

**ACTION PLAN TO IMPLEMENT THE GOVERNANCE AND PUBLIC POLICY INDEX FOR DISASTER
RISK MANAGEMENT**

ES-T1267

CERTIFICATION

I hereby certify that this operation was approved for financing under the **Japan Special Fund (JSF)** through a communication dated December 27, 2017 and signed by Hiroyuki Yorozu (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$700,000** 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

Sonia M. Rivera

Chief

Grants and Co-Financing Management Unit

ORP/GCM

February 9, 2018

Date

Approved:

ORIGINAL SIGNED

Pedro Martel

Division Chief

Environment, Rural Development and Risk Management

Division

CSD/RND

February 12, 2018

Date

TC Document

I. Basic project data

▪ Country/Region:	El Salvador
▪ TC Name:	Action plan to implement the Governance and Public Policy Index for Disaster Risk Management.
▪ TC Number:	ES-T1267
▪ Team Leader/Members:	Hori Tsuneki (CSD/RND) Team Leader; Gines Suárez (RND/CES); Takayoshi Yamagiwa (CID/CES); Sofia Greco (LEG/SGO); and Elizabeth Chávez (CSD/RND).
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination.	Client Support
▪ Date of TC Abstract:	December 26, 2017
▪ Beneficiary:	El Salvador
▪ Executing Agency and contact name	IDB (CSD/RND)
▪ Donors providing funding (amount and Fund's name):	US\$700,000 (Japan Special Fund)
▪ Local counterpart funding, if any:	US\$100,000 (in kind: MARN, MOP, UCA, UES)
▪ Disbursement period (which includes execution period):	24 months
▪ Required start date:	February 16, 2018
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	CSD/RND
▪ Unit of Disbursement Responsibility:	RND/CES
▪ Included in Country Strategy (y/n);	Yes
▪ TC included in CPD (y/n):	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Institutional Capacity and Rule of Law

II. Objective and Justification

- 2.1 The objective of this TC is to provide technical support to the national government of El Salvador for reducing seismic vulnerability of the country. The specific products of this TC will include (i) studies necessary for understanding the country's seismic risk; (ii) a proposal for updating the Technical Standards for Earthquake Design and (iii) a national action plan for reducing seismic vulnerability. The expected outcome (or the long-term impact) of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events.
- 2.2 The country's vulnerability to seismic events is significant. From 1980 to 2017, El Salvador has experienced seven major earthquakes resulting in more than 2,300 casualties and affecting 240,000 citizens¹. Of these, January and February 2001 earthquakes were the most significant that resulted in the mortality of 944 persons, 5,565 injured, more than 100,000 houses destroyed and approximately 150,000 public buildings damaged (El Salvador Civil Protