PROGRAM OF SEISMIC RISK REDUCTION IN CUMANA

VE-T1054

CERTIFICATION

I hereby certify that this operation was approved for financing under **Japan Special Fund (JSF)** through a communication dated July 25, 2016 and signed by Michiko Tamashiro (ORP/GCM). Also, I certify that resources from said fund are available for up to **US$300,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, represent a risk that will not be absorbed by the Fund.

ORIGINAL SIGNED — 09/16/2016

Sonia M. Rivera
Chief
Grants and Co-Financing Management Unit
ORP/GCM

Date

Approved: ORIGINAL SIGNED — 09/19/2016

Pedro V. Martel
Division Chief/Manager
Environment, Rural Development and Risk
CSD/RND

Date

TC Document

I. Basic Information for TC

▪ Country/Region:	Venezuela
▪ TC Name:	Program of Seismic Risk Reduction in Cumaná
▪ TC Number:	VE-T1054
▪ Team Leader/Members:	Tsuneki Hori (CSD/RND) – Team Leader; Roberto Guerrero, Yolanda Valle y Maria Retana (CSD/RND); Javier Jiménez y Virginia Franzini (LEG/SGO); Miriam Patricia Toriz Monroy (FMP/CVE)
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination	Client Support
▪ Date of TC Abstract authorization:	July 22, 2016
▪ Beneficiary:	(i) National government of Venezuela, (ii) Municipality of Cumaná; (iii) Vulnerable communities in Cumaná.
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Japan Special Fund
▪ IDB Funding Requested:	US$300,000
▪ Local counterpart funding, if any:	US$75,000 (in kind)
▪ Disbursement period (which includes Execution period):	30 months (execution period: 24 months)
▪ Required start date:	August, 2016
▪ Types of consultants:	Firm and Individual consultants
▪ Prepared by Unit:	CSD/RND
▪ Unit of Disbursement Responsibility:	CSD/RND
▪ TC Included in Country Strategy (y/n): ▪ TC included in CPD (y/n):	Yes Yes
▪ GCI-9 Sector Priority:	Initiatives on infrastructure for competitiveness and social welfare

II. Objectives and Justification of the TC

2.1 **The general objective of this TC** is to provide support for the implementation of the Emerging and Sustainable Cities Initiative Action Plan for Cumaná, specifically on its priority Program - local seismic risk reduction.

2.2 **Background.** Venezuela is one of the most earthquake-prone countries of Latin America and the Caribbean (LAC). Venezuela's historic seismic events[1] indicate that most of the high-intensity earthquakes were recorded at the north-east coastal area of the country (where Cumaná is located). The City has been affected at least by nine intensive (or powerful) earthquakes since its foundation in 1515; The most recent significant event occurred in 1997, causing 73 deaths, 522 seriously injured, 6,800 homeless, and US$81 million in public infrastructures losses[2].

[1] Souce: The Venezuelan Foundation of Seismological Research (FUNVISIS: Fundación Venezolana de Investigaciones Sismológicas). http://www.funvisis.gob.ve/ - menu "Sismisidad".

[2] Souce: FUNVISIS, 1997; Grases et al., 2004

2.3 In 2015, the Bank conducted the Emerging and Sustainable Cities Initiative (ICES) in the city of Cumaná in order to contribute to the city's long-term sustainable socioeconomic planning and activities (VE-T1047). Its Action Plan included the topic "reducing the city's vulnerability to seismic risk" as one of the priority actions necessary for the city's sustainable development. The ICES study estimated that the city could be affected by US$3,700 million on economic activities when a powerful earthquake - once in 1000 years return period - hits the city.

2.4 The national and local governments have increased their efforts towards reducing seismic risk: The Country's new Disaster Risk Management Law[3] encourages that all building facilities that provide public services should carry out efforts to mitigate physical vulnerability to natural hazards. The National Anti-seismic Building Standard (COVENIN 1756-2: 2001), approved in 1972 and updated in 1982 and 2001, is a guide on how to reinforce the existing vulnerable buildings. The Venezuelan Foundation of Seismological Research (FUNVISIS) was established in 1971 as a national entity for seismological research. The Seismology Center of the University of Orient (UDO) was established in 1987 as the local technical entity for seismological research in the area.

