

## TC Document

### I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Science, Technology and Innovation to Protect the Biodiversity of the Amazon Basin
▪ TC Number:	RG-T4005
▪ Team Leader/Members:	Anta, Rafael (IFD/CTI) Team Leader; Vargas Cuevas, Fernando Esteban (IFD/CTI) Alternate Team Leader; Crespi, Gustavo Atilio (IFD/CTI); Debade, Xavier Yves (CSD/CCS); Genesis Morales (IFD/CTI); Hennessey, Michael P. (IFD/CTI); Henriquez Leblanc, Pauline (IFD/CTI); Mendoza Benavente, Horacio (LEG/SGO); Sandra Lopez (IFD/CTI); Santa Pena, Camilo Andres (CSD/CCS); Tapia Alba, Mauricio (VPS/ESG); Watson, Gregory (CSD/CCS); Lesenfans, Yves (CSD/ACU)
▪ Taxonomy:	Research and Dissemination
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	14 Oct 2021.
▪ Beneficiary:	Research institutions and firms from Bolivia, Colombia, Ecuador and Peru.
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	France-IDB Natural Capital Lab Fund(NCL)
▪ IDB Funding Requested:	US\$1,500,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	30 months
▪ Required start date:	May 2022
▪ Types of consultants:	Firms and/or individual consultants
▪ Prepared by Unit:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ Unit of Disbursement Responsibility:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ TC included in Country Strategy (y/n):	N/A
▪ TC included in CPD (y/n):	N/A
▪ Alignment with the Second Update of the Institutional Strategy 2010-2023:	Productivity and innovation; Environmental sustainability

### II. Objectives and Justification

- 2.1 The importance of the Amazon Basin.** The Amazon Basin is the world's largest tropical rainforest and a hotspot of biodiversity. In parts of the Andes and Amazonian lowlands, a single gram of soil may contain more than 1,000 genetically distinct fungi species. Although scientists discover new species in the Amazon at the extraordinary rate of one every other day, many species are still poorly known. And besides this richness of biodiversity, the Amazon forests act like a giant “air-conditioner”, lowering land surface temperatures and generating rainfall, and represents a large component of the global carbon cycle, accounting for about 16% of terrestrial productivity and 150-200 billion tons of carbon stored in soils and vegetation.<sup>1</sup>

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<sup>1</sup> Amazon Assessment Report 2021, Science Panel for the Amazon.

- 2.2 Increased anthropogenic pressures drive biodiversity loss, affect climate and threat livelihoods.** Human intervention in the form of illegal logging and mining, forest fires, and unsustainable agricultural activities, is driving an accelerated deforestation and environmental degradation, threatening the biodiversity of this critical terrestrial and freshwater ecosystem. 17% of the forest has been lost in the last 50 years (World Wildlife 2019). Land use changes reinforce global climate change, leading to positive feedback mechanisms that reduce forest resilience. They also increase drought stress and fire risk, turn the Amazon into a carbon source, cause higher tree mortality, and ultimately could reach a tipping point where continuous forests can no longer exist and are replaced by degraded forests. These cascading effects would have tremendous impacts on climate and in turn agriculture, hydropower generation, and human health and well-being.<sup>2</sup>
- 2.3 Rationale behind the project.** It is urgent and imperative to protect the Amazon biome, while making this protection compatible with sustainable economic development and the well-being of its population, and science, technology and innovation can contribute to solve this challenge. Discoveries of biochemical, molecular and genetic properties of commercial value in species, and its use in the development of innovative bio-based products may lead to the protection of the ecosystems that host those species and benefit its communities through Access and Benefit Sharing (ABS) agreements and employment opportunities<sup>3</sup>.
- 2.4 Objective.** The general objective of this technical cooperation is to contribute to protect the Amazon through the development of businesses based on the economic value of its biodiversity. The specific objectives of this project are (i) the promotion of biodiversity research aimed at discovering properties of commercial value in nature, (ii) the incubation of science-based startups that use or transform renewable resources into bio-based products in a sustainable fashion, and (iii) train institutions to manage access to genetic and biological resources for research and commercial purposes, and to design fair and equitable Access and Benefit Sharing agreements. Discoveries arising from biodiversity research may be used by firms to develop new or better nature-based solutions and bio-based products<sup>4</sup>, who together with the incubated startups will be candidates to apply to innovation and bioeconomy funding programs, some of which supported by IDB investment programs<sup>5</sup>, and to become suppliers of value chains.

