

TC Document

I. Basic Information for TC

▪ Country/Region:	COSTA RICA
▪ TC Name:	Promotion of Technology Guarantee and Technology Appraisals for SMEs with Innovative and Technological Potential
▪ TC Number:	CR-T1275
▪ Team Leader/Members:	Crespi, Gustavo Atilio (IFD/CTI) Team Leader; Radaelli, Vanderleia (IFD/CTI) Alternate Team Leader; Galeano Buitrago Maria Alejandra (IFD/CTI); Barrios Bastardo Andreina Del Carmen (IFD/CTI); Shin Yunjung (IFD/CTI); Vargas Cuevas, Fernando Esteban (IFD/CTI); Castillo Gonzalez Carolina (CID/CCR); Guaipatin, Carlos (IFD/CTI); De Dobrzynski, Esteban (LEG/SGO); Morales Reina Genesis Del Carmen (IFD/CTI)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	01 May 2024.
▪ Beneficiary:	Costa Rica through the Costa Rica's Development Banking System (SBD by its abbreviation in Spanish)
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Public Capacity Building Korea Fund for Economic Development(KPC)
▪ IDB Funding Requested:	US\$325,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	October 2024
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	IFD/CTI-Competitiveness, Technology and Innovation Division
▪ Unit of Disbursement Responsibility:	CID/CCR-Country Office Costa Rica
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Institutional Strategy 2024-2030:	Institutional capacity and rule of law; Productivity and innovation

II. Objectives and Justification of the TC

2.1 **General and Specific Objectives.** The general objective of this Technical Cooperation (TC) is to support the development of a technology guarantee system in Costa Rica by learning from the best practices of the Korea Technology Finance Corporation (KOTEC). Specific objectives are: (i) designing of a Costa Rican Technology Rating System (CTRS) to identify Small and Medium Enterprises (SMEs) with innovation potential; (ii) development of the Costa Rica Technology Guarantee Scheme (CTGS) and a pilot plan for testing the CTRS in the local context; and (iii) sharing knowledge regarding South Korean innovation policy experience with specific recommendations for Costa Rica's policy makers. A technology guarantee system provides technology-based startups and innovative SMEs access to financing that they would otherwise have constraints accessing to and can have a significant impact on technological innovation of these firms. A financial support system for

technological innovation refers to financial policies and instruments that provides firms with funds in the form of loans, equities and guarantees to aim at technical improvements and to conduct innovation activities (BID, 2022).

- 2.2 Costa Rica is a country in Central America between Panama and Nicaragua with 5.5 million people and a nominal per capita income of US\$13,090.¹ Costa Rica's economic growth performance has been remarkable. Over last 20 years average growth (4.5% annual) has been above the Latin American and the Caribbean (LAC) average (2.5% annual).² Despite this there are persistent problems that hinder future growth perspectives and partially explain a growing inequality that compromises forthcoming social and institutional stability. First, there is persistent gap in infrastructure;³ second, there is a decline in human capital (which used to be a strength of the country);⁴ and third, domestic innovation capabilities are still weak.⁵ On top of this, there is a growing geographical inequality with around 70% of the Gross Domestic Product (GDP) concentrated in the Great Metropolitan Area (GAM by its abbreviation in Spanish) around San Jose, the capital. The economic structure of Costa Rica shows all the features of a dual economy. There is an "old" economy with low growth, limited diversification, and productivity (mainly explained by SMEs operating in natural resource-based sectors -such as agriculture, food and fishing-, basic metalworking and traditional services) but that explains 85% of the GDP and a "new" economy which is very dynamic, diversified and based in high technology sectors (explained by subsidiaries of multinational corporations in sector such as semiconductors, medical devices, and business services) that is responsible for 15% of the GDP. The country has 137,378 registered firms of which 133,845 are SMEs (97.4%)⁶ although very few of them have the minimum productivity to become part of the "new" economy.⁷ Costa Rica's Development Banking System (SBD by its abbreviation in Spanish) could become the right institution to help SMEs to close the productivity gap between the old and new economy sectors.⁸
- 2.3 Despite Costa Rica having good indicators of financial inclusion, most of the financing provided by private and commercial banks focuses on consumption and housing with just 8% of lending allocated to productive development projects. The commercial banking market is very risk averse, so entrepreneurs that start high risk projects (as

¹ World Bank (2022).

