

The Open Integrated Economic-Environmental Modeling Platform (Open IEEM) (D2419)

Description:**General Objectives**

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.

Specific Objectives

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); (ii) maintain and improve the Open IEEM Platform project (14% of TC funds).

Submitted by:

Marisol Inurritegui Maurtua

Submitted on:

11/29/2023

Status:

Submitted

Category:

Client Support

Tags:**Linked Ideas:****Whiteboard:****Team Leader Name**

Juan Manuel Murguía

Alternate Team Leader Name

Carmine Paolo De Salvo

Has the proposal been discussed and authorized by the responsible sector or country department/division, as applicable?

Yes

Team Leader Responsible Department

CSD

Are there specific countries that will directly benefit from your proposal?

Yes

Mark the specific countries that will be directly benefited from your proposal?

Argentina

Brazil

Chile

Colombia

Costa Rica

Ecuador

Uruguay

Where applicable, describe how the proposal aligns with the respective country strategy (for each country selected)

Uruguay: the OPEN IEEM platform is aligned with the country's strategy for sustainable productive development. Among the priority areas of the country strategies proposed by the IDB, the management of the effects of climate change is particularly highlighted. This effort continues the support provided to the Ministry of Environment through the TC "Support for the Environmental Management Strengthening Program of MVOTMA"(UR-T1209) that allowed the implementation of Open IEEM for the design of changes in the tax incentives associated with the use of phosphate fertilizers to reduce water pollution in the basin that provides fresh water to half of the country's population. In this sense, Uruguay's country strategy is correctly aligned with the OPEN IEEM proposal, as it can enhance joint work that provides favorable results.

Argentina: the OPEN IEEM platform is aligned with the country's strategy aimed at macroeconomic stability and the efficiency of public policies. It is mentioned that the high projections regarding climate change will affect several economic sectors, where agriculture particularly stands out. It is worth mentioning that the country is developing an approach that curbs the current and future consequences of climate change, as they consider that it affects production systems.

The Bank has contributed to the inclusion of sustainable dimensions in agricultural management, as well as significant infrastructure improvements through its programs related to natural resources. Among the activities carried out, it is worth highlighting the rehabilitation of 123.6 km of irrigation infrastructure, the improvement of infrastructure in 23,228 hectares and pressurized irrigation technologies for 1,600 producers. The impact of these advances can be measured through the models developed within the OPEN IEEM platform, and can also be a source of support in the design stage of such approaches.

Therefore, the models developed within the OPEN IEEM platform serve as support in the design of such approaches.

Brazil: The OPEN IEEM platform is aligned with the country's strategic objective of promoting national and international integration to boost productive capacity, in addition to incorporating the objective of reducing social inequality and lack of opportunities by improving the efficiency of public policies.

Within the context of natural resources, it is mentioned that although agriculture is a central sector in the North and Northeast, it poses significant productivity, competitiveness, and sustainability challenges. The CDC notes that sustainable agriculture could be a path to increasing the competitiveness of less developed regions by creating jobs and income. However, the sector presents different challenges. In the last 10 years, substantial agricultural losses have been incurred as a result of the introduction of at least 35 new pests. Furthermore, the expansion of farming has been the main driver of land-use change (deforestation), greenhouse gas emissions, and water pollution. In the depressed states and in the North and Northeast regions in particular, much remains to be done in the areas of agricultural research, technical assistance, rural extension, credit programs, irrigation infrastructure, road connectivity and logistics. Institutional and organizational restrictions have reduced the impact of some agricultural and rural programs. Finally, climate change represents one of the greatest risks for the future of agricultural productivity.

The implementation of OPEN IEEM will allow continue studying the expected impact of PBLs in the Amazon, such as in operation BR-L1613 "Decarbonize Pará" where its main objective is the decarbonization of the State of Pará. In addition, the challenges involved in mitigating greenhouse gases highlight that recurrent droughts and floods place the productive sector at risk. In this sense, OPEN IEEM can help design an impact model of a policy or investment aimed at the preservation of the environment.