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<sup>2</sup> Amazon Assessment Report 2021, Science Panel for the Amazon.

<sup>3</sup> In the detailed design of this technical cooperation, the team will define a set of criteria for the selection and prioritization of species and organic material, and bio-based products targeted by research projects in Component 1 and by firms in component 2, respectively. The core elements for the definition of criteria are relevance of the species or organic material, contribution to conservation or restoration, benefits to local communities, sustainable production and economic feasibility of bio-based products.

<sup>4</sup> Discoveries from biodiversity research may have the potential to provide solutions to different workstreams of the NCL Trust Fund: Nature Based Solutions, Regenerative Agriculture, Pollution, Waste and Chemicals, Corporate Value Chains and Sustainability, among others.

<sup>5</sup> In Peru, the recently approved loan PE-L1263 (Innovation, Technological Modernization and Entrepreneurship Program) has financing goals to support climate change and biodiversity projects. Incubated firms that move into acceleration stage could apply to a Fund of Funds managed by COFIDE and those in expansion stage could apply to the Bioeconomy Fund that is being created in COFIDE with the financial support of the IDB.

- 2.5 **Strategic Alignment.** This project is consistent with the second update to the IDB Group's Institutional Strategy for the period 2020-2023 (AB-3190-2), which calls for a renewed approach to **promote science, technology, and innovation**, and further mainstreaming the Bank's work to **address climate change and environmental sustainability**. According to the [joint methodology of Multilateral Development Banks \(MDB\)](#) approach on climate finance tracking, 50% of total IDB funding for this operation will result in climate change mitigation and adaptation activities, such as scientific research and incubation of startups that produce goods, services or processes consisting in sustainable bio-based business, replacing fossil fuels-based products, reducing carbon footprint of processes and developing technologies that contribute to reduce GHG emissions and increase climate resilience. The whole project lies at the intersection of science, technology, and innovation with the promotion of economic activity to contribute to protect natural ecosystems and is strategically aligned with the priority area of productivity and innovation. Scientific research and innovation can boost the development of high-value bio-based products, for existing and new markets. The sustainable use and transformation of renewable biological resources can promote a new economy, where both local/indigenous populations can play an active role and directly benefit from it, for instance through Access and Benefit Sharing (ABS) agreements. And by proposing low-carbon and nature positive development pathways, the project has the potential to contribute to the restoration of ecosystems, in line with IDB's CRF on sustainably managed habitat using ecosystem-based approaches. This project doesn't include criteria nor activities to promote gender equality and diversity inclusion due to the lack of evidence of gaps in human capital devoted to bioprospecting and science-based entrepreneurship. However, the project will collect data during the execution of activities that will help measure gaps and inform the design of future operations.
- 2.6 **Alignment with the France-IDB Natural Capital Lab Trust Fund and the Amazon Initiative.** This project aligns with the specific objectives of the Proposal for the Establishment of the France-IDB Natural Capital Lab Trust Fund (GN-2970) and falls within the scope of two priority sectors: fight against deforestation and investing in nature-based solutions. This research and dissemination project will contribute paving the path to new development models in the Amazon. This new economy, based on the sustainable creation of bio-based high-value products for current and new markets, has the potential to (i) fuel a new development model that can benefit local/indigenous populations, and (ii) help discover sustainable development pathways and alternatives to extractive activities or intensive agriculture, and thus foster the restoration of ecosystems or integrated landscape management approaches. This project is also inclusive, as will seek the participation of indigenous people and local communities, promoting their traditional knowledge regarding the conservation, restoration, and sustainable management of the forests they live in. In addition, the project complements and enriches the proposal of the IDB Group's Amazon Initiative and in particular the Amazon Bioeconomy Fund financed by the GCF, by facilitating the identification of a solid pipeline of innovative bioeconomy ventures. Components 1 and 2 will support research institutions and firms to discover properties of economic value in nature and develop innovative bio-based products that will contribute to protect the Amazon, while mitigating climate change by reducing greenhouse gas emissions.
- 2.7 **Alignment with Country Strategies.** This project is aligned with priority areas of the Bank's strategies of the beneficiary countries:

