

TERMS OF REFERENCE

(INSERT NAME OF THE ASSIGNMENT/CONSULTANCY)

[Brazil]

[BR-T1674]

[Technical Cooperation Name]

[Web link to approved document]

1. Background and Justification

1.1. Brazil will host the 30th Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in Belém, in November 2025, when it will also take over the UNFCCC COP30 Presidency. The IDB Group, in support of the Brazilian COP-30 Presidency, intends to use this opportunity to advance the three core objectives of its institutional strategy: reducing poverty and inequality, addressing climate change, and promoting sustainable growth.

1.2. In this context, the IDB is interested in exploring the ways in which the bioeconomy can contribute to a just transition to a low-carbon economy across the world. In this effort, the different varieties of the bioeconomy should be examined in various parts of the planet, in both developed and developing countries, given its enormous potential.

1.3. Indeed, the bioeconomy is rapidly being recognized as one of the most promising solutions for both combating climate change and promoting sustainable development in its economic, social, and environmental dimensions, in both megadiverse and non-megadiverse countries. At the same time, because it is based on biological resources, the bioeconomy is particularly vulnerable to the effects of climate change, such as the increase in temperature, extreme weather events, droughts, and other climate-related impacts.

1.4. At its core, the bioeconomy is a departure from the traditional linear economy, which relies heavily on finite fossil fuels and raw materials, often leading to environmental degradation and exacerbating social inequalities. Instead, it is based on the sustainable use of biological potential through traditional and scientific knowledge. It encompasses diverse economic activities, including, but not limited to, agriculture, forestry, fisheries, aquaculture, timber and non-timber forest products, food, energy, biotechnology, healthcare, and bio-based industries.

1.5. The bioeconomy is a knowledge-based development model that integrates modern technologies, such as bio-based nanomaterials, with long-standing traditional practices, such as the sustainable use and management of biodiversity. This approach makes the bioeconomy a universal productive paradigm that can be adopted by countries at all levels of development and by economic activities of all sizes.

1.6. The bioeconomy also plays an increasingly important role in global carbon markets by offering solutions that reduce greenhouse gas emissions and generate carbon credits through activities such as

forestry, bioenergy production, and sustainable agriculture. Ensuring transparent and reliable carbon accounting methodologies is essential to maintaining the integrity of these markets and maximizing their environmental and economic benefits. Carbon markets provide opportunities for developing countries, in particular, to attract investments that support both climate mitigation and sustainable development goals.

1.7. The topic has recently sparked great interest in international discussions as a result of the adoption of the High-Level Principles on Bioeconomy by the G20 members in November 2024. Several institutions such as FAO, UNEP, and OECD, as well as various national governments, have sought to deepen the common understanding and international dialogue on this innovative production paradigm. In addition, South Africa, which currently holds the G20 Presidency, has confirmed that the G20 Initiative on the Bioeconomy (GIB), launched by the Brazilian G20 presidency, will continue in 2025.

1.8. There is currently strong momentum around the bioeconomy, including its integration into carbon markets and its potential to contribute to global climate action. The time is ripe to deepen the understanding of this productive paradigm and to shape a more structured international debate on its role in addressing the global climate emergency.

2. Overall Objective

2.1. The main objective of the project is to enable the IDB to support the Brazilian Presidency of the UNFCCC COP-30 in presenting a robust case for the integration of the bioeconomy and carbon markets into the climate change agenda. The study will assess the interconnections between Bioeconomy, Climate Change, and Carbon Accounting, with a particular focus on finance, international trade, governance, and carbon market mechanisms. It is structured into five dedicated chapters:

1. **Bioeconomy & Climate Change:** Impact assessment and sustainability metrics for the bioeconomy.
2. **Finance & Trade for the Bioeconomy:** Financial mechanisms and international market access.
3. **Governance & Policy Integration:** International agreements and multilateral coordination.
4. **The Role of the Amazon in the Bioeconomy:** The Amazon's contribution to sustainable bioeconomic development and its global significance.
5. **Carbon Accounting & Market Mechanisms:** Carbon accounting methodologies and market rules.

2.2. In this respect, the project aims to provide Brazil with elements to justify, and to offer recommendations for, the inclusion of the topics of the study in discussions and negotiations on climate, as well as in climate action initiatives developed by governments and non-government entities.

2.3. Please find below the scope of services for each chapter:

3. Scope of Services

3.1. The service consists of producing a policy paper (“Paper”) that explores how the bioeconomy and carbon accounting and market mechanisms can contribute to climate change mitigation and adaptation while promoting sustainable development in both developed and developing countries. The Paper will analyze key aspects including the bioeconomy’s impact on climate change, financing mechanisms, international trade opportunities, governance frameworks, carbon markets with their accounting methodologies, and market rules, with a focus on forestry and bioenergy projects.

