

TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	REGIONAL/IDB
▪ TC Name:	Study on Disaster Risk Management – A macro perspective cost-benefit analysis for reducing vulnerability
▪ TC Number:	RG-T3369
▪ Team Leader/Members:	HORI, TSUNEKI (CSD/RND) Team Leader; SUAREZ VAZQUEZ, GINES (CSD/RND); CHAKALALL, YURI (CSD/RND); LACAMBRA AYUSO, SERGIO (CSD/RND); FRUGONE, MARIA DEL ROSARIO (CSD/RND); GUERRERO COMPEAN, ROBERTO (CSD/RND); DURANTE, JUAN JOSE (IFD/CMF); GAGGERO, ANNABELLA (IFD/CMF); ESQUIVEL GALLEGOS, MARICARMEN (CSD/CCS); VERISSIMO DA SILVA, CAROLINA (LEG/SGO)
▪ Taxonomy:	Research and Dissemination
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	02 Jan 2019
▪ Beneficiary:	IDB and member countries
▪ Executing Agency:	INTER-AMERICAN DEVELOPMENT BANK
▪ IDB funding requested:	\$ 800,000.00
▪ Local counterpart funding:	\$ 0.00
▪ Disbursement period:	24 months
▪ Types of consultants:	Not applicable
▪ Prepared by Unit:	Env, Rural Dev & Disaster Risk
▪ Unit of Disbursement Responsibility:	Climate Chng & Sustainable Dev
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation

II. Objective and Justification

- 2.1 The objective of this TC is to optimize, among several options, the effectiveness of public-investment measures for reducing vulnerability to natural hazards focused on the Bank's member countries.
- 2.2 Based on the Disaster Risk Management (DRM) policy (OP-704), the Bank has developed several technical tools to identify the member countries' vulnerable sectors/areas to natural hazards (e.g., flooding, hurricanes, earthquakes or droughts) and actions to be taken. These technical tools include two studies to quantify the vulnerability and estimate cost/benefit of the investment to be taken: (i) Country Disaster Risk Profile (hereafter, Risk Profile) to estimate Probable Maximum Loss (PML) and Annual Average Loss (AAL) to eventual hazard events; and (ii) Country Investment Profile on Disaster Risk Reduction (hereafter, Investment Profile) to optimize public investment measures for reducing the vulnerability and analyze its cost benefits. These technical inputs are used for the sector/policy dialogues with the member countries for support taking proactive actions for reducing vulnerabilities to natural hazards. As a result, over the last three years (2015-2018), 12 loan programs on DRM have been approved for reducing the vulnerability (including four Contingent Credit Facilities (CCFs), five Investment loans, two Immediate Response Funds (IRFs) and one Policy Based Loan (PBL)).

- 2.3 The Risk Profile has been developed for 16 countries to date, financed mostly from the Multidoor Disaster Prevention Fund (MDP), of which nine reports are officially published as IDB Technical Notes. Its development, usage and public dissemination are, therefore, relatively favorable. The Investment Profile though, which is complementary to the Risk Profile and the principal subject of this TC, still needs to be improved. This innovative tool addresses the need for a robust quantitative macro financial planning tool with quantitative cost/benefit estimation for reducing vulnerability to natural hazards; a priority subject discussed during the Third World Conference on Disaster Risk Reduction of the United Nations in 2015 in Sendai, Japan; the developing countries all over the world, including all the Bank member countries, still require decision support tools which would better allow them, for example, to allocate US\$X millions of public budgets for reducing 20-30% of potential flood risk over specified time periods e.g. from 2020 to 2030.
- 2.4 Even though the IDB pioneered a first model of the Investment Profile with resourcing support from the former TC RG-T2434 (financed from the MDP) and piloted it in three countries; several challenges remain to improve/enhance the methodology in order to render more robust country study results and to optimize its suitability for practical sector dialogues. The challenges include, among others, enabling and including: (i) more accurate representation of the investment options, including both hard and nature based infrastructures, using world-wide experiences and databases on cost/benefit analysis; (ii) further disaggregation of the analysis among sectors, sub-national boundaries and public/private investment objectives; (iii) improved logic for incorporating indirect disaster losses in the model; and (iv) incorporation of additional climate change hazard risk in the model. Development of a user-friendly software platform for the effective application of the methodology to the countries is also necessary.

III. Description of Activities and Outputs

- 3.1 The main products of this TC will be cost/benefit analysis and other related technical studies that will simulate and compare the best compositions of investment measures (different types, designs, allocations and/or combinations) for reducing the vulnerabilities for the selected countries. An expected result of this TC will be to quantify the public investment demands necessary for reducing the vulnerability of the IDB's member countries. The expected impact of this TC is to reduce the vulnerability of the IDB member countries to natural hazards.
- 3.2 **Component I: Model/methodology improvement.** The focus of this component is to update and improve the current Investment Profile model (developed through the former TC RG-T2434), into a robust practical tool that will address all the current challenges. Several consultants (including international high-level academics in the field) will be hired to be part of a technical core-team with its objective to improve the current model. Following this, other consultants (or IT specialists) will develop a software to operationalize the model.
- 3.3 **Component II: Country studies.** This component applies the model to optimize measures for the vulnerability reduction, with quantification of the implementation costs. Four to six pilot countries, ideally from all four sub-regions will be selected based on country demand for upgrading into investment lending. Sector dialogues will be organized with the pilot countries. Detailed feasibility studies (including the C/B analysis) at the micro-perspective (or at the project scale) may be conducted.
- 3.4 **Component III: Dissemination.** The result of the study will be disseminated transparently to the Bank's member countries and other regions via two communication tools: (i) the Bank's knowledge web portal as a technical note; and (ii) the Bank DRM knowledge repository: Riskmonitor. Additionally, this component includes national workshops to the selected countries to disseminate the results of this

TC to national authorities/stakeholders, including the Ministries of Finance, public planning institutions and DRM authorities

IV. Budget

Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Model/methodology improvement	\$ 140,000.00	\$ 0.00	\$ 140,000.00
Country studies	\$ 530,000.00	\$ 0.00	\$ 530,000.00
Dissemination	\$ 130,000.00	\$ 0.00	\$ 130,000.00

V. Executing Agency and Execution Structure

- 5.1 The Executing Agency for this technical cooperation will be the Bank, through CSD/RND. All administrative, technical supervision, necessary internal and external coordination, responsibility for the delivery and quality of the final products will be the responsibility of this division. The Bank will hire the services of individual consultants, consulting firms in accordance with the policies and procedures in the Bank
- 5.2 The subject of this TC (macro-perspective cost benefit analysis related to disaster risk reduction) includes an innovative and advanced approach that other institutions never developed and experienced. This context addresses to the area of: innovation and information management, and is aligned with the justifications established in point d., Of Annex 10, OP-1155-2 as the justification of the Bank as executing agency.

VI. Project Risks and Issues

- 6.1 The main risk is the consistency and continuity of the work with the previous phase of the study supported by TC RG-T2434. In order not to repeat and duplicate the products developed in the previous phase, the Bank will coordinate with all the internal/external key technical resources involved in the previous phase

VII. Environmental and Social Classification

- 7.1 The ESG classification for this operation is "C".