- **Colombia** – This project is aligned with and contributes to the priority area of the Country Strategy 2019–2022 that consists in preserving and expanding natural capital and promoting climate change adaptation and resilience to natural disasters, while proposing economic development alternatives for the most vulnerable.
- **Peru** – This project is aligned with and contributes to two priority areas of the Country Strategy 2017-2021: productivity (low levels of investment in research and development were identified as a barrier to productivity and innovation), and environmental sustainability and climate change, where the Bank aims to support sustainable practices and the sustainable use of natural resources.
- **Ecuador** – This project is aligned with and contributes to one priority area of the Country Strategy 2018-2021: support for productivity and private sector development as drivers of growth (Component 2 may support the development of new bio-based products for existing or new markets), in line with the cross-cutting issue of climate change.
- **Bolivia** - The project is aligned with the Country Strategy 2022-2025, contributing to the priority areas of (i) increasing productivity and (ii) economic diversification by promoting innovation (R&D investment in the country is low, and Components 1 and 2 will contribute to strengthen research, innovation and development), and the reduction in vulnerability to climate change and natural disasters. This project, by aiming at proposing low-carbon and nature positive development pathways, through the sustainable use of natural resources, has the potential to contribute to the restoration of ecosystems. This could result in reducing pressure on the environment and its degradation, which in turn could enhance the country's resilience to climate change and natural disasters.

2.8 **Complementarity with other projects.** This project leverages intermediate results, lessons learned and networking with policy makers, scientists and bioentrepreneurs from project RG-T3439, Bioeconomy: Exploring the Potential of Emerging Biotechnologies for Driving Sustainable Economic Growth (Research & Dissemination project with 66% of execution between disbursed and committed funds), and CO-T1475, Market Pull Technology Transfer as a Catalyst for Innovation in Colombia (Client Support project with 91% of execution), which helped to identify bioprospecting and bio-based entrepreneurship as two critical factors for the development of the bioeconomy while protecting the biodiversity, and its results will contribute to shape the Bank's dialogue on scientific and innovation policies with participating countries. This project also aligns and contributes to IDB Lab's project RG-G1033, Amazonia Regenerate Accelerator and Investment Trust (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru and Suriname), and PE-L1258/ PE-G1007, Peruvian National Blended Finance Fund for Bioeconomy, both co-financed by the French Fund in 2020 and implemented by IDB with support of the Natural Capital Lab. The startups incubated by this project might be ready to access to the Amazonia Regenerate Accelerator and get funding from its investment trust.

2.9 **Additionality regarding existing initiatives.** The four selected countries are implementing different measures to promote the bioeconomy, with different goals and priorities, and also with different magnitudes of funding. Colombia and Peru have

already allocated public funding (Ministry of Science and Technology and Ministry of Environment respectively), while Ecuador and Bolivia haven't allocated resources yet. In general, much of the existing initiatives are related with facilitating access to credit for companies whose business classifies as "bioeconomy" based on their own definition, which tend to be sustainable farming for food and related products, arts and crafts and other activities in nature (from bird watching to agritourism). This project provides additionality regarding existing efforts in the way that it proposes the use of science and technology to discover value in nature and foster new businesses that will turn this value into benefits for the entrepreneurs, the communities and the forest, and these new businesses will eventually benefit from accessing existing credit facilities.

### **III. Description of activities/components and budget**

- 3.1 **Component 1. Scientific Research on Biodiversity (US\$500,000).** Scientists estimate that over 3 million different species live in the Amazon, including plants, fungi and bacteria, and we know a very small fraction of this vast biodiversity (WWF). Thus, the potential for discovery of high value properties and active compounds is immense. The objectives of this component are to support (i) bioprospecting projects, understood as scientific research on the properties of species as natural sources for molecules, and biochemical and genetic information<sup>6</sup>, and (ii) research on the use of or for the transformation of renewable biological resources into commercially valuable products, with the potential to create jobs, contribute to the conservation of the forest that hosts those species or organic materials and reduce greenhouse gas emissions<sup>7</sup>. All supported projects will be previously selected through a competitive open call for proposals.
- 3.2 This component will finance the following activities: (i) individual consultancy to help the Bank execute this component by providing technical advice and coordinating the execution of activities in this component: (1) drafting of a competitive open call for research proposals, including detailed design of priorities, evaluation and selection criteria, (2) identify and propose the names of experts to be invited to join the evaluation committee<sup>8</sup>, (3) coordinate the launching of the call for research proposals, and (4) monitor the progress and results of supported research projects; (ii) consultancy contracts for the members of the committee for the evaluation of research proposals to select between 6 and 8 projects<sup>9</sup>, and (iii) support up to 8 selected research projects for bioprospecting and transformation of renewable biological resources into commercial products, through consulting contracts. Supported projects

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<sup>6</sup> The bioprospecting process begins with obtaining a formal permission for accessing genetic or biological resources from the source country or landowner, and includes the collection of source material, screening such material for bioactivity, testing isolated compounds for toxicity, and identification of mechanism of action.

<sup>7</sup> Examples of bio-based products of commercial value are biofertilizers and biopesticides in agriculture, bioremediation in sanitation, biochemicals and genes for pharmaceuticals, food, cosmetics, and biosensors, natural fibers for fabrics, and biomaterials for packaging and construction, among others.

<sup>8</sup> The Bank, through the project team, will invite experts with outstanding experience and reputation in the fields of natural sciences, life sciences, medical sciences, food sciences, agricultural sciences and industrial biotechnology, as well as in bio-based entrepreneurship to join the evaluation committee. The committee will be chaired by the Bank and will have a combination of experts from beneficiary countries and from elsewhere.

<sup>9</sup> The project team will share the results of the Evaluation Committee with IDB Country Representatives, who will issue their non objection for the project to support selected candidate projects in their countries.

may use the resources from these contracts to pay inherent expenses of scientific research (fees of researchers, rental/use of lab equipment, lab services and supplies), prototyping and demonstrations<sup>10</sup>, and such projects will include the dissemination of discoveries and results to stakeholders and stewards of the Amazon biodiversity: institutions, private sector, and local communities that could benefit from the discovery, and at the same time, contribute to protect the source of the discovery. Any research project supported by this component will have to comply with national regulations regarding access to genetic resources for research purposes. The call for proposals will target accredited universities and research institutions from beneficiary countries and will encourage international collaboration, accepting proposals from consortia with at least one institution from a beneficiary country. The expected results are the scientific discoveries and knowledge from supported projects, which may be used by the private sector to innovate and market bio-based products or services, in compliance with the Convention on Biological Biodiversity.

- 3.3 **Component 2. Incubation of Bio-based Startups (U\$940,000).** The objective of this component is to support the incubation of early-stage startups and scientific research projects that develop innovations in goods, services, or processes, based on the sustainable use or transformation of Amazon renewable resources, contributing to restore or protect its biodiversity. Through a competitive open call for proposals, the component will select and incubate bio-based ventures who are already working in early-stage development, at least in Technology Readiness Level (TRL) 4<sup>11</sup> (validated in lab), and scientific research projects at least in TRL 3 (experimental proof of concept) with high potential and willingness to become a sustainable bio-based business, which develop technologies, applications or processes that use or transform renewable biological resources into products or services with no or minimal carbon footprint, that can be circular, benefit local communities, protect biodiversity, restore native species, and/or contribute to reduce the use of fossil fuels (for example, replacing plastics with bioplastics, petrochemicals with biochemicals, fiber glass composites with bio-composites, etc), and increase climate resilience. The bank will contract selected startups and scientific research projects to conduct the *research and development* needed to achieve a TRL 7 (prototype demonstration in operational environment) of their technology, application or process, under a consulting services agreement.
- 3.4 This component will finance the following activities: (i) individual consultancy to help the Bank execute this component by providing technical advice and coordinating the execution of activities in this component: (1) drafting a competitive open call for science-based startups and research projects, with a detailed definition of evaluation criteria; (2) identify and propose the names of experts to be invited to join the evaluation committee<sup>12</sup>; (3) identify and propose providers of startup incubation

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<sup>10</sup> These consulting contracts will have a maximum limit of 10% for the procurement of goods.