3.2. Each chapter of the study should include:

White Paper: Approximately 50 pages, providing an in-depth analysis of each thematic area.

Viewpoint: Approximately 10 pages, offering expert insights.

Digital Appendices: Where applicable, to document methodological choices and supporting data.

3.3. The Paper should be global in scope, examining bioeconomic activities across different regions and biomes, considering both megadiverse and non-megadiverse countries. While the Paper is not expected to provide a strict definition of the bioeconomy, it should adopt the perspective of the bioeconomy as a new productive paradigm: an economic system that sustainably uses renewable biological resources—such as plants, animals, and microorganisms—to produce goods, services, information, and energy. This system should respect ecosystem limits, maintain ecosystem services, minimize environmental and climate impacts, and create new, decent jobs with sustained income.

3.4. The Paper should also examine carbon accounting methodologies and market rules, focusing on principles such as proportionality, environmental integrity, technological neutrality, and inclusivity, especially for producers in developing countries. It should analyze the role of carbon intensity metrics in public policies and private sector initiatives, as well as their application in taxation, subsidies, emission standards, and procurement criteria. Special attention should be given to addressing indirect land-use change (ILUC), embedded emissions, double counting, and certification processes, with a focus on both international standards and national frameworks, particularly in Brazil.

3.5. Grounded in scientific evidence, the Paper should provide practical insights and recommendations to support decision-makers in integrating both the bioeconomy and carbon accounting into the climate change agenda at UNFCCC COP-30 and beyond.

3.6. Below is the definition and scope of services for each chapter.

CHAPTER 1 - Bioeconomy & Climate Change: Impact Assessment and Sustainability Metrics for the Bioeconomy. This chapter will explore how the bioeconomy can support global climate objectives by mitigating and adapting to climate change while contributing to sustainable development. It will analyze

the role of bioeconomic activities in reducing emissions, enhancing climate resilience, and promoting sustainable resource use. The chapter will also assess methods for measuring the sustainability of bioeconomic activities, emphasizing the need for standardized metrics that are applicable across diverse biomes, including the Amazon region. Through concrete examples and best practices, the chapter will provide insights into aligning bioeconomy initiatives with international frameworks such as the Sustainable Development Goals (SDGs) and supporting their integration into climate policies.

1.1 Starting from the G20 High-Level Principles on Bioeconomy and considering other relevant materials, the Paper should answer key questions, including but not limited to:

1.2 Climate Change Mitigation and Adaptation:

- (i) How can bioeconomy activities contribute to climate change mitigation efforts?
- (ii) How can bioeconomy activities contribute to climate change adaptation efforts?
- (iii) What are concrete examples of bioeconomy activities—both in developed and developing countries—that have had climate-positive effects while delivering social and economic benefits?
- (iv) How do these examples relate specifically to the Amazon region?

1.3 Sustainability Metrics and Indicators:

- (v) What existing methods are available to measure the sustainability of bioeconomy activities, and what are their limitations?
- (vi) Can existing metrics and indicators, such as those from the Sustainable Development Goals (SDGs), be applied to measure bioeconomy sustainability?
- (vii) What elements should be considered when developing sustainability metrics, addressing the three dimensions of sustainable development: economic, social, and environmental?
- (viii) How can these indicators and metrics be developed to ensure comparability with other sustainability indicators?
- (ix) Could a hybrid model, combining globally applicable indicators with region-specific indicators, effectively address the diversity of regional and national contexts?
- (x) What are the appropriate international forums and platforms for discussing and negotiating sustainability criteria, metrics, and indicators for the bioeconomy?

1.4 The Paper should cover bioeconomic activities that both directly and indirectly contribute to combating climate change, including but not limited to:

- Direct Contributions: Such as forest restoration and ecosystem conservation.
- Indirect Contributions: Such as the use of biofuels and biofertilizers that reduce the consumption of fossil fuels and oil derivatives.

CHAPTER 2 - Finance & Trade for the Bioeconomy: Unlocking Investment and Global Market Access

This chapter will analyze how financing and international trade can accelerate the bioeconomy's contributions to climate change mitigation, adaptation, and sustainable development. It will examine key challenges and opportunities for securing investments from governments, the private sector, and

international climate funds, ensuring that bioeconomic initiatives of different scales and technological levels can access financial resources. The chapter will also explore the role of global trade in expanding the reach of bioeconomy products and services, assessing both opportunities and barriers while considering strategies to align trade practices with climate and sustainability goals.

