

TC Document

I. Basic Information for TC

▪ Country/Region:	ECUADOR
▪ TC Name:	Support to strengthening the National Disaster Risk Management System
▪ TC Number:	EC-T1390
▪ Team Leader/Members:	Hori, Tsuneki (CSD/RND) Team Leader; Inurritegui Mautua, Marisol (CSD/RND) Alternate Team Leader; Daza Donoso, Pablo Jose (CAN/CEC); Durante, Juan Jose (IFD/CMF); Escudero, Carolina (VPC/FMP); Gaggero, Annabella (IFD/CMF); Hidrovo, Marcela Vanessa (VPC/FMP); Jimenez Mosquera, Javier I. (LEG/SGO); Valle Porrua, Yolanda (CSD/RND); Villalba, Cristina A (CAN/CEC)
▪ Taxonomy:	Operational Support
▪ Operation Supported by the TC:	EC-L1221
▪ Date of TC Abstract authorization:	19 Apr 2019
▪ Beneficiary:	The local and central governments of Ecuador
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Japan Special Fund(JSF)
▪ IDB Funding Requested:	US\$200,000.00
▪ Local counterpart funding, if any:	US\$50,000.00 (In-Kind)
▪ Disbursement period (which includes Execution period):	30 months
▪ Required start date:	August, 2019
▪ Types of consultants:	Firm and Individual consultants
▪ 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):	Yes
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; Institutional capacity and rule of law; Climate change; Environmental sustainability

II. Description of the Associated Loan/Guarantee

- 2.1 The Bank approved several projects in Ecuador in recent years to support the reduction of vulnerability to natural hazards. These include the following that are currently under implementation: (i) Strengthen the National Early Warning System (EWS) for Floods and Tsunamis (3913/OC-EC) (¶2.2); (ii) Contingent Loan for Natural Disaster Emergencies (EC-X1014), to provide liquidity to cover urgent financing needs that arise immediately after a disaster¹; and (iii) Support to Ensure the Resilience of Public Infrastructure and Services (ATN/JF-15752-EC)² to develop technical inputs needed to increase knowledge to reduce vulnerability.

¹ EC-X1014 was approved in 2014. The provision of liquidity was successfully made immediately after the earthquake in 2016.

² Financed by the Japanese Special Fund (JSF).

- 2.2 Project 3913/OC-EC was approved in 2017 by the Bank for a total of US\$15.3 million³ to strengthen the national EWS⁴ for tsunamis and floods. The specific objectives of the project are to: (i) strengthen national institutions' technical capacity for hazard monitoring and analysis for disseminating early warnings accordingly; and (ii) increase community capacity to understand and respond to hazard events. Ecuador's Integrated Security Service (SIS ECU-911)⁵ is assigned as the Executing Agency of the project. Other institutions including National Service of Risk and Emergency Management (SNGRE), National Institute for Meteorology and Hydrology (INAMHI), Geophysics Institute at the National Polytechnic School (IG-EPN) and Army Oceanographic Institute (INOCAR) are participating in this project as beneficiary entities.
- 2.3 As of June 2019, project 3913/OC-EC disbursed US\$7.9 million (64% of approved amount) to the Government of Ecuador (GoE), to deliver the following activities and products: (i) installation of equipment necessary for hazard monitoring and analysis (including hydrometeorological stations, seismic monitoring stations and tsunami monitoring buoys); and (ii) installation of community sirens, signage and luminaries in the priority area to increase community preparedness and response. In addition, community sensitization workshops were carried out in some priority municipalities. The main beneficiaries of this project are 74 communities located in coastal areas for the prevention of tsunami risk (including the provinces of Santa Elena, Guayas, El Oro, and Galapagos) and 5 communities exposed to high riverine flood risk in the provinces of Guayas and Manabí. The project is expected to be completed in 2020.