<sup>11</sup> Technology readiness levels (TRLs) are a method for estimating the maturity of technologies during its development. TRLs are based on a scale from 1 to 9 with 9 being the most mature level. The European Commission advised EU-funded research and innovation projects adopted this scale in 2010. See details here [https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/annexes/h2020-wp1415-annex-g-trl\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf)

<sup>12</sup> The Bank, through the project team, will invite experts with outstanding experience and reputation in the fields of science-based entrepreneurship, seed and venture capital, intellectual property and value chains.

services specialized in restoration and conservation of biodiversity, bio-based businesses, and biotechnology; (4) coordinate the launching of the open call for science-based startups and research projects in beneficiary countries, and (5) monitor the progress and results of supported science-based startups and research projects; (ii) consultancy contracts for the members of the committee for the evaluation of science-based startups and research projects to be supported to select about 10 startups/projects<sup>13</sup>; (iii) support up to 10 selected startups and scientific projects to reach TRL 7 of their technology, application or process, through consulting contracts, making them candidates to apply to public funding programs and to attract venture capital funding. These consulting contracts may cover the costs of additional research (researchers, contracting of lab services, use of lab equipment, purchase of lab supplies, and related expenses), prototyping, field tests, demonstrations, and incubation services (e.g., design of business strategy, advisory services on intellectual property, training and networking with target value chains and potential investors, among others)<sup>14</sup>. In terms of results, this component aims to help incubate eight to ten initiatives between startups and research projects, that work to advance their solutions to at least TRL 7.

- 3.5 **Component 3. Training and evaluation (US\$60,000).** The objectives of this component are (i) to strengthen the capacity of stakeholders (competent national and subnational authorities and firms) on permits for access to genetic and biological resources<sup>15</sup> and for designing agreements for fair and equitable sharing of benefits arising from the use of genetic resources, known as Access and Benefit Sharing (ABS) agreements<sup>16</sup>, based on the [Nagoya Protocol](#) from the Convention on Biological Diversity and its contribution to climate change mitigation and adaptation, and (ii) conduct a results evaluation and dissemination. This component will finance the following activities: (i) firm consultancy for the design and delivery of a training program on good practices for managing permits for access to genetic and biological resources and the establishment of ABS agreements to institutions responsible for monitoring

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The committee will be chaired by the Bank and will have a combination of professionals with the aforementioned experiences from beneficiary countries and from elsewhere.

<sup>13</sup> The project team will share the results of the Evaluation Committee with IDB Country Representatives, who will issue their non objection for the project to support selected candidate startups/research projects in their countries.

<sup>14</sup> These consulting contracts will have a maximum limit of 10% for the procurement of goods.

<sup>15</sup> The ***Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*** is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way. This protocol, which entered into force in October 2014, sets out core obligations for its contracting Parties to take measures in relation to access to genetic resources, benefit-sharing and compliance. Anyone interested in basic research in biodiversity, bioprospecting or commercial exploitation of products found in biodiversity (chemical compounds, genes, proteins, microorganisms and other products) need to obtain a permit for access to genetic resources or for the use of biological resources respectively, from the national authority of the host country that regulates access to the genetic and biochemical elements and resources of biodiversity (for both in in situ and ex situ conditions).

<sup>16</sup> An ABS agreement is an agreement that defines the fair and equitable sharing of benefits arising from the use of genetic resources. These agreements recognize that bioprospecting frequently relies on indigenous or traditional knowledge, and that people or communities who hold such knowledge are entitled to a share of benefits arising from its commercial utilization.

and safeguarding the biodiversity, and (ii) individual consultancy to conduct a results evaluation and dissemination.

