

## TC Document

### I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	The Open Integrated Economic-Environmental Modeling Platform (Open IEEM)
▪ TC Number:	RG-T4530
▪ Team Leader/Members:	Murguia Baysse, Juan Manuel (CSD/RND) Team Leader; Levy, Denise Urias (CSD/RND) Alternate Team Leader; Centeno Lappas, Monica Clara Angelica (LEG/SGO); De Salvo, Carmine Paolo (CSD/RND); Bonilla Merino Arturo Francisco (LEG/SGO); Chavez, Elizabeth (CSD/RND)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	
▪ Date of TC Abstract authorization:	March 27, 2024
▪ Beneficiary:	Ecuador, Costa Rica
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	OC SDP Window 2 - Sustainability(W2A)
▪ IDB Funding Requested:	US\$275,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months (same for both periods)
▪ Required start date:	September 2024
▪ Types of consultants:	Firms and individuals
▪ Prepared by Unit:	CSD/RND-Env, Rural Dev & Disaster Risk
▪ Unit of Disbursement Responsibility:	CAN/CEC-Country Office Ecuador
▪ TC included in Country Strategy (y/n):	N
▪ TC included in CPD (y/n):	N
▪ Alignment to the Institutional Strategy of the IDB Group (CA-631) 2024-2030:	Environmental sustainability

### II. Objectives and Justification of the TC

2.1 The Integrated Economic-Environmental Modeling (IEEM) Platform (designed with RG-T3626) is a decision support system that integrates the value of natural capital into public policy and investment. The latest advances in methods have linked IEEM with spatial ecosystem services modeling (IEEM+ESM) enabling estimation of policy impacts on indicators such as Gross Domestic Product (GDP), income and employment, but also on wealth, natural capital, and ecosystem services, all in a quantitative, comprehensive and consistent framework. The consistency of IEEM+ESM results with the System of National Accounts, the global standard for tracking economic growth, is a particularly powerful feature for communicating results and policy advice with Governments. The IEEM+ESM Platform has been subject to external scientific peer review and validation through numerous leading scientific journals in the field of economics, as well as the IDB's own peer review process (on

the [Open IEEM Platform](#)). The IEEM+ESM Platform is the first of its kind and is gaining global recognition as the cutting edge of integrated economic-environment analysis for sustainable economic development policy design.

- 2.2 IEEM insights enable decision-makers to quantitatively assess synergies and tradeoffs in strategies and investment portfolios to achieve complex policy goals including those embodied by national development plans, climate agreements, the Sustainable Development Goals, and green growth targets. Results are spatially explicit which significantly enhances its potential for place-based and spatial targeting of public policy and investment. At the IDB, IEEM is being applied as a core platform for the assessment of the economic viability of Sovereign Guaranteed Operations and is gaining traction as a tool that can be deployed rapidly by country economists in responding to urgent questions of public policy.
- 2.3 IEEM is being applied in various countries in the region by government institutions including Central Banks to inform public policy and decision making. For example, in Costa Rica, IEEM was applied to examine the economic and environmental impacts of decarbonization, liberalization of the rice market and reductions in fuel taxes, and the impact of the COVID pandemic in the economy. In Colombia, IEEM was used to evaluate green growth strategies and the implementation of a payment for ecosystem services program. In Guatemala, IEEM was applied to analyze different strategies to make progress towards the Sustainable Development Goals. In Brazil, IEEM was used to estimate the impact on deforestation reduction of the policy reforms included in the PBL “Decarbonize Para” (BR-L1613). One key lesson learned from previous IDB investments in IEEM is the importance of seeking champions within government institutions and the Bank’s country offices for collaborating in pushing the IEEM agenda forward. While good intentions and strong motivation are important, prior experience with economy-wide modeling frameworks is highly desirable and facilitates IEEM application immensely.
- 2.4 Efforts have been made with the support of RG-T3626 to expand the user-base of IEEM through development of Open IEEM which is an online platform that enables open access to all IEEM tools including IEEM models, databases, technical guides, and a suite of parameterized ecosystem services models. Efforts were made to inform and create demand for IEEM, as well as customize tools for the specific conditions and demand of countries in the region. With that TC it was possible to: (i) advance the development of IEEM+ESM and its application in the region by customizing IEEM and ecosystem services modeling tools for 10 countries, working on partnerships with government institutions to customize IEEM+ESM models and co-develop applications like in the case of the Central Bank of Chile; and (ii) disseminate IEEM through advancing the development of the Open IEEM Platform and building capacity for its use in the region in collaboration with the Natural Capital Lab, including among others a 2023 in person and online course in collaboration with the Central Bank of Chile and the Catholic University of Chile with more than 400 participants inscribed of 59 institutions across the world (17 from LAC).