2.1 Starting from the **G20 High-Level Principles on Bioeconomy** and considering other relevant materials, the Paper should answer key questions, including but not limited to:

2.2 Financing the Bioeconomy:

- (i) What are the potential impacts of increased financing for bioeconomy activities on climate change mitigation and adaptation?
- (ii) What are the key challenges and constraints to investing in bioeconomy activities, and what are the most effective ways to address them?
- (iii) Which financial sources and mechanisms are best suited to foster bioeconomy growth?
- (iv) What roles should governments, the private sector, multilateral development banks, and international funds play in supporting bioeconomy financing?
- (v) How can bioeconomy activities benefit from resources provided by multilateral funds such as the Global Environment Facility (GEF), the Green Climate Fund (GCF), the Climate Investment Funds (CIF), and the Adaptation Fund?
- (vi) What mechanisms can ensure that different types of bioeconomy activities receive adequate funding, including low-tech and high-tech projects, early-stage ventures, and both small-scale and large-scale initiatives, whether replicable or not?
- (vii) How can existing financial resources and investments be better allocated to maximize their positive impact on climate change mitigation and adaptation?

2.3 International Trade in Bioeconomy Products and Services:

- (viii) In what ways can the international trade of bioeconomy products and services contribute to climate change mitigation, adaptation, and sustainable development?
- (ix) What are the current opportunities for expanding international trade in bioeconomy products and services, and how can they be incentivized?
- (x) What are the barriers to international trade, including tariffs, non-tariff barriers, and non-trade measures, and how can they be addressed?
- (xi) What forums are most appropriate for international discussions on promoting bioeconomy trade, and why?
- (xii) How can enhancements to the Harmonized System (HS) Codes foster the global trade of bioeconomy products and services?
- (xiii) How can labeling schemes, sustainability standards, and regulatory frameworks help promote bioeconomy trade while ensuring environmental integrity?
- (xiv) What are the potential advantages and disadvantages of classifying bioeconomy products and services as environmental goods and services?

- (xv) What negative effects could arise from unilateral climate-related measures, including their impact on the UN Sustainable Development Goals, national climate strategies, and North-South financial flows as anticipated under the UNFCCC, the Paris Agreement, and the UN 2030 Agenda?

CHAPTER 3 – Governance & Policy Integration: Synergies Between Multilateral Frameworks and the Bioeconomy. This chapter will explore how the bioeconomy can support the objectives of the three Rio Conventions—UNFCCC, CBD, and UNCCD—by contributing to climate change mitigation and adaptation, biodiversity conservation, and combating desertification and drought. It will analyze the bioeconomy’s role in advancing the UN Sustainable Development Goals (SDGs) and aligning national policies with global commitments.

3.1. This chapter will consist in producing a policy paper (“Paper”) that explores: (i) the synergies among the three Rio Conventions—UNFCCC, CBD, and UNCCD—and (ii) the potential of the bioeconomy, in its various forms, to contribute to climate change mitigation and adaptation, biodiversity and ecosystem conservation and restoration, and combating desertification and drought. The Paper should also examine how the bioeconomy can serve as an enabler for implementing the three Rio Conventions while advancing the UN Sustainable Development Goals (SDGs).

3.2. Considering the **G20 High-Level Principles on Bioeconomy** and other relevant materials, the Paper should address key questions, including but not limited to:

- (i) What are the synergies and convergences among the three Rio Conventions?
- (ii) What trade-offs arise when implementing one or more of the Conventions, and how can these be managed?
- (iii) What criteria and elements should be considered when evaluating such trade-offs?
- (iv) How can the bioeconomy contribute to the simultaneous achievement of the objectives of the three Rio Conventions and the SDGs?
- (v) How can other complementary approaches support this goal?
- (vi) What policy mechanisms can ensure coherence and coordination in implementing the three Conventions?
- (vii) How can such mechanisms prevent the misallocation or disproportionate use of financial and technical resources for one Convention at the expense of the others?
- (viii) How do the topics addressed relate specifically to the Amazon region?

3.3. Recognizing that the Executive Secretariats of each Convention are dedicated to their respective mandates, the Paper should consider past and current efforts to promote synergy, including the establishment of the **Joint Liaison Group (2001)** and the launch of the **Joint Capacity-building Programme (2023)**. It should assess the effectiveness of these initiatives and identify opportunities

for strengthening collaboration to maximize the bioeconomy's contributions to the Conventions' shared goals.

CHAPTER 4 - The Role of the Amazon in the Bioeconomy: Its Contribution to Sustainable Development and Global Significance.