III. Objectives and Justification of the TC

- 3.1 The country's vulnerability to natural hazards, including earthquakes, floods, tsunamis, landslides and volcanic eruptions, is significant. From 1900 to 2019, the country experienced 35,000 disasters (DesInventar, 2016), of which 100 were major-scale disasters (EM-DAT, 2016). One of the recent significant events was an earthquake in April 2016 (of magnitude 7.8Mw) that caused 677 deaths whereby 1.2 million citizens were affected, and 35,000 houses were destroyed. In addition to the earthquake risk, the country suffers daily disasters including floods and landslides. Between 1970 and 2019, the country experienced more than 4,600 floods (an average of more than 90 flood events annually) that destroyed 5,300 homes and affected 560,000 citizens in total (DesInventar, 2019). Regular landslide events are another recent concern for the country. Between 2010-2019, the country experienced more than 6,600 landslides that occurred more frequently compared to previous decades. For example, between 2000-2009, 680 landslides occurred whereas between 1990-1999, 250 landslides occurred. These events affected, among other assets, a total of 490km of the country's road networks (DesInventar, 2019).

³ Of which US\$2.85 million was provided by the Government of Ecuador (GoE).

⁴ In this program, National EWS' refers to the system that consists of three elements working in coordination: (i) monitoring and analysis of hazards at national level; (ii) issuance of warnings to the local authorities and communities before hazard event occurs; and (iii) actions taken by communities and citizens in the event a warning is issued (e.g. evacuation to assigned shelters).

⁵ Established in 2013 as nation-wide emergency coordinator.

3.2 Taking these vulnerabilities into consideration, several important challenges and lessons have been discussed during the implementation of the projects described above (§2.1). These include:

a. Sustainable and permanent EWS operativity especially at local level.

Successful implementation of EWSs depend on participation of communities and tourists in evacuation drills and other sensitization activities - known as the “last one mile” theory⁶. Component II in project 3913/OC-EC seeks to provide these activities at the local level and in this sense, local authorities can play a key role. Generally, in Ecuador, local governments do not always organize sensitization workshops, nor do they always do periodical community disaster drills. This is mainly because some local authorities are still dependent on the technical and financial support from the national government. More capacity development would be necessary to complement this gap. Updating legal instruments, regulations and technical guidelines would be an asset for strengthening local authorities’ governance and technical institutional frameworks.

b. Territorial coverage of the National EWS. Project 3913/OC-EC covers all coastal communities for tsunami prevention, but only covers five communities for river flood prevention. This is because in 2016, before Project 3913/OC-EC, the Government invested their own funds to install river flood sirens in 14 communities in the provinces of Esmeraldas and Manabí serving as a pilot to include river flood events in the national EWS. Since this pilot was successful, additional interventions are required to cover other priority areas exposed to high river flood risk, hence 5 other communities within the Chone, Portoviejo and Chongón river basins were included in Project 3913/OC-EC. Additional hazards such as landslides which are increasingly frequent, would also need to be integrated into the National EWS. Additional interventions will be considered for future projects.

c. Additional structural measures are also necessary for reducing vulnerability, in addition to the current interventions provided through the three aforementioned projects (§2.1). These include:

i. Structural retrofitting measures. Both structural and non-structural measures should be implemented in parallel within a comprehensive National Disaster Risk Management (DRM) System. Although the current national EWS is globally recognized as an effective nonstructural measure that can reduce the number of affected people from hazard events, it is limited in its ability to mitigate potential structural damage. In this sense, additional structural measures (e.g. retrofitting measures of school buildings and hospitals) are necessary to avoid the collapse critical infrastructures in the event of a hazard event. TC ATN/JF-15752-EC carried out several preliminary feasibility studies related to structural retrofitting measures, and the results of these studies indicate the high viability offered (in terms of cost/benefit) from these interventions. Moreover, these measures can ensure

⁶ Emphasizing the importance of sensitizing communities and tourists to raise awareness to realize self- and mutual- support in the event of a disaster.

continued operations, even in the event of a disaster – this is one of the important lessons learned from the 2016 Earthquake to increase resiliency.

- ii. In some coastal areas such as *Cojimíes* (in the province of Manabí), where the land is relatively flat, **additional structural measures** are needed to allow the immediate vertical evacuation of communities and tourists in the event of a tsunami (e.g. towers or other facilities that are high enough to shelter from tsunamis). The current local evacuation plans in these areas designate evacuation shelters that are 5-10km inland to reach to the nearest hill, which would be difficult to reach from coastal urban areas without using vehicles.
 - d. **Sustainable finance.** In order to implement the above-mentioned related activities a. through c. (proactive actions for reducing vulnerability) across the short- to medium-term, as well as to respond to immediate needs in the event of a disaster for emergency response, rehabilitation and reconstruction, a comprehensive and long-term financial strategy is needed to cover different financial instruments and options. However, the Ministry of Finance has not yet developed this strategy.
- 3.3 To address these challenges, the GoE has requested technical assistance from the Bank. For this purpose, the objective of this TC is to provide technical support to the national and local governments of Ecuador to strengthen their comprehensive national DRM system towards reducing the vulnerability against natural disasters, therefore improving the achievement of the objectives of Component 2 (Strengthening of the alert system and community response capacity) of Project 3913/OC-EC which has a greater participation of counterpart financing.
- 3.4 **Alignment with the Bank's sector priorities.** Building and strengthening a comprehensive National DRM system, including medium- and long-term actions to reduce risk, is a new area for the GoE - mainly for the institutions responsible of DRM (such as SNGRE). The TC is therefore in line with the Update to the Institutional Strategy (UIS) 2010-2020 (AB-3008), in its development challenge of (a) productivity and innovation by establishing better institutional frameworks, b) institutional capacity and rule of law by strengthening the Disaster Risk Management governance framework, and c) the crosscutting area of climate change and environmental sustainability by preparing institutions and communities to affront disasters derived from severe rain like river floods and landslides, and by providing technical support for (long-term) disaster risk identification. Additionally, the TC addresses the crosscutting area: sustainability and climate change of the Corporate Results Framework 2016-2019 (GN-2727-4).
- 3.5 **Alignment with the Bank Country Strategy.** This TC is also consistent with the Bank Country Strategy in Ecuador 2018-2021 as it addresses DRM in its strategy's crosscutting areas.
- 3.6 **Alignment with the Japan Quality Infrastructure Initiative (JQI):** The objective of this TC addresses the eligibility of JQI according to Chapter 2 of JSF, JQI and JCF Operating Guidance; (b) JSF Eligible project type: loan preparation and/or implementation given that this TC aims to support the strengthening and enhancing of the Projects under implementation.

IV. Description of activities/components and budget

- 4.1 The TC includes two components to address all challenges identified in the previous section:
- 4.2 **Component I. Support for reducing vulnerability in the short- and medium-term.** This component will: (i) support local governments to strengthen technical capacity to help communities and tourists to prepare for hazard events; and (ii) support the national government to design effective public investment projects toward reducing vulnerability.
- a. **Support local governments.** Suitable consultants will: (i) diagnose gaps in policy, laws, norms and institutional regulations that are hampering effective local DRM (specifically to support communities and tourists to prepare for natural hazards); and (ii) develop an action plan for improving local DRM performance. The activities will include a proposal for updating policy, laws, norms and institutional regulations, policy dialogues among national and local authorities and some pilot implementation of the action plan (e.g. technical trainings for local authorities). Outputs: a diagnosis report, an action plan (including a policy reform proposal) and its pilot implementation (e.g., technical trainings for local governments).
- b. **Support national government.** A consultant firm will: (i) facilitate policy dialogues to identify priority actions necessary for reducing vulnerability; and (ii) develop prefeasibility studies (with cost/benefit analyses) for eventual public investment projects, to evaluate the efficiency of structural and non-structural measures for reducing vulnerability. The eventual investment projects would include: the enhancement of territorial/hazard coverage in the National EWS and the implementation of structural retrofitting measures to public infrastructure including school buildings and hospitals in some priority areas. Outputs: policy dialogues (to identify priority actions) and prefeasibility studies for eventual public investment projects.
- 4.3 **Component II. Support for reducing vulnerability in the long-term (development of disaster risk financial strategy).** Individual consultants will develop two technical inputs: (i) a study to evaluate insurance coverage in each critical public infrastructure; and (ii) an in-depth review of financial instruments that the country could potentially use for reducing risk and responding to emergencies. These studies are necessary for developing a comprehensive financial strategy that enhances Ecuador's long-term capacity to reduce vulnerability, build resilience and mitigate the impact on public finances in the event of a disaster. Outputs: a report on insurance coverage and a report on an in-depth review of financial instruments.
- 4.4 The total amount of financing required for this TC is US\$250,000. JQI has funded US\$200,000 and the remaining US\$50,000 will be funded by local in-kind contributions.