² During the COVID-19 pandemic there was a decline of 4.1% of GDP in 2020 which was followed by a recovery of 7.1% in 2021 mainly explained by foreign investment. The tourism sector was strongly shocked by the recession, and it has not recovered so far. The SMEs were severely affected.

³ Costa Rica is 63/141 in the WEF infrastructure ranking.

⁴ High levels of repetition and dropouts in secondary schools together with a mismatch between talent demand and supply.

⁵ According to the last Global Innovation Index (2022), Costa Rica descended from the place 55th to the place 68th of the Global Innovation Ranking moving from the 3rd to the 7th place in the region.

⁶ Ministry of the Economy, Industry and Commerce (MEIC, 2019).

⁷ Different estimates suggest that for those SMEs that are close to the minimum productivity required to operate in the "new" economy (for example as a supplier of the multinational), the productivity gap is at least 10% (Ons, 2021).

⁸ Evaluation Commission of the SBD (2022)

the ones related to innovation and technological upgrading) and do not have enough collateral are excluded from a market which basically is known in the country as one of “banks of guarantees”. On the other hand, the capital market is reduced with 90% of the funds invested in public debt bonds. Because of this 90% of SMEs finance their technological modernization and innovation projects by reinvesting their own dividends, with only 7.6% of them getting innovation financing from commercial banks and just 1.2% receiving financing from the public sector.⁹ Of the innovative SMEs, about 35.1% report severe problems for accessing to financing due to the lack of collateral (MICITT, 2022). Of course, financing is not the only factor affecting innovation by Costa Rica’s SMEs as the imitation by third parties (37.1%) and the lack of enough technological information (27.7%) are other important obstacles (MICITT, 2022). In summary, Costa Rica’s SMEs face three specific problems to modernize and innovate: (i) low access to finance; (ii) low appropriability of the returns to innovation; and (iii) low deployment of technology information and assistance services. Each of these obstacles should be tackled with a different and specific policy intervention: (i) technological guarantees in the case of low access to finance; (ii) soft loans in the case of appropriability problems; and (iii) extension services in the case of technological information.¹⁰

- 2.4 To tackle these problems, Costa Rica established the SBD in 2008 by Law 8634. According to its legal mandate SBD must fulfill 10 strategic objectives of which five are related to: (i) credit supply for productivity; (ii) innovation financing; (iii) regional productive development; (iv) entrepreneurship; and (v) suppliers and value chains promotion. The other 5 remaining specific objectives are mostly related with fostering financial inclusion. Since 2008 the SBD has managed to finance 63,000 SMEs, of which 37% are first time borrowers of the financial system. Currently the SBD represents 2.4% of national financial system lending and 33% of lending to SMEs. Despite this progress, most SBD’s activity has focused on the strategic objectives related to financial inclusion. As the National Assembly SBD Evaluation Commission indicates: “The SBD has not managed so far to build an integrated portfolio of financial and non-financial instruments for the support of entrepreneurship, value chains and innovation”.¹¹ The SBD must grow its productive development arm by offering new financial instruments and services that specifically tackle the obstacles that entrepreneurs face to start a technology-based business, that provide soft financing to SMEs innovation projects with high externalities and the provisions of technological guarantees to SMEs with growth potential.

⁹ Public financing programs are currently very limited due to the budget constraints that the Government faces under the new fiscal rule implemented under an Extended Facilities Program with the International Monetary Fund (IMF). According to it, it won’t be until after 2027 that public programs funded through the national budget will be revamped. Mobilizing private financing by using the SBD’s capital will be critical during this transition.

¹⁰ In Costa Rica this is responsibility of the National Learning Institute (INA by its abbreviation in Spanish). However, the extension system is still in its early stage of development with low integration with the other SMEs programs.

¹¹ Evaluation Commission of the SBD (2022).