This chapter will explore the Amazon's unique role in advancing the bioeconomy and its contributions to climate change mitigation, biodiversity conservation, and sustainable development. It will assess the region's biological resources, traditional knowledge, and innovative practices, highlighting their local and global significance. The chapter will examine how the Amazon's bioeconomy can generate sustainable livelihoods, promote ecosystem restoration, and support carbon sequestration, aligning with the three Rio Conventions—UNFCCC, CBD, and UNCCD—and the UN Sustainable Development Goals (SDGs). It will also explore opportunities to scale up bioeconomic activities through trade, carbon markets, and sustainable investment while ensuring equitable benefits for local communities. By presenting case studies and best practices, the chapter will offer insights for integrating the Amazon's bioeconomy into global climate initiatives, including UNFCCC COP-30.

Bioeconomy and Climate Change:

4.1 How can the Amazon's bioeconomy contribute to climate change mitigation and adaptation, while supporting local and global climate goals?

4.2 What bioeconomic activities in the Amazon have demonstrated measurable climate-positive impacts, and how can they be scaled up?

Biodiversity and Sustainable Development:

4.3 How can the Amazon's biodiversity and traditional knowledge be leveraged to develop sustainable bioeconomic products and services?

4.4 How can bioeconomic activities in the Amazon balance economic development with biodiversity conservation and ecosystem restoration?

Socioeconomic Impacts:

4.5 How can the bioeconomy generate sustainable livelihoods and improve the well-being of local and Indigenous communities in the Amazon?

4.6 What mechanisms can ensure that the benefits of bioeconomic development are equitably shared, respecting local cultures and traditional knowledge?

Governance and International Cooperation:

4.7 How can national and regional policies support the sustainable development of the Amazon's bioeconomy while aligning with the objectives of the three Rio Conventions and the SDGs?

4.8 What opportunities exist for international cooperation to promote the Amazon's bioeconomy, including access to global carbon markets, sustainable trade, and climate finance?

Challenges and Solutions:

4.9 What are the main challenges to developing a sustainable bioeconomy in the Amazon, and how can they be addressed through policy, finance, and governance?

4.10 How can sustainable bioeconomic activities help combat deforestation, land degradation, and the effects of climate change in the Amazon?

CHAPTER 5 – Carbon Accounting & Market Mechanisms: Methodologies, Standards, and Market Rules

This chapter will explore the role of carbon accounting and market mechanisms in supporting climate change mitigation, with a focus on forestry and bioenergy projects. It will examine how carbon intensity metrics and carbon market rules shape public policies and private sector initiatives, while addressing challenges such as indirect land-use change (ILUC), embedded emissions, and double counting. Additionally, the chapter will assess certification processes and accreditation institutions, particularly in Brazil, and propose guidelines to ensure coherence, comparability, and alignment with climate goals, emphasizing inclusivity for producers in developing countries.

5.1 The Paper should:

- Assess the use of carbon intensity metrics in tools such as taxes, subsidies, emission standards, and procurement criteria, examining their role in reducing embedded emissions.
- Provide an overview of carbon accounting methodologies across sectors and countries, considering measurement and reporting costs.
- Analyze carbon market rules for REDD+ and bioenergy projects, addressing challenges related to different standards, reversals, permanence, leakage, and environmental integrity.
- Explore solutions to mitigate ILUC and embedded emissions, focusing on challenges specific to developing countries like Brazil.
- Propose guidelines to prevent perverse incentives for less ambitious NDCs and double counting, in line with the World Forestry Rules (WFR) and the Paris Agreement.
- Evaluate certification processes and accreditation institutions at both international and national levels, particularly in Brazil.

5.2 The Paper should provide general and sector-specific guidelines for carbon accounting and market mechanisms, ensuring coherence, comparability, and alignment with climate goals. It should propose ways to reduce the financial burden on producers in developing countries, addressing gaps in administrative, technological, and data-related capacities.

5.3 The Paper should be developed in consultation with stakeholders from the scientific community, with a focus on the realities of developing countries and existing regulatory frameworks.

5 Key Activities

5.1 Preparation of a policy paper (“Paper”) exploring the potential of the bioeconomy, considered in its many forms, to contribute to climate change mitigation and adaptation, support carbon markets through the generation of carbon credits, and act as an enabler for a just transition to a low-carbon and climate-resilient economy in all regions of the world.

