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## TERMS OF REFERENCE (TOR)

**Title: Assessment of the current status of the circular economy for developing a roadmap in several countries**

CTCN request reference number: 2019000038

Country: Cuba, Dominican Republic, Ecuador, El Salvador and Paraguay

### **1 BACKGROUND INFORMATION**

The Climate Technology Centre and Network (CTCN) is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism and hosted by the United Nations Environment Programme (UN Environment) in collaboration with the United Nations Industrial Development Organization (UNIDO) and supported by 11 partner institutions with expertise in climate technologies. The mission of the CTCN is to promote accelerated deployment and transfer of climate technologies at the request of developing countries for energy-efficient, low-carbon and climate-resilient development.

These requests for Technical Assistance (TA) are being submitted to the CTCN by the National Designated Entity (NDE) of the respective country. The scope of services under these Terms of Reference shall be executed based on a restricted solicitation process. By mandate, only accepted Members of the CTC Network are eligible to execute the required services to implement the response. Should the bidder partner with another institution to deliver a minor part of the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

**In case you are not a CTCN network member yet, you may bid for implementation of the technical assistance, subject to the condition that you submit your completed application for CTC Network membership before the bid closure and the same is acknowledged by the CTCN. Furthermore, the contract award – should your bid be selected – is conditional to your network membership application having been successfully approved by the Director of CTCN. Should the bidder partner with another institution to deliver the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.**

The maximum budget for this contract is USD 250,000.

**It is mandatory for the implementer(s) to allocate at least 1% of the budget to integrate a gender-approach to the activities.** Please refer to the CTCN Gender Mainstreaming Tool for Response Plan Development for guidance at <https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development>.



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### 2 CONTEXT OF THE ASSIGNMENT

Circular economy is an economical and industrial model, regenerative by design, which aims at recovering and re-using the materials that have already been processed, thus protecting natural resources from over exploitation. This is an issue that is particularly sensitive in Latin America. The objective is to keep scarce, valuable resources in circulation for longer periods of time, promoting recycling and avoiding loss of materials. Achieving these objectives requires the inclusion of processes such as reuse, re-design, reutilisation, recycling, remanufacturing and disruptive business models like product-as-service and extended life-cycle. To mitigate this challenge the Governments of Cuba, Dominican Republic, Ecuador, El Salvador and Paraguay approached the CTCN for a technical assistance.

In order to address these challenges the CTCN has developed these Terms of Reference, outlining an intervention that will produce the outputs listed below and that will be implemented within a period of up to 12 months. The overarching goal is to assess the current status of the integration of the concept of circular economy of the five requesting countries and to develop a draft roadmap.

The analysis shall identify key players, stakeholders, private/public initiatives, geographical areas as well as opportunities and barriers. The approach has to incorporate and focus on the climate benefits originating from a circular economy model and identify the advantages that circularity would produce towards the implementation of the National Determined Contributions (NDCs)<sup>1</sup> and the achievement of the goals of the Paris Agreement.

The consultant assignment will consist of the following outputs:

- Development of implementation planning and communication documents
- Diagnosis of the key stakeholders and current initiatives related to circular economy in each country
- Identification of the circular economy value and definition of benefits, weaknesses, opportunities and challenges in each country
- Review of international experiences
- Mapping of successful cases of application of industry 4.0 which benefit circular economy at international level and adoption of practices at local level taking into account technological development in these countries.
- Identification of potential projects in circular economy for each participating country prioritizing specific geographical areas.

The specific activities are detailed in section 3

The full text of the request submitted to the CTCN can be found here: <https://www.ctc-n.org/technical-assistance/projects/assessment-current-status-circular-economy-developing-roadmap-0> .

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<sup>1</sup> Results from Technology Needs Assessments (TNA) and Technology Actions Plans (TAPs) should also be taken into consideration



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The Response plan developed in collaboration with the five countries involved can be found here: <https://www.ctc-n.org/content/assessment-current-status-circular-economy-developing-roadmap-several-countries>

### 3 OBJECTIVE OF THE CONTRACT

The objective of this contract is to assist in the effective development of country-specific roadmaps on circular economy for Cuba, Dominican Republic, Ecuador, El Salvador and Paraguay. Based on the needs of each country, the scope of the roadmaps may be general, sector or process-focused. The Roadmaps should be generated as the result of a participative process that will gather information about:

- key stakeholders and current initiatives;
- the circular economy value and definition of benefits, weaknesses, opportunities and challenges in each country;
- the review of international experiences successful cases of application of industry 4.0 in circular economy processes;
- and will identify potential projects that can be prepared and scaled-up as a follow-up of this technical assistance.