- 2.5 The main asset managed by the SBD is the National Development Fund (FONADE by its abbreviation in Spanish), which operates under a second-tier scheme, that is, it requires accredited financial operators to be able to reach the beneficiaries of Law 8634. FONADE provides guarantees program to SMEs to facilitate access to credit and improve financing conditions for the beneficiaries of the Law. Guarantees are a fundamental tool to facilitate access to credit since they act as a collateral that reduces the risk perceived by financial institutions, allowing projects to access financing more efficiently. Between 2008 and 2023, the SBD through FONADE has guaranteed approximately 6,000 loans for SMEs. Despite this, the current guarantees system faces challenges. In particular, when it comes to innovative projects, additional complications arise. These projects often feature technological uncertainty, are based on intangible assets that cannot be used as collateral, face specific risks, and are structured based on disruptive business models that do not always fit the traditional credit assessment approach used at the SBD. The current guarantees system is fundamentally based on the historical trajectory of the company and the existence of fixed assets, and this does not fit well with the case of new companies based on intangible assets. For them, it is necessary to incorporate new methodologies into the system that allow evaluating the company's future growth prospects and the robustness of its business model. Therefore, this project seeks to improve and sophisticate the existing guarantees system, incorporating a new financial product offered to innovation-based start-ups and SMEs which currently are not served.
- 2.6 In developed countries and several LAC countries, governments are attending the problems of SMEs innovation and technological modernization financing with specific programs implemented by National Development Banks. In the case of South Korea, the KOTEC, also known as KIBO, was established in 1989 to facilitate technology financing to innovative SMEs and to address the financing gap faced by the technologically viable but credit-constrained SMEs. KOTEC is a government-affiliated institution under the Ministry of SMEs and Startups (MSS) that provides services of credit guarantee, technology appraisal, guarantee linked equity investment, technology transfer, and management advice. KOTEC has provided technology appraisal services since 1997 and has developed its own technology rating system, known as KOTEC Technology Rating System (KTRS), to assess the commercial viability of the growth potential of innovative SMEs and technology-based start-ups according to its management, technology, competency, marketability, and business prospects. KTRS is widely recognized as the best practice quantitative technology assessment tool to reduce information asymmetry regarding the prospect of a technology and to predict the growth potential of a business or start-up. In addition, the KTRS rating grade has not only been a good indicator of potential insolvency, but it has also shown significant performance in predicting and distinguishing companies with future success (such as increased revenue). From its inception in 2005 until 2022, KOTEC has performed 840,241 technology appraisals and supported technology guarantee backed investments for US\$340 billion (the outstanding guarantees amount to US\$22 billion). KOTEC also has experience in transferring its technology appraisal system abroad and conducting joint research with partner organizations. Specifically,

it developed a technology appraisal tool called InnoRate through joint efforts with the European Commission (EC) under the Horizon 2020 Program from 2019 to 2022 and has conducted Knowledge Sharing Programs (KSP) in Vietnam (2015), Thailand (2016), and Peru (2017, 2023). Learning from KOTEC and its different programs and financial products will be a massive benefit for the SBD to fulfill with its development mandates.

- 2.7 In terms of KOTEC's antecedents in the region, KOTEC designed the Peruvian Technology Rating System (PTRS) through a Knowledge Sharing Program from 2017 to 2018. In 2023, they tested the rating system developed to the local context through technical cooperation [ATN/KK-19857-PE](#). To this effect, the designing of a Costa Rican Technology Rating model will contribute to continuing the accumulation of lessons learned on favorable policy environments and bottlenecks upon which relies a successful implementation. Upon the completion of two projects, IDB and KOTEC may jointly publish the outcomes of two country cases and spread the lessons learned for continued diffusion of KOTEC's expertise in technology rating and guarantee schemes and its implementation in the region.
- 2.8 **Strategic alignment.** This project is consistent with the IDB Group's Institutional Strategy: Transformation for Greater Scale and Impact (CA-631) through the objective of promoting sustainable regional growth since it seeks to strengthen the access of innovative SMEs and start-ups to finance for their innovation and upgrading projects. The proposal also aligns with the operational focus areas of: (i) institutional capacity, rule of law and citizen security; and (ii) productive development and innovation through the private sector. It is also aligned with the Sectoral Strategy on Institutions for Growth and Social Welfare (GN-2587-2) and with the Sectoral Framework Document on Innovation, Science and Technology (GN-2791-13) regarding the importance of strengthening private innovation investment in the region. As for the IDB Group's Country Strategy 2019-2022 (GN-2977)¹², the project contributes to improving productivity and reducing production gaps. The project is also aligned with the main purpose of the KPC fund which is to strengthen public sector management in all fiscal related sectors through assistance aimed at facilitating efficient allocation and use of public sector resources to generate higher public value at the national and the sub-national government level in the borrowing member countries of the IDB. More specifically, it aligns with the KPC eligible of planning and adjustment of national policies (financial strategies and budget).
- 2.9 **Gender Considerations.** Although the project does not address the gender problem in private innovation decisions, it will ensure a gender balance in the corresponding training and learning activities.
- 2.10 **Climate Change Considerations.** Although the mitigation and/or adaptation of climate change is not a direct objective of the project, most of innovation and upgrading projects pursued by start-ups and SMEs will lead to cost reductions and to the diffusion