Colombia: The strategic objective to which the proposal is aligned is to increase productivity and improve the effectiveness of public management. In this sense, it is proposed to support the institutional and productive transformation of Colombia and the promotion of social mobility. Based on the country's strategic objective to be analyzed, the strategy is broken down by priority area, which is aligned with the proposal for the continuity of the OPEN IEEM platform. In this sense, it seeks to support policy proposals to increase agricultural productivity and the complexity of the export basket, reorient public spending in the sector towards the provision of public goods, regularize land ownership and encourage private investment in rural areas, incorporating climate-smart agricultural practices and improving access to and participation of production in local markets and value chains World.

It is necessary to mention the contribution of the work "The Value of Biodiversity in Economic Decision-Making: Applying the IEEM+ESM Approach to Conservation Strategies in Colombia" which focuses on evaluating the economic impacts of natural capital and ecosystem services of natural conservation strategies in Colombia. The study takes into consideration different proposals for government programs aimed at establishing payment for ecosystem services (PES), the implementation of sustainable silvopastoral systems and the expansion of habitat banks in order to expose their multidimensional impacts, using the integrated environmental economic modeling platform (IEEM). Thanks to the IEEM+ESM methodology, it was observed that by 2040 investment in housing banks would generate 1,607 million dollars in additional wealth, thus justifying the use of the IEEM approach in the formulation of policies that seek to maximize economic, social and environmental results. We hope to contribute to Colombia by building additional capacity to use IEEM OPEN at the national level.

Ecuador: The country strategy that is linked to the objective of prolonging the activity of the OPEN IEEM platform proposes the development of the productive sector as an engine of sustainable growth. Added to this is the strategic objective of the priority area, where the productive development of the Ecuadorian Amazon region is emphasized.

According to one of the points of the socioeconomic context in the country strategy, Ecuador is among the areas with the highest climate risk. In this regard, it is noted that climate change has adversely affected the productivity of certain sectors, such as coffee, bananas, shrimp and cocoa. In this way, the uncertainty around investment projects has increased, resulting in an entrepreneurial ecosystem (small businesses) with low levels of productivity, which are accompanied by low levels of productivity.

Undoubtedly, the OPEN IEEM platform is the most viable tool for the case of Ecuador, since the IEEM model can provide an analysis of public policies and investments that seek to boost the country's productivity with an environmental approach. It has been used previously, in collaboration with the country's economist, to address the expected effects of policy reforms on the labor market.

Chile: The strategic approach to the OPEN IEEM platform is based on the promotion of social cohesion and inclusion and the enablement of the economy of the future. The national strategy indicates actions to combat climate change in the country through Chile's 2022 Framework Law on Climate Change, which sets the goal of achieving a resilient economy that maintains a carbon-neutral level by 2050. In a way, this objective implies a challenge in the coordination of public spending on climate solutions, since it must be taken into account that it seeks to maximize the economic and social benefits of decarbonization, as well as minimize or offset the social costs of the climate agenda. Among the actions in which the Bank participates are support for the national circular economy agenda, the design of a resilient water supply and the creation of the Chilean Nature Fund – the latter will leverage private resources to finance biodiversity conservation.

Based on the above, the OPEN IEEM platform can estimate the impact of implementing policies aimed at the sustainable goal. On the other hand, it is intended to continue the joint work with the Central Bank of Chile based on the granting of training to universities on the OPEN IEEM platform. In 2023, the course on macroeconomic modeling and natural capital in collaboration with the BC of Chile and the Pontificia Universidad Católica de Chile had a total of 415 enrolled, throughout the region, which represents a good indicator of reception, which should be considered when considering a new stage of training.

Costa Rica: The country strategy with Costa Rica for 2019-2022 will support the policies of the Government of Costa Rica, reflected in its Bicentennial National Development and Public Investment Plan (2019-2022), to generate inclusive, sustainable and environmentally friendly economic growth.

Based on the context of the country, of all the cities in Latin America, San Jose has the highest number of motorcycles and the sixth-highest number of vehicles per capita. In the metropolitan area, 60% of residents travel by private vehicle, which generates traffic congestion, extends travel times, and increases the carbon footprint of economic activity. The transport sector is one of the main contributors to carbon emissions, accounting for 53.5% of the total. Therefore, modernizing this sector through efficiency and environmental sustainability standards is critical to achieving national decarbonization goals.

These guidelines include the technical support provided by the IDB to the government in the 2018-2050 Decarbonization Plan. The Open IEEM Platform project has previously been applied to provide analysis in Costa Rica of the PBP "Towards a Decarbonized Economy" (CR-L1142 and CR-L1147). With the OPEN IEEM platform, the government can design and address possible solutions to the (environmental) challenges faced by Costa Rica's priority areas.

Does the proposal align to one or more sector frameworks?

Yes, the proposal aligns with at least one sector framework

Identify and describe how the proposal aligns to the sector framework(s)

The proposal for the continuity of the Open IEEM Platform project is aligned with the sectoral framework of Climate Change, since within it is mentioned that based on the analysis of international evidence and past experiences, several challenges arise for the region around climate change. Within the sectoral framework it is mentioned that the impacts of climate change are deeply uncertain, however, this does not mean that climate action should contract, but that such climate action should be based on innovative tools that inform decisions based on an understanding of risk and uncertainty. Indeed, this evidence justifies the use of the Open IEEM Platform project as a starting point for the development of environmental proposals in the region, since the implementation of an IEEM program model is an innovative method that analyzes the future impact of a government decision with a certain degree of risk. The proposal for the continuity of the Open IEEM Platform project is also aligned with the sectoral framework of Environment and Biodiversity, since it is a tool to analyze how to address the challenges of habitat destruction (land use change), and gaps in governance.

Select the regional challenges and cross-cutting issues to which the proposal aligns to

Climate Change and Environmental Sustainability

Justify the alignment to each selection above

The Open IEEM Platform project is the gateway to all IEEM projects aimed at estimating the impact of economic, social and environmental policies. IEEM has the capacity to be linked to spatial land use change, land cover (LULC) and ecosystem services modelling (IEEM+ESM), the latter supporting decision-making and the generation of public policies considering all possible impacts within an economy. That said, it is possible to show the efficiency and contribution of the OPEN IEEM platform on environmental issues, since thanks to its analysis it is possible to measure the impact of policies aimed at climate change and environment.

What is the estimated funding that you need in order to implement this proposal?

275000

Select the expected outputs of this proposal

Institutional Strengthening Deliverables (Training products, Management Information Systems, etc.)

Reform Deliverables (Legislation/Multi-country Agreements, Governance Models, Regulatory Frameworks, diagnostics, etc.)

Policy Dialogues

Knowledge Products

Are outputs strictly Knowledge Products?

Describe the motivation and main question(s) this TC intends to answer.

Describe the methodological approach to be used and the type of data (when applicable) which will be used

Please specify the type(s) of Knowledge Product (s) this TC encompasses:

Magazines and Learning Materials

Others

Please provide a brief description of the output(s) selected above (The number of units planned, and the estimated cost). If you selected others, please specify.

	Number of units	Estimated cost
Component 1: Policy Dialog, training and analysis		
Course on Macroeconomic Modeling and Natural Capital: Open IEEM Platform project	1	35000
Open IEEM Course Research proposal financing	3	75,000
Open IEEM analyses to support COF dialog with clients	2	120000
Total Component 1		230,000
Component 2: Open IEEM technical support		
Open IEEM web page annual maintenance	1	15,000
Open IEEM actualization	1	30,000
Total Component 2		45,000
Total		275,000

Outcomes: If the outputs are delivered successfully, what is the change expected (in capacity, knowledge, behavior, etc.)

More capabilities on implementing OPEN IEEM platform for analysis in Latin American and Caribbean

(0) **Attachments**

0 Comments