#### **Scope and activities of the proposed contracted services**

Once the contract is signed, the CTCN will organize a kick-off call among all relevant parties involved in the request, to introduce the Contractor to the NDE and Proponent. This kick-off virtual meeting shall present the activities, their timeline and clarify roles and responsibilities. Due to the different technology and sectorial priorities among the five beneficiaries of the circular economy analysis, NDEs may choose to apply some degree of flexibility in the outputs' budget allocation<sup>2</sup> so to tailor the technical assistance resources to the specific country priorities and needs.

The Contractor shall undertake the following activities:

#### **Output 1: Development of implementation planning and periodical reporting documents**

**Activity 1:** Preparing the consultancy work plan, periodical progress reports and final reports.

**Deliverable 1.1:** A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organizations and detailed budget to implement the CTCN response plan. The detailed work plan and budget must be based directly on the CTCN response plan included in the tender package, as per CTCN standard procedure in all technical assistances (In English). The response plan framework represents the basic common structure of the work. It may be updated in terms of activities description and budget distribution among the outputs in order to reflect specific countries' priorities, needs and depending on their current level of circular economy development.

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<sup>2</sup> within the available financial resources already established for this technical assistance as specified in chapter 1



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**Deliverable 1.2:** Based on the work plan, a monitoring and evaluation plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (in English).

**Deliverable 1.3:** A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided) (in English)

**Deliverable 1.4:** A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided) (in English)

### **Output 2: Diagnosis of key stakeholders and current initiatives related to circular economy in each country**

**Activity 2.1:** Kick-off meeting to present the technical assistance to the different stakeholders of the participating countries.<sup>3</sup>

Present the technical assistance plan (Deliverable 1.1) to gather information from the participating countries in order to adapt it to the requirements and current situation of each country.

**Activity 2.2:** Exploration and diagnosis of stakeholders and initiatives

Create the updated map of actors and processes of each participating country. This will be done by identifying key actors, existing initiatives, policy instruments, institutional framework and public-private partnerships, as well as local and national circular economy initiatives via consultations and interviews with organizations that are leading the issue in each country – ministries, government agencies, companies, associations, universities, groups and entrepreneurs – and international organizations that may have information on companies and groups that are developing circular models in each participating country (i.e. Ellen MacArthur Foundation, World Economic Forum, Circle Economy, Accenture, Deloitte, IDB, UNIDO, ILO, ECLAC, UNEP, IRP, Sustainia and Circular Economy Club). The updated stakeholder map and processes will be used for:

1. Defining a conceptual framework of the actors and consultation mapping.
2. Creating a diagram or conceptual framework as a result of the identification of the actors involved and their institutional arrangements (i.e. collaboration agreements), and creating public, private and inter-institutional platforms of existing information.
3. Identifying involved or interested actors.

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<sup>3</sup> Five meetings are foreseen in this activity, one per each country



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4. Reviewing the organic statutes of public government actors and academia.
5. Sharing objectives, methodologies and the work plan for the development of the roadmap.
6. Knowing their experiences.
7. Evaluating potential participation commitments.
8. Identifying and classifying potential actors of the Roadmap.
9. Ideally grouping them into the following categories: a) Government / Public Sector b) Companies c) Civil Society Organizations d) Academy e) Entrepreneurship.
10. Defining 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, Transportation, Logistics and Retail e) IT and Smart City f) Energy
11. Intersecting actors with economic activities to facilitate identification on the map
12. Identifying and incorporating the NDCs of each participating country and their commitments regarding the Sustainable Development Goals (SDGs), in particular SDGs 9, 12 and 13.
13. Identifying commitments and goals in accordance with the National Development Plans and the national legislation of each country
14. Compiling information related to activities 3, 4, 5 and 6.
15. Drafting deliverables for review, corrections and preparation of final versions.

The level of experience, skills, level of knowledge, networks, interest, strengths/weaknesses and commitment to the development of a circular economy will be identified by carrying out consultations and interviews with potential participants of the roadmap.

Interviews will be conducted by differentiating between the five (5) categories defined in point 9. In total, a minimum of 5 and a maximum of 15 actors will be interviewed per participating country, prioritizing actors that are recognized by national and international organizations as leaders in circular economy. The definition of actors and processes for consultation and/or to be included in the diagnosis for the preparation of the roadmaps must have the approval of the National Designated Entity (NDE) of each country. NDEs will support the implementing organization in the identification of those actors and stakeholders and to facilitate the organization of stakeholders meetings and interviews.