2.5 However, two important challenges remain to reduce the seismic risk in Cumaná. These include: (i) more than 70% of public buildings in the city were built before 1982 (year when building standards were updated) with no physical retrofitting to reduce seismic risk; and (ii) after the 1997 earthquake (which devastated most of low-income housings), the communities were rebuilt by their inhabitants in the same area and with the same vulnerable materials. These two challenges are rooted on the lack of information and communication of seismic risk. For example, public building reinforcement measures require seismic micro-zoning information for its detailed design; however, the study is not yet developed in Cumaná; Low-income communities have rebuilt their vulnerable housing because they have limited information or understanding related to the high local seismic risk.

2.6 The Municipality of Cumaná requested technical assistance from the Bank to strengthen their knowledge and to implement capacity to reduce the local seismic risk, based on the results of the Action Plan.

2.7 **Alignment with Bank's sector priorities:** One of the beneficiaries of this TC will be vulnerable communities of the city; the TC will provide activities for reducing seismic risk for community members, including women, school children and low-income families. Therefore, the TC is in line with the development challenges of the Update to the Institutional Strategy (UIS) 2010-2020 (AB-3008): social inclusion and equality; and its crosscutting area: sustainability and climate change. TC will also provide a design for retrofitting measures for public infrastructure; this activity is aligned with the Bank's Sector Strategy: Sustainable Infrastructure for Competiveness and Inclusive Growth (GN-2710-5) – on its priority: Support the construction and maintenance of socially and environmentally sustainable infrastructure.

[3] Law on Socio-Natural and Technological Risk Management, Official Gazette 39,095, on 9 January 2009.

2.8 **Alignment with Japan Special Fund (JSF):** The objective of this TC addresses the Fund's operational guidance 2 (a) policy and strategy formulation/implementation activities. Although JSF prioritizes C and D countries, A and B countries might also be eligible for funding.

III. Description of activities/components and budget

3.1 The TC will include the following 2 components to address the challenges identified in the previous Paragraph 2.5: (i) Study and design for seismic resilience on public infrastructure (subject related to technical capacity enhancement); and (ii) Community preparation for reducing the seismic risk (related to social or community capacity development).

3.2 **Component 1: Study and design for seismic resilience public infrastructure.** This component will develop two technical activities: (i) Seismic micro-zoning. The aim of this study is to assess the seismic ground motion, considering the soil condition of each micro territory (or each geotechnical unit) of the city. FUNVISIS and UDO will be involved in this activity as technical counterparts. Several technical meetings will be held in Cumaná to share the technical experiences of this study among technical entities. The final product of this activity is micro-zoning maps that will determine the degree of the seismic intensity in each micro territory. The result of this study will be used as an input of the next activity "design structural retrofitting measures". (ii) Design of structural retrofitting measures. The aim of this study is to propose a design of retrofitting measures for high vulnerable public infrastructures in Cumaná. The institutions participating in this activity will be the Housing Authority of the State of Sucre (in coordination with the engineers in the Cumaná Municipality), the Ministry of Education, the Foundation Building and Educational Endowments (FEDE, in Spanish), the Ministry of Health, FUNVISIS and UDO. Several technical meetings will be held in Cumaná to share the development process of the study. The final product of this activity is a proposal for seismic risk reduction measures including: (i) probable infrastructure loss estimation in case of a powerful earthquake; (ii) feasibility design of the retrofitting measures with cost estimation; and (iii) cost benefit analysis. This activity will include workshops organized by the Municipality to disseminate the result of the two studies.

3.3 **Component 2: Community preparation for reducing the seismic risk.** This component will enhance community's knowledge related to the local area's hazard risk and learn how to reduce it. The target beneficiaries of this component will be households living in high seismic hazard area - the poor and vulnerable communities identified in Component 1. Local entities including Civil Protection of Cumaná and the local firehouse offices will implement these activities. A supportive individual consultant will be hired for the coordination among various entities and communities. The activities will include: (i) local institutional strengthening to implement the community preparation activities ("training trainee" activity). The final product of this activity will be increasing the number of trainees. The local Civil Protection will provide the trainings. Other product of this activity will include a one stop disaster/hazard public information service system (web portal service design); (ii) Characterization of the families living in the high seismic hazard area. Local Civil

Protection will conduct interviews to the families living in the high seismic hazard risk area (living in vulnerable housings) to understand their general social conditions and awareness/knowledge related to the local hazard risk, and will identify what are the actions necessary for them to reduce the disaster risk. The study will be used as an input for the next activity: Knowledge enhancement of the communities; and (iii) Knowledge enhancement of the vulnerable communities for disaster risk prevention. This sub-component will provide community workshops and training drills to understand, prepare for and reduce the local risk. The local Civil Protection and firehouse offices, with the new staffs and volunteers trained in the previous "training trainee" activity, will provide the community workshops. Activities of the workshops include (a) sharing the experiences and lessons related to the previous 1997 earthquake; (b) community actions necessary for reducing the local risk; (c) community maps to indicate the evacuation routes and shelters in case of earthquake; (d) the local disaster management committee establishment; and (e) the evacuation drill.

Table 1. Indicative Results Matrix

Output	Unit of Measure	intermediate /final goals	Means of verification intermediate/final goals	Base Line (2016)	Goal (2018)
Technical Document on Seismic micro-zoning study including a micro-zoning map approved by the local government (Component 1)	# of document	2017A /2017B	Draft/final report	0	1
Technical document on structural retrofitting measures for Cumana City approved by the local government (Component 1)	# of document	2017B /2018A	Draft/final report	0	1
Trainees that taken training and certified as trainee by local government (component 2)	# of trainees	2016B /2017A	Intermediate/final report of the individual consultant	0	20
Web portal information service that administrate public information related to disasters and hazards, approved by the local government (component 2)	# of web portal	2017A /2017B	Intermediate/final report of the individual consultant	0	1
Technical document on characterization of the families living in the high seismic hazard area, approved by the local government (component 2)	# of document	2016B /2017A	Draft/final report	0	1
Community workshops for disaster risk prevention organized and executed by the local government (Component 2)	# of workshops	2017A /2017B	Intermediate/final report of the individual consultant	0	50

3.4 The estimated total cost of the TC is US$375,000, with (i) US$300,000 to be drawn from the JSF contribution; and (ii) a local counterpart contribution of US$75,000, in-kind.

Table 2. Indicative Budget

Component	Description	IDB/Fund Funding	Counterpart Funding (in-kind)	Total Funding
Component 1	Study and design for seismic resilience public infrastructure - Provision of equipment for the seismic micro-zoning study (Digitizer): US$20,000 - Implementation of the micro-zoning study: $85,000 - Proposal for risk reduction (retrofitting) measures: US$135,000 - Technical Workshops: US$10,000	US$250,000	US$45,000	US$295,000
Component 2	Community preparation - Individual consultant and expense for (i) coordination for "training trainee" (US$15,000); (ii) Characterization of the families' vulnerability (US$10,000); and coordination for community workshops (US$25,000)	US$50,000	US$30,000	US$80,000
	Total	US$300,000	US$75,000	US$375,000

IV. Executing agency and execution structure

4.1 The Municipality of Cumaná (the requesting entity of this TC) doesn't have a unit or division to implement comprehensive disaster risk management activities at the local level (not only for emergency assistance but also for implementing risk identification studies and proactive mitigation (or retrofitting) measures). Even though there is a local Civil protection office and a local fire department that are responsible for local disaster risk reduction, these entities are specialized only on emergency response and not on risk reduction (mitigation or retrofitting) measures. Disaster risk management is, thus, a new subject for the Cumaná city. This TC will be a good opportunity to enhance the capacity of comprehensive disaster risk management; however, the requesting entity and other local entities do not have the sufficient technical and operational capacity to duly and timely execute the activities programed in this TC. Therefore, this TC will be administered by the Bank, which has extensive experience in recruitment and supervision of the technical activities related to disaster risk reduction.

4.2 The RND division will be responsible for planning, organizing, implementing, monitoring and final evaluation of the TC activities. CVE will support with the coordination and communication activities among the national and local entities. In carrying out these activities, the Bank will coordinate with the Municipality of Cumana, the local PC, FUNVISIS, UDO, as well as other institutions necessary for the execution of this TC. The selection and hiring of consultants will be undertaken on

the GN-2350-9 “Policies for the selection and contracting consultants financed by the IDB”.

4.3 Project teams are responsible for reporting progress and completion of the TC annually through the use of IDB systems standard to all TC operations. These reporting works will be done in coordination with the JSF/JCF fund coordinator, and the information should include inputs disbursed, outputs delivered and outcome achieved.

V. Major issues

5.1 The consultation process between the Bank, local entities in Cumana and national entities necessary for the TC operation may present a risk to execution delay of the TC. This risk will be mitigated through hiring a local consultant (in Component 2) to establish a fluent communication mechanism during the TC execution.

VI. Environmental and Social Strategy

6.1 No negative social and environmental impact is expected through the activities financed by this TC. According to the Bank’s Safeguards Screening Toolkit, this operation is classified as category “C”.

Required Annexes:

- Annex I - Letter of Government Request
- Annex II - Terms of Reference for activities/components to be acquired
- Annex III - Procurement Plan