¹² Extended until December 31st, 2024 (GN-2977-2).

of more efficient products, favorably impacting a reduction in greenhouse gas emissions.

III. Description of activities/components and budget

- 3.1 Component 1: Design of a Costa Rican Technology Rating System (CTRS) and capacity building for its management and recalibration (\$150.000,00).** To efficiently identify innovative SMEs with good technology and market potential a scoring system should be devised in order to inform decision makers for guarantee issuance. Different from traditional finance-based scoring methods, a technology rating system measures the future growth potential of firms and technologies, as well as their likelihood of insolvency, thereby determining the feasibility of technology commercialization. In the case of Costa Rica, this rating system should be developed considering that there are currently no established technology scoring methodologies in the country to identify remarkable technology SMEs and that there is also a lack of procedures and methods to carry out a technology appraisal specialized in innovative SMEs. Therefore, based on the KTRS experience and the current situation in the country, the following activities will be carried out under this component: (i) the design of the model for a Costa Rica Technology Rating System (CTRS) including conceptual framework, evaluation metrics, rating algorithm and overall rating system; (ii) the design of a set of indicators, including their respective weights, needed to operationalize the CTRS model taking into consideration both country's culture and industry, including detailed guidelines to compute the indicators. The definition of the final set of proposed indicators will be based on the experience of the few organizations in the country that carry out the evaluation of technology projects, such as the Costa Rica's Innovation and Research Promotion Agency (PROINNOVA), the Costa Rica's Trade Promotion and Investment Agency (PROCOMER), and the National Learning Institute (INA); and (iii) capacity building and training activities on management and recalibration of the CTRS model in collaboration with experts in charge at the SBD.
- 3.2 Component 2: Design of the Costa Rica Technology Guarantee Scheme (CTGS) and a pilot plan for testing the CTRS (\$75.000,00).** The focus of this component will be the development of a proposal about a technology guarantee scheme that will have to be put in place in order to operationalize the CTRS. Under this component the following two activities will be carried out: (i) a diagnosis of the institutional capacities of Costa Rican organizations that should collaborate in the implementation of the CTRS. The primary organization leading the process will be the SBD, but this should be complemented through an assessment of relevant organizations that could support SBD, particularly with the technology assessment dimensions of the CTRS. These include, in particular, PROINNOVA; the National Center of High Technology (CENAT) and the Costa Rica's Technology Institute (TECH); and (ii) based on this diagnosis an operational model for the CTRS will be proposed and follow by a pilot plan to roll over the newly developed CTRS in a controlled sample of firms. The executing agency of the pilot plan will be the SBD and the resources will come from the FONADE managed by the SBD.