During this activity, the gender mainstreaming factor should be transversally incorporated. This circular economy analysis should also assess economic, social and environmental implications produced by men and women at disaggregated level.

Due to CTCN's unrestricted commitment to gender equality, the active inclusion of women in each phase must be considered throughout this process, ensuring that their participation is present at all levels of



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decision. Dignity and respect for women must also be considered, complying with SDG 5 on gender equality<sup>4</sup>.

**Deliverable 2.1:** In-country data collection reports, detailing out meetings and outcomes. In total, 5 reports will be delivered corresponding to the meetings in Cuba, Dominican Republic, Ecuador, El Salvador and Paraguay.

**Deliverable 2.2:** Evaluation report that identifies and defines the key players that will participate in the development of the circular economy roadmap in each participating country, describing their experience, capacity and commitment. This report should emphasize the degree of adoption of circular economy in the requesting country, including existing sectorial roadmaps. This report must contain the information related to activities indicated in section 2.2.

### **Output 3: Identification of the circular economy value and definition of benefits, weaknesses, opportunities and challenges in each country**

Prior to conducting this output, consultation with NDEs will be made to ensure validation on the scope of the activities.

#### **Activity 3.1: Diagnosis of perceived benefits**

Analysis of the circular economy benefits which are recognized by the key actors identified in Output 2. Differentiation between the concept of "waste" – according to the legal definition in each country –, and the products that still have shelf life and value. Frame waste and products or sub-products which still have shelf life and value for each economic activity established in point 10 of activity 2.2 within the context of its environmental, social and economic benefits. The benefit of circular economy recognized by involved actors will also be analyzed.

Incorporate the NDCs of each participating country and their commitments to the UN Sustainable Development Goals, in particular SDGs 9, 12 and 13 in this first stage.

#### **Activity 3.2: Diagnosis of strengths and opportunities**

Analysis of strengths and opportunities that participating countries have when it comes to the adoption of a general, sectorial or specific circular economy process agreed with the NDE, among others:

- a) Industrial, innovative and technological infrastructure and capacities
- b) Policies or initiatives related to recycling, climate change and circular economy
- c) Governance and leadership

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<sup>4</sup> CTCN Gender Mainstreaming Tool for Response Plan Development: <https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development>



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- d) Level of incorporation of Non- Conventional Renewable Energies, NCRE (percentage of energy matrix)
- e) Alignment of public and private agendas (commitment of government, companies, organizations, academia and society)
- f) Job creation
- g) Impact on NDCs and SDGs in each participating country
- h) Identification of the map of the main economic activities of each participating country that might be most impacted by circular economy

The scope and methodology of the diagnosis must be previously approved by the NDE of each country.

### **Activity 3.3: Diagnosis of weaknesses and barriers**

Analysis of weaknesses and barriers that the participating country presents in the adoption of a general, sectorial or specific circular economy process agreed with the NDE, in particular the following barriers:

- a) Regulatory
- b) Market
- c) Cultural
- d) Entrepreneurship support
- e) Financing and capital
- f) Industrial and technological
- g) Recovery of products or materials (logistics, collection, repair and remanufacturing)

The scope and methodology of the diagnosis must be previously approved by the NDE of each country.

### **Activity 3.4: Development of an indicators' matrix**

Generate a transparent and comparable circular economy indicator matrix and prepare the baseline for each country, comparing them with the best international practices.

**Deliverable 3.1:** Report presenting a map of the main economic activities of each participating country that might be most impacted by circular economy and the quantification of economic, social and environmental benefits, and their impact on INDCs and SDGs. It will also include an analysis of the value recognized in circular economy by the different key actors identified in Output 2.

**Deliverable 3.2:** Report of the strengths and opportunities identified

**Deliverable 3.3:** Report of the weaknesses and barriers identified

**Deliverable 3.4:** Report where the indicator matrix is presented

## **Output 4: Review of international experiences**

### **Activity 4.1:** Benchmarking of international success stories

Review and identification of success cases of general, sectorial and specific circular economy processes, similar to those identified by NDEs, in countries that stand out for their adoption – specifically



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experiences from EU countries, , and the Circular Economy Package of the European Commission; Japan, China.

### **Activity 4.2: Diagnosis of the conditions and opportunities of international cases**

Analyze the conditions and opportunities that have allowed the success of circular models in these countries and identify the main challenges and barriers. Identify the main results and benefits of circular economy projects and their intersection with the fulfillment of the NDCs and SDGs agreed by each country. Identify lessons learned, and the policies, incentives or conditions that were developed for a successful application of the circular model.