- 3.6 The total cost of this technical cooperation is US\$1,500,000, financed with resources from the NCL. The distribution of costs is presented in the following table:

**Table I. Budget**

Component	Bank / NCL	Total
1. Scientific Research on Biodiversity	\$500,000	\$500,000
2. Incubation of Bio-based Startups	\$940,000	\$940,000
3. Training and Evaluation	\$60,000	\$60,000
<b>Total</b>	<b>\$1,500,000</b>	<b>\$1,500,000</b>

#### **IV. Executing agency and execution structure**

- 4.1 The execution will be carried out by the Bank, through the Competitiveness, Technology, and Innovation Division (IFD/CTI), supported by two individual consultants that will provide technical advice and help coordinate the execution of several activities in components 1 and 2. All activities to be executed under this TC have been included in the Procurement Plan ([Annex IV](#)) and will be contracted in accordance with Bank policies as follows: (a) AM-650 for Individual consultants; (b) GN-2765-4 and Guidelines OP-1155-4 for Consulting Firms for services of an intellectual nature and (c) GN-2303-28 for logistics and other related services. Before this TC executes activities in beneficiary countries, the Bank will obtain non objection letters from the respective official liaison of each country.
- 4.2 **Participation of Country Offices.** Country Offices (COF) will participate actively in the execution of this project in, at least, the following roles: (i) dialogue with participating authorities and agencies involved in the protection of the Amazon biodiversity and scientific research; (ii) dissemination of competitive calls for proposals and startups; (iii) give non objection of candidate research proposals and early-stage startups to be supported by the project, selected based on the results of the evaluation committee; (iv) dissemination of selected research proposals and early-stage startups, and (v) dissemination of the results evaluation and lessons learned.
- 4.3 **Intellectual Property Rights.** Activities supported by Component 1 may generate scientific discoveries of critical importance for the protection of biodiversity, because of its natural and economic value, such as active compounds or genetic properties in species that occur in nature. There are no intellectual property (IP) rights for things that occur in nature but any such discoveries that result from Component 1 will be registered and disseminated following the criteria of the UN Convention on Biological Diversity (CBD) and the Nagoya Protocol, of which three of the beneficiary countries are parties (Colombia signed the Protocol but didn't ratify it). Other activities supported by Component 1 and activities supported by Component 2 may generate inventions or innovations in the form of new technologies, applications or processes, for which the IP rights will be one of the most important intangible assets for their creators. In these cases, the Bank will transfer the IP rights on inventions and innovations to the



research centers and startups that created them under consulting contracts with the Bank, if they make the case that such IP is essential for their commercial development. The Bank will retain the ownership of the IP rights of any other products developed under agreements financed by this technical cooperation. The most important products that this project will generate for the Bank are the mechanisms to foster bioprospecting and bio-based entrepreneurship on renewable biological resources, as well as the results evaluation and lessons learned.

- 4.4 **Coordination with Institutions.** As an experimental project that aims to create evidence and demonstration effect to inform future policy making for the conservation of biodiversity through the promotion of the bioeconomy, it is critical that institutions responsible for bioeconomy and environmental policies, for researching on Amazon biodiversity, for managing permits for access to genetic and biological resources, and for promoting technological innovation and entrepreneurship get actively involved in this project since the start of its execution (see table II).

**Table II. Key institutions responsible for biodiversity, science and technology, and innovation and entrepreneurship in participant countries**

Country	Institution	Role
Colombia	Ministry of Science and Technology	Science, technology and innovation policy, Bioeconomy strategy, and funds for R&D and innovation
	Alexander von Humboldt Biological Resources Research Institute	Research on Amazon biodiversity
	Sinchi Amazonic Institute of Scientific Research	Research on Amazon biodiversity
Peru	Ministry of Environment	Environmental policy and bioeconomy strategy
	Programa Nacional de Desarrollo Tecnológico e Innovación (PROINNOVATE)	Funds for R&D and innovation
	Research Institute of the Peruvian Amazon	Research on Amazon biodiversity
	National Council of Science, Technology and Innovation (CONCYTEC)	Science, technology and innovation policy
Ecuador	Ministry of Environment	Environmental policy and bioeconomy strategy
	ProAmazonía	Promotion of bio-based businesses and seed capital
	National Institute of Biodiversity	Research on Amazon biodiversity
Bolivia	Vice Ministry of Science & Technology	Science, technology and innovation policy
	Universidad Mayor de San Andrés	Research on Amazon biodiversity

- 4.5 To that end, the project team will create two virtual working groups participated by these institutions, one for the execution and monitoring of Component 1 and another one for the execution and monitoring of Component 2. These institutions may contribute to the project by sharing their knowledge and experience in the design of activities (including cultural and social nuances of local communities in each geography), helping disseminate the competitive calls, suggesting experts to join the evaluation committees, and identifying key local actors (public, private, academic

and/or community organization) that may contribute to the success of supported projects and incubated startups. At the same time, these institutions will benefit from the project by getting access to the results that may help them replicate and scale this effort in their countries (operational materials including definition of priorities, evaluation criteria, composition and functioning of evaluation committees, networks of subject matter experts, lessons learned from monitoring and results evaluation).