- 3.3 Component 3: Benchmark study, dissemination seminar and joint publication (\$100,000,00).** The KTRS does not operate in a vacuum but within an ecosystem of other policy tools and a business environment that encourages innovation. The purpose of this component is to provide the essence of Korea’s experience in innovation support policy since 1960s as a useful reference for Costa Rica’s policymakers and to propose innovation policy directions appropriate for the country reality and environments. Under this component the following activities will be implemented: (i) a benchmark study on Korea’s innovation policies including the experience from Korea’s rapid economic development since the 1960s, including the national policy flow and achievements in supporting technology-based SMEs through technology finance, which began in earnest in the 1990s. The basic structure and characteristics of the current innovation support programs managed by the Ministry of Trade, Industry and Energy (MOTIE) and the MSS will be also explained. Based on the lessons learned and field work findings from interacting with Costa Rican counterparts during the KOTEC’s missions for the previous components, and taking the Korean experience as a benchmark, a set of policy recommendations for the Costa Rican authorities will be prepared on how they could improve the effectiveness of the innovation policies in the country; (ii) a final dissemination seminar will be delivered with high- level policy makers in order to discuss the policy recommendations of the benchmark study, to socialize the new CTRS developed and to seek for political support for the scaling-up of the scheme for future piloting. This component will also finance knowledge exchange missions between South Korea’s and Costa Rica’s public officers as needed; and (iii) the publication of a joint IDB-KOTEC report compiling the experience and lessons learned for the implementation of the KTRS model in Peru and Costa Rica in order to disseminate the findings across the LAC region.
- 3.4** The total cost of the project will be US\$325,000.00 financed by the IDB through the KPC Fund. The following table presents a breakdown of the budget by components and activities.

Indicative Budget

Component	Description	IDB/Fund Funding	Counterpart Funding	Total Funding
Component 1	Design of a Costa Rican Technology Rating System (CTRS) and capacity building for its management and recalibration	150,000.00	0.00	150,000.00
Component 2	Design of the Costa Rica Technology Guarantee Scheme and a pilot plan for testing the CTRS	75,000.00	0.00	75,000.00
Component 3	Benchmark study, dissemination seminar and joint publication	100,000.00	0.00	100,000.00

TOTAL		325,000.00	0.00	325,000.00
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IV. Executing agency and execution structure

- 4.1 This TC will be executed by the Bank upon request of the beneficiary. This is based on the Bank's capacity to implement technical cooperation projects, its knowledge to identify highly qualified international consultants, and its experience in similar operations among different countries in the region. Bank's execution is in compliance with the section 4.5 of the TC Policy which requires, in case of Bank-executed TCs, that: (a) the beneficiary country or group of countries concurs; and (b) the proposed activities are consistent with the Bank's country and /or regional strategy and program. Currently, the SBD lacks previous experience regarding the execution of technical cooperations (and related contracts) which involved peer organizations from developed countries. Developing these capabilities could take a steep learning process that could compromise the implementation of the current project. In this context and in line with the criteria established in Annex II of the Procedures for Processing Technical Cooperation Operations (OP-619-4), this project will be executed by the Bank, through the CTI Division, given its experience in the area of this TC to achieve a timelier implementation and an independent review of the different consultancies financed.
- 4.2 All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.
- 4.3 In this TC, the Korea Technology Finance Corporation (KOTEC) will be hired through Single Source Selection due to the originality of the technology rating system as the world's first public agency developing such mechanism, which is already patented, and robust track records in issuing technology guarantees to technology and innovation SMEs in Korea and other developing countries through its wide global partnerships. This meets the exception, "when only one firm is qualified or has experience of exceptional worth for the assignment and it presents a clear advantage over competition", as specified in the GN-2303-33.

V. Major issues

- 5.1 A risk with the implementation of this TC is that the Government of Costa Rica disagrees with the recommendations emerging from the studies and so does not move forward with the policy implementation of them. To mitigate this risk, the project team will be deeply involved in the dialogue with the SBD and with its Board to accompany the process of discussion and assimilation of the different policy recommendations. Essentially, the core of this project is to transfer the expertise developed by the KOTEC over the past two decades in the field of technology guarantee systems and technology appraisal systems through Technical Cooperation (TC). Therefore, this project will be

flexibly designed to suit the local conditions of Costa Rica, considering the policy direction of the Costa Rican government, the economic status, and the opinions of local operating agencies.

VI. Exceptions to Bank policy

6.1 No exceptions to Bank policy are envisioned for this TC.

VII. Environmental and Social Aspects

7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes:

[Request from the Client_32143.pdf](#)

[Results Matrix_48897.pdf](#)

[Terms of Reference_9600.pdf](#)

[Procurement Plan_9136.pdf](#)