### **Activity 4.3: Design of a comparative matrix of experiences**

Analysis of regional and international experiences - in which the participating countries are included - which allow to visualize possible exchanges and initiatives of south-south cooperation in order to be used in Output 6.

**Deliverable 4.1:** Report that presents cases of countries that have been successful in the application of a general, sectorial or specific model of circular economy.

**Deliverable 4.2:** Report that presents lessons learned: main barriers, challenges and opportunities, as well as developed policies, incentives or conditions for a successful application of the circular model.

**Deliverable 4.3:** Report including the comparative experience matrix.

**Output 5: Mapping of successful cases of application of industry 4.0 which benefit circular economy at international level and adoption of practices at local level taking into account technological development 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 in relation to its position in the fourth industrial revolution framework, and in particular evaluation of the situation and development stage in which the relevant stakeholders identified in Output 2 are located. General diagnosis of the level of development of industries 4.0 in each participating country, and analysis of the main technologies of the fourth industrial revolution.

### **Activity 5.2: Diagnosis of the potential benefit of applying industry 4.0 to circular economy models**

Identification of the circular economic activities defined in Product 2 that can be enhanced with the incorporation of industry 4.0 technologies, allowing them to streamline their production processes and services, optimize the use of resources and energy, and develop new business models.

**Deliverable 5.1:** Report that presents a general diagnosis of the level of development of industries 4.0 in each participating country and an analysis of the main technologies of the fourth industrial revolution (big





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data, 3D printing, advanced manufacturing, cloud computing, internet of things, artificial intelligence, virtual / augmented reality, robotics, sensors and block chain)

**Deliverable 5.2:** Report that presents the benefits that actors and initiatives identified in Output 2 would bring with new disruptive circular business models (remanufacturing, circular design, circular supplies, resource recovery, life cycle extension, shared platforms and product-like-service) with the technologies identified in Activity 5.1.

### **Output 6: Identification of potential projects in circular economy for each participating country prioritizing specific geographical areas**

#### **Activity 6.1: Definition of pilot projects**

As an outcome of the circular economy roadmap supported by the CTCN, at least one pilot project will be selected carrying high potential to be implemented as a follow-up of the technical assistance. The projects that will be identified in the five countries will be then presented during the final workshop. CTCN will assist the countries in the identification of the most appropriate financial organizations that could finance their continuation, e.g. GCF, GEF, regional banks, private investors/companies, etc. The following steps must be followed:

- a) Define at least economic activities and/or productive process to develop a circular economy strategy
- b) Identify and define the supply of waste that can still be used in economic activities and/or productive processes, as well as its location in the value chain.
- c) Identify and define the demand for waste that can still be used in economic activities and/or productive processes, as well as its location in the value chain.
- d) Identify the existing productive and technological structure to foster collaborations.
- e) Identify local public and private organizations which are already developing or interested in developing the circular model of the pilot project.
- f) Develop and create performance indicators which allow tracing and measuring the progress and compliance states of the pilot project.

The identification of the productive processes and/or economic activities to be considered in the pilot project(s) will be defined in collaboration with the NDEs of each participating country.

#### **Activity 6.2: Presentation of the results to the participant countries**

Present the results and consult with the NDEs and the requesting organizations (as applicable) of the five participating countries.

**Activity 6.3:** Organization of a final workshop to present the results of the technical assistance in the participating countries.



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The workshop will be organized as a side event of a conference or a forum in the region related to circular economy. During the workshop the establishment of a regional platform on circular economy for Latin America will be defined, as well as South-South cooperation opportunities will be discussed.

During the workshop each country will present its case study and a session will be organized to discuss:

- Potential synergies at regional level;
- The possibility of following up the work on circular economy through a regional platform which can disseminate the results of the technical assistance to other countries in the region and internationally.

The list of the participants to the workshop needs to be agreed well in advance so to properly manage the travels preparation. The five NDEs and request proponents (as applicable) will be representing the countries during the workshop. NDEs and proponents will provide support to the implementer in identifying a relevant regional event and targeted invitees, advertising the workshop among national and regional stakeholders and promote the initiative within their networks.

**Deliverable 6.1:** Evaluation report describing the selected projects in agreement with the NDEs in each participating country, describing their potential benefits in economic, social and environmental terms.

**Deliverable 6.2:** Report of the roadmap for the implementation of the circular economy for each country. The final report will be shared with NDEs and proponents.

**Deliverable 6.3:** Final workshop prepared, including material, presentations as appropriate, as well as a report of the meeting and a MoU draft for the establishment of a regional circular economy platform and south-south cooperation alternatives. NDEs will support the process of the MoU preparation by agreeing on a common draft prior to the workshop.