6 Project Schedule and Milestones

6.1 The project will have 7 milestones. The firm is expected to:

Here's the information organized into a clear table format:

| Step | Description | Deadline | Method |
|------|---|--------------------------------|------------|
| 1 | Share an outline of the Paper with the client | 23 May | Email |
| 2 | Present the outline of the Paper to the client | Following week after 23 May | Video call |
| 3 | Participate in a video call to discuss the broader context of the Paper | Date to be agreed upon | Video call |
| 4 | Share a draft of the Paper with the client | 4 July | Email |
| 5 | Present the draft of the Paper to the client | Following week after 4 July | Video call |
| 6 | Share the final version of the Paper with the client | 15 August | Email |
| 7 | Present the final version of the Paper to the client | Following week after 15 August | Video call |

6.2 When sending the documents referred to in items 6.1.(i), 6.1.(iv), 6.1.(vi), above, the firm should include in the email the following addresses: Queiroz Fenyves, Katia <KATIAQ@IADB.ORG>; Araujo Carrijo, Luciana <LUCIANAC@IADB.ORG>; Galmez Marquez, Veronica <veronicagal@iadb.org>; Badaoui Choumar, Nathalie <NATHALIEBA@IADB.ORG>; Juan Manuel Bayse <juanmu@IADB.ORG>; Vicente de Azevedo Araújo Filho <vicente.araujo@itamaraty.gov.br>; Rafaela Junqueira de Oliveira <rafaela.oliveira@itamaraty.gov.br>; Daniel Boeira Lodetti <daniel.lodetti@itamaraty.gov.br>; Bruno Brito da Cruz Abaurre <bruno.abaurre@itamaraty.gov.br>; and cgdes@itamaraty.gov.br.

6.3 The persons mentioned in item 6.2., above, will be invited to participate in the video calls referred to in items 6.1.(ii), 6.1.(iii), 6.1.(v), 6.1.(vii), above.

7 Reporting Requirements

7.1 The consulting firm is expected to remain in contact with the client throughout the duration of the project through email and, if needed, video calls. In communicating with the client, the firm should include the persons mentioned in item 6.2., above.

7.2 The client expects to evaluate the work during document presentations and to request corrections or changes if the document does not meet the scope and objectives outlined in Sections Two and Three of this term.

7.3 In addition, the consulting firm is expected to:

- (i) present the outline of the Paper to the client over a video call in the week following 23 May, pursuant to item 6.1.(ii), above;
- (ii) present the draft of the Paper to the client over a video call in the week following 4 July, pursuant to item 6.1.(v), above; and
- (iii) present the final version of the Paper to the client over a video call in the week following 15 August, pursuant to item 6.1.(vii), above.

8 Acceptance Criteria

- 8.1 After being presented the outline of the Paper over the video call described in item 6.1.(ii), above, the client will have until 5 business days to respond as to whether it accepts the outline of the Paper.
- 8.2 After being presented the draft of the Paper over the video call described in item 6.1.(v), above, the client will have until 5 business days to respond as to whether it accepts the draft of the Paper.
- 8.3 After receiving the final version of the Paper by 15 August by email and after the video call described in item 6.1.(vii), above, the client will have until 29 August to respond as to whether it accepts the final version of the Paper.
- 8.4 In case the client indicates that there are changes to be made to the final version of the Paper, the firm will have until 10 September to send a revised version of the Paper by email. Then, the client will have until 17 September to respond as to whether it accepts the revised version of the Paper.
- 8.5 The Project Team Leader of the IDB, Katia Fenyves, is responsible for expressing, on behalf of the client, whether the IDB accepts the Paper or not, including in relation to the intermediary stages referred to in items 8.1. and 8.2., above.

9 Other Requirements

- 9.1 Unless the client expressly states otherwise, the firm shall treat as confidential the documents received from the client in connection with the Paper, as well as any information exchanged with the client, whether by email, video call or any other format.
- 9.2 The Paper should consist of original work produced by the firm, with all information derived from properly cited sources.

10 Supervision and Reporting

- 10.1 The preparation of the Paper will be supervised by persons mentioned in item 6.2., above, who will, either together or not, participate in video calls, meetings, and other forms of communication.
- 10.2 The persons described above are expected to be copied on all email exchanges relating to the preparation of the Paper.

11 Schedule of Payments

- 11.1 Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
- 11.2 The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

| Payment Schedule | |
|---|------|
| <i>Deliverable</i> | % |
| 1. Presentation of the outline: May (item 6.1.(i), above) | 10% |
| 2. Presentation of draft: July (item 6.1.(iv), above) | 20% |
| 3. Presentation of the final version: August (item 6.1.(vi), above) | 40% |
| 4. Acceptance of the Paper (item 8, above) | 30% |
| TOTAL | 100% |