Table 1. Indicative Budget

Activity/Component	Description	JQI Funding (US\$)	Counterpart Funding (in kind) US\$	Total Funding (US\$)
Component I. a. Support local governments	Support local governments iii. Diagnosis	40,000	10,000.00	50,000.00

	iv. Action plan including pilot implementation			
Component I. b. Support national government	Project designs v. Identification of priority actions vi. Prefeasibility studies	120,000.00	30,000.00	150,000.00
Component II.	Development of a financial strategy	40,000.00	10,000.00	50,000.00
Total		200,000.00	50,000.00	250,000.00

- 4.5 Supervision from the Bank for this TC will be done in coordination between the IDB Ecuador Country Office and CSD/RND. Annual supervision costs to COF needed for this TC is estimated to be US\$10,000.

V. Executing agency and execution structure

- 5.1 In accordance with the letter of request received from the GoE, the Executing Agency for this technical cooperation will be the Bank, through the CSD/RND division. It will assure a timely execution of all TC activities, enabling independence from internal procedures of government entities. All administrative, technical supervision, internal and external coordination, delivery and quality of the final products will be the responsibility of this division.
- 5.2 SNGRE will be the principal counterparts for this TC. Other national institutions including SIS ECU-911, INAMHI, IG-EPN, INOCAR, Ministry of Economy and Finance, Ministry of Education and Ministry of Public Health will participate in this TC. The participation will be realized through policy dialogue, technical meetings and daily dialogues/communications. Local governments will also participate during the project execution. The Bank will coordinate mainly with SNGRE and all other institutions through daily communications to ensure appropriate collaboration while implementing this TC. The communication mechanism with these institutions is already established through the execution of 3913/OC-EC, through its Project Management Team (see 3913/OC-EC Loan Proposal Document, Paragraph 3.3). This TC will use this communication mechanism so that all the process and products from this TC will be transparently shared with. Additionally, all the participant institutions of this TC will sign the Memorandum of Understanding (MoU) as a partner of this TC.
- 5.3 **Procurement.** The Bank will contract individual consultants, consulting firms⁷ and non-consulting services. The activities to be executed under this TC are included in the Procurement Plan (Annex III), in accordance with the procurement methods established by the Bank, namely: (a) Hiring of individual consultants, as established in (a) AM-650 for the individual consultants; (b) GN-2765-1 and its associated

⁷ Procurement Plan includes the procurement of consulting services based on the selection method of the single-source selection method pursuant to GN-2350-9, according to which this method may apply: (a) for tasks that represent a natural continuation of previous work carried out by the firm; (b) in emergency cases, such as in response to disasters and for consulting services required during the period of time immediately following the emergency; (c) for consultancy that shall not exceed US\$100,000; or (d) when only one firm is qualified or has experience of exceptional worth for the assignment.

operational guides OP-1155-4 for the firm consultants and (c) Contracting of logistics services and other services other than consultancy, according to the policy GN-2303-20.

VI. Major issues

- 6.1 Inter-institutional coordination is a key factor to maximize the positive impacts from this TC. At the same time, this factor may present a potential risk, diminish the overall impact of this TC and generate a delay in the execution of the same. This risk will be mitigated by execution by the Bank to facilitate frequent inter-institutional coordination with the institutions involved in this TC.

VII. Exceptions to Bank policy

- 7.1 None.

VIII. Environmental and Social Strategy

- 8.1 No negative environmental impact is anticipated from this technical cooperation. According to the Environment and Safeguards Compliance Policy (OP-703), this TC is classified as Category "C".

Required Annexes:

[Request from the Client - EC-T1390](#)

[Results Matrix - EC-T1390](#)

[Terms of Reference - EC-T1390](#)

[Procurement Plan - EC-T1390](#)