- 4.6 **Partners.** There are discussions underway with two entities that could participate in this project as partners:
- 4.7 **International Center for Genetic Engineering and Biotechnology.** The [ICGEB](#) is an autonomous intergovernmental organization that runs 46 state-of-the-art laboratories in Italy, India and South Africa, and forms an interactive network with over 65 member states (including Colombia, Peru and Ecuador). Its operations are aligned to those of the United Nations system and plays a key role in molecular biology and biotechnology worldwide for excellence in research, training, and technology transfer to industry in the fields of biomedicine, crop improvement, environmental protection/remediation, and biopharmaceuticals, biopesticide and biofuel production, to contribute to the achievement of sustainable global development. ICGEB is willing to provide advice to the project, through subject matter experts participating in the evaluation committee of Component 1.
- 4.8 **Grid Exponential.** [GridX](#) is a firm dedicated to transform scientific knowledge into biotechnology businesses through a venture builder model, identifying scientific research with economic value, and building teams that mix related scientists with business entrepreneurs. GridX has a track record of success, after building 30 biotechnology companies since 2017, most of them in Argentina. GridX is willing to provide advice to the project, through subject matter experts participating in the evaluation committee of Component 2 and providing advice on incubation services.

## V. Risks and issues

- 5.1 The team doesn't anticipate major risks that could jeopardize the execution of this TC but a few issues could affect the achievement of the project objectives in the estimated disbursement period of 30 months, inherent to the dynamics of the processes for issuing permits for: (i) access to genetic resources (needed in projects supported by Component 1), and (ii) access to biological resources (may be needed in startups supported by Component 2, depending on their targeted TR level). These processes are different in each country, with different response times and more or less clarity and predictability, depending on the case. During the detailed design of this technical cooperation, the project team will analyze existing processes for issuing permits, response times and risks of delays, in order to review the timing of the action plan and design mitigation measures for risks of delays.
- 5.2 **Safeguards to prevent "commodification of nature" and the Nagoya Protocol.** Several elements will allow the project to avoid unsustainable harvesting of resources, its "commodification", or other negative environmental/social impacts:
- 5.3 All beneficiary countries are parties to the CBD convention. Article 15 of the convention asserts that (a) countries have sovereign rights to their genetic resources (section 1),

(b) access to genetic resources shall be subject to prior informed consent of the source country (section 5), and (c) access shall be on mutually agreed terms (section 4).

- 5.4 Bolivia, Ecuador and Peru are also parties of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits. Bolivia, Ecuador and Peru have an ABS National Contact Point, and Peru even has an ABS procedure.
- 5.5 Although Colombia is not a party of the Nagoya Protocol, all four countries are signatories of the Andean Pact (established by the 1969 Cartagena Agreement), which decision 391 sets a framework to (a) create the conditions for fair and equitable sharing of the benefits accruing from such access; (b) establish a basis for the recognition and appreciation of genetic resources, their derivatives and related intangible components, particularly where indigenous, Afro-American and local communities are involved and (c) encourage the conservation of biological diversity and sustainable use of biological resources containing genetic resources.
- 5.6 The project will provide training on good practices for establishing ABS agreements in terms of access procedures, including Prior Informed Consent, Mutually Agreed Terms, the ownership of genetic resources, and the scope of access. Protecting the culture and interests of local communities from which genetic resources have been obtained can be reached through robust ABS agreements and prior informed consent (PIC) from local communities (all 4 countries are parties of ILO convention 169 and have policies in this respect).

## **VI. Environmental and Social Strategy**

There are no environmental or social risks associated with this operation in accordance with the environment and safeguards compliance policy (OP-703), for which the operation is classified as category "C".

### **Required Annexes:**

[Results Matrix - RG-T4005](#)

[Terms of Reference - RG-T4005](#)

[Procurement Plan - RG-T4005](#)