**Deliverable 6.4:** Material for the presentation of the results in a conference or forum and list of participants. Final report on the achievements of the event, including photos, media coverage and presentations.

## 4 GENERAL TIME SCHEDULE

CTCN technical assistance activities under this contract have an expected duration of up to twelve (12) months from the contract signature. However, the bidder has the option of proposing a customized duration of the activities under this contract. The proposed plan for the implementation of activities and deliveries:

Outputs	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
<b>O1. Planning and communication documents</b>												
D1.1 Work plan in the form of CTCN response plan template	*											



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17 December 2019



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technical assistance in the participating countries													
D6.1 Evaluation report to identify and define potential projects										*			
D6.2 Roadmap draft for the implementation of the circular economy for each country											*		
D6.3 Material for the final workshop to present the results to the NDEs and the requesting organizations, as well as a report of the meeting and a MoU draft for the establishment of a regional circular economy platform and south-south cooperation alternatives.												*	

All drafts and final deliverables are subject to approval by the CTCN Climate Technology Manager, before these can be considered as completed.

### 5 PERSONNEL IN THE FIELD (PROFESSIONAL EXPERIENCE AND QUALIFICATIONS)

The Contractor is expected to provide the services of a team that should ideally comprise the following competencies (see Section 4 in the Response Plan for a detailed description):

Expert title	Minim qualification requirements	Necessary experience
Circular economy expert 1	<ul style="list-style-type: none"> <li>Master degree in industrial engineering, business administration or other relevant education.</li> </ul>	<ul style="list-style-type: none"> <li>At least 7 years of professional experience in the required areas</li> <li>Demonstrated experience in industry 4.0 and innovation.</li> <li>Demonstrated experience in developing roadmaps.</li> <li>Demonstrated experience in carrying out circular economy studies.</li> <li>Excellent written and communication skills in Spanish and English.</li> <li>Previous work experience in Latin America is required</li> </ul>
Circular economy expert 2	<ul style="list-style-type: none"> <li>Master degree in environmental engineering, business administration or other relevant education.</li> </ul>	<ul style="list-style-type: none"> <li>At least 7 years of professional experience in the required areas</li> <li>Demonstrated experience in developing roadmaps.</li> <li>Demonstrated experience in carrying out circular economy studies including supply chain management.</li> <li>Demonstrated experience in climate change.</li> <li>Excellent written and communication skills in Spanish and English.</li> <li>Previous work experience in Latin America is required</li> </ul>



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Regional Consultant	<ul style="list-style-type: none"> <li>Master degree in industrial/environmental engineering, business administration or other relevant education</li> </ul>	<ul style="list-style-type: none"> <li>At least 5 years of professional experience in the required areas</li> <li>Demonstrated experience in developing roadmaps.</li> <li>Demonstrated experience in carrying out circular economy studies.</li> <li>Excellent abilities to interact with local stakeholders, collect and evaluate data and transform the information into high quality documentation tangible to the target audience.</li> <li>Previous work experience in Latin America is required</li> </ul>
Lead international expert on circular economy	<ul style="list-style-type: none"> <li>Master degree in industrial engineering, business administration or other relevant education.</li> </ul>	<ul style="list-style-type: none"> <li>At least 7 years of professional experience in the required areas</li> <li>Demonstrated experience in industry 4.0 and innovation.</li> <li>Demonstrated experience in carrying out circular economy studies.</li> <li>Previous work experience in Latin America is required</li> <li>Excellent written and communication skills in Spanish and English.</li> </ul>
Gender expert (national/international)	<ul style="list-style-type: none"> <li>Postgraduate university degree in social or natural sciences or another relevant discipline, preferably with a specialization in gender, project cycle management and/or energy.</li> </ul>	<ul style="list-style-type: none"> <li>A minimum of 5 years' practical experience in the field of gender equality and gender mainstreaming.</li> <li>Formal training in gender analysis and gender planning and demonstrated expertise in mainstreaming gender in projects and programmes in sectors relevant to circular economy.</li> <li>Proficiency in reading, writing and speaking English and must be able to communicate with stakeholders effectively.</li> </ul>

The CVs of the respective experts assigned to this assignment by the Contractor must be provided.

Full qualification requirements for the contractor, including specific requirements of the proposed team are in the Evaluation criteria, which is an annex to this ToR.



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## 6 LANGUAGE REQUIREMENTS

The working languages for the purposes of this assessment are English and Spanish, thus an excellent command of English and Spanish is required for the proposed personnel.

All delivered documents must be of sufficient enough quality so that no further editing shall be required.