change and Sustainability Agency (Chile)	It will provide information on the implementation of the policy of promotion of clean production (developed through incentives that encourage the use of clean production practices through the incorporation of clean technologies in production processes, within a framework of public-private dialogue and participation) and climate change policies. Together with the Ministry of the Environment, it will be in charge of organizing COP 25 in Chile in January 2020.
Ministry of the Environment, Circular Economy Office (Chile)	In charge of proposing circular economy and climate change policies and coordinating the country's ministries and public entities regarding climate change, it will provide information on: international negotiation, capacity building, adaptation, GHG mitigation and inventories and institutional

	arrangements. Together with the Agency for Sustainability and Climate Change, it will be in charge of organizing COP 25 in Chile in January 2020.
Production Development Corporation – CORFO (Chile)	It will provide information on the capabilities and opportunities for entrepreneurs and small businesses in Chile. CORFO creates strategic programmes to improve the competitiveness of the Chilean economy, through strong cooperation between companies, public institutions, science and technology organizations and community leaders. This is to identify and propose solutions to the problems that limit the growth and innovation of the productive sectors in Chile. CORFO has defined its new strategy in three pillars: circular economy, digital transformation and decentralization.
General Coordination of Climate, Ministry of Science, Technology, Innovation and Communication (Brazil)	As the highest body of the Federal Administration of Brazil responsible for the development and implementation of the national science, technology and innovation policy, it will provide information on: international negotiation, capacity building, adaptation, GHG mitigation and inventories and institutional arrangements.
National Institute of Ecology and Climate Change - INECC (Mexico)	In charge of generating, integrating and distributing knowledge and information through applied scientific research and capacity building to support environmental policy development and decision-making that promotes sustainable development in Mexico, it will provide information on: international negotiation, capacity building, adaptation, GHG mitigation and inventories and institutional arrangements.
Ministry of Environment and Natural Resources - SEMARNAT (Mexico)	As the office of the federal executive power in charge of the guarantee of sustainable development and the environmental balance of the country, it will provide information on: international negotiation, capacity building, adaptation, GHG mitigation and inventories and institutional arrangements.
Climate Change Division - Ministry for Social Housing, Territory Planning and Environmental Affairs of Uruguay (MVOTMA)	In charge of coordinating the implementation of the National Climate Change Policy and the NDC, as well as the national implementation of the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, it oversees the implementation of the Montreal Protocol

	and will provide information on: international negotiation, capacity building, adaptation, GHG mitigation and inventories and institutional arrangements. It also acts as a National Designated Entity (NDE) before the CTCN. It will define, together with other public players, robust activities or processes that develop a general, sectorial or specific circular economy road map within the context of support of the CTCN. Other public players that may be convened by the Climate Change Division during the process of identification and development of the road map: National Directorate for the Environment of the MVOTMA; Ministry of Industry, Energy and Mining; Directorate of Planning of the Office of Planning and Budget of the Presidency; National Climate Change Response System; and National System of Competitiveness and Productive Transformation.
Entrepreneurs with circular models, Trade Associations, Associations of Entrepreneurs and University Technology Centers in each requesting country.	To provide sectorial and entrepreneurship ecosystem information in each requesting country.

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 technical assistance (TA) is to promote the development of circular models that incorporate industry 4.0 technologies and to remove the barriers that hinder the incorporation of requesting countries into the fourth industrial revolution.
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.
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 the (i) NDE 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.