- 2.5 This TC's value-added is that it will increase the supply of consultants that are trained to use the Open IEEM platform to respond to the increasing demand of studies using the Open IEEM platform in the region with is a current bottleneck to increase the impact of this tool. It also catalyzes current activities to develop the IEEM Platform and encourages its use in governments and the IDB. For example, the impact evaluations of the Policy Based Loans "Support to Costa Rica's Decarbonization Plan" (CR-L1142) and "Sustainable Growth and Resilience Program I and II" (CO-L1264 and CO-L1274) require the application of the IEEM.
- 2.6 The general objective of this TC is to continue supporting country offices in their dialogue with policymakers to provide a technical solution on the understanding of all the economic and environmental implications of public policies and investment, through the models and materials developed through the Integrated Economic-Environmental Model (IEEM) Platform. The specific objectives are to: (i) support Country Offices in coordination with country economists on policy dialog with policymakers on economic and environmental issues through training and analyses (86% of the TC funds); and (ii) maintain and improve the Open IEEM Platform project (14% of TC funds).
- 2.7 This TC is aligned with the Bank's Institutional Strategy (CA-631-1), specifically, to the core objective of addressing climate change and the focus area of Biodiversity, Natural Capital and Climate Action by promoting the transition to nature-positive models, the integration of biodiversity values into policies, standards, and fiscal planning, support for regulatory coherence across sectors, and harnessing the financial capacity of the public and private sectors to drive investments in sustainable development. The IEEM Platform enables IDB operations to target protection and enhancement of natural capital and environmental services in a quantitative way and unambiguous way. This TC is aligned with the IDB's Sector Framework Document for the Environment and Biodiversity (GN-2827-8) which proposes continued development and application of IEEM and by strengthening environmental governance and promoting integrated management, focusing on ecosystems, and the valuation of ecosystem services. It is also aligned with the Natural Capital and Biodiversity Mainstreaming Action Plan (GN-3216-1) by supporting the objective of: (i) advancing the integration of biodiversity dimensions in country dialogues; (ii) integrating (formally and systematically) biodiversity/natural capital as elements (activities) of IDBG-financed operations whenever possible; and (iii) generating country-specific knowledge and building capacity for effective biodiversity mainstreaming. Integrating natural capital and the environment in policy and decision-making is precisely the value-added of the IEEM+ESM Platform when compared with other decision support systems. Likewise, it is aligned with the Ordinary Capital Strategic Development Program (OC SDP) (GN-2819-14) Window 2 Priority Area 1: Climate Change and Environmental Sustainability by expanding the knowledge base on climate change mitigation, adaptation, and sustainable energy geared towards leveraging climate investment; by supporting the cross-cutting issue of Climate Change and Environmental Sustainability

by integrating climate considerations into the Bank's operations to advance low carbon and resilient interventions using the Open IEEM Platform.

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

- 3.1 This TC consists of two main components, specifically:
- 3.2 **Component 1: Policy Dialog, training, and analysis.** This component will support the training of governments, universities, and consultants to increase the possibility to implement studies using the Open IEEM platform. Training materials will be available at [Open IEEM Platform – Building Capacity](#). As a result of and to incentivize the participation and completion of this training a call for research proposals is included as a complement of the course to address needs identified with the support of country economist to select the topics to be included on the proposals call. For this reason, it is not possible ex-ante to know the countries that will benefit directly from this component, until the research proposals are selected. The entire LAC region is expected to benefit though the participation on the online course. Additionally, to continue supporting operations that are using the Open IEEM platform and COF dialog with the governments, this component also includes the financing of up to two studies to attend this issue.
- 3.3 **Component 2: Open IEEM platform technical support.** This component provides support to maintain the Open IEEM platform that are required for the platform to be active online. This includes the web page maintenance, and actualizations to the Open IEEM platform models to increase their capabilities.
- 3.4 **Budget.** The total cost of this project is US\$275,000 financed by OC SDP Window 2 - Sustainability(W2A). There is no counterpart financing for this technical cooperation.
- 3.5 The table below provides an overview indicative budget for the TC and its components.

### Indicative Budget

Activity/Component	Description	IDB/Fund W2A - OC SDP Window 2 - Sustainability	Counter part Funding	Total Funding
<b>Component 1: Policy Dialog, training and analysis</b>				
Course on Macroeconomic Modeling and Natural Capital: Open IEEM Platform project	Online and in person course on Open IEEM Platform and mentoring	35,000	0	35,000
Open IEEM Course Research proposal financing	At least 2 research proposals from the students that complete the course will be selected in topics relevant to the country offices interested	75,000	0	75,000
Open IEEM analyses to support COF dialog with clients and impact evaluations of operations	Up to two studies and/or impact evaluations (at least one published as IDB discussion paper)	120,000	0	120,000
Total component 1		230,000		230,000
<b>Component 2: Open IEEM platform technical support</b>				
Open IEEM web page annual maintenance	IT support for the web page to be active	15,000	0	15,000
Open IEEM actualization	Coding updates to the Open IEEM platform	30,000	0	30,000
Total Component 2		45,000	0	45,000
Total		275,000	0	275,000

#### IV. Executing agency and execution structure

- 4.1 Given this TC's regional character and antecedents, the IDB is the executing agency for this TC. The beneficiary countries have specifically requested that the Bank executes this TC. The Open IEEM Platform was initially developed by the IDB in 2014 and its continued methodological advances and dissemination have been led by the IDB due to the highly specialized and innovative nature of IEEM tools. The IDB has a strategic vision for the IEEM project and has implementing this vision since the

project's inception. The IDB has funded the development of IEEM through dedicated resources of two Technical Cooperations and two completed Economic Sector Works. In addition, funding has been allocated to IEEM application on a project-specific basis for the evaluation of IDB operations and policy advice. Requests have been routinely made for the IDB to provide support to beneficiary governments in customization of the IEEM Platform, as well as collaboration on IEEM application and capacity building.

- 4.2 It is expected that in the medium run, the IEEM Platform will take on a life of its own, particularly through the development of Open IEEM which is supported by this TC. Specifically, once IEEM has reached critical mass in the region, different modes of support will become feasible. Increasingly, experts in the region outside of the IDB are gaining capacity in IEEM and thus will be well-positioned to undertake public policy and investment analysis with IEEM for government and other institutions. Greater expertise in the region could enable south-south cooperation arrangements and support to arise. At this stage, IDB support may be provided on a very targeted basis such as organizing capacity building sessions or further advancement of IEEM methods, for example. Efforts to apply IEEM in the economic analysis of IDB operations will continue. Nonetheless, this process takes time; building human capacity is not a short-run commitment. As an example, after three years of engagement with the Central Bank of Costa Rica, this institution has adopted IEEM as the tool of choice for evaluating various questions of public policy.
- 4.3 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: (i) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (ii) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines".
- 4.4 In the event that a specific study is requested in another country, the Bank will obtain the No Objection letter from the respective country. To participate in training, this letter will not be necessary.

## **V. Major issues**

- 5.1 There are no major issues to discuss though one concern involves maintaining IDB policies and protocols for continuing Open IEEM online. To mitigate the risk of continuing the Open IEEM Platform public, the TC includes funding to fulfill IDB present and possible future requirements.
- 5.2 One potential risk to this TC is related to the maintenance of the Open IEEM Platform. It is anticipated that the IDB will be the appropriate manager of this public good and maintain Open IEEM in the short run based on the resources of this TC and in the long run as long as the Bank continues funding it with future TCs.

## **VI. Exceptions to Bank policy**

- 6.1 None.

## **VII. Environmental and Social Aspects**

- 7.1 This TC has an ESG classification of Category C.
- 7.2 This Technical Cooperation is intended to finance studies of specific investment and policy reform projects as described on Component 1 (paragraph 3.2) ; therefore, the

terms of reference and products of this TC will be consistent with the applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

- 7.3 According to the Bank's Environmental and Social Policy Framework (ESPF), there are no minimum, or no environmental and/or social impacts associated with this operation. The Environmental and Social Impact Category for this operation is "C". Environmental and Social Performance Standards (ESPS) 1, 2 and 10 were triggered and actions will be considered during project design, considering the management system given by the local regulatory framework and the preparation by the borrower of an Environmental and Social Management System (ESMS) in accordance with the scope and nature of the expected impacts and risks associated with the operation.

**Required Annexes:**

[Request from the Client\\_20931.pdf](#)

[Results Matrix\\_74521.pdf](#)

[Terms of Reference\\_45994.pdf](#)

[Procurement Plan\\_63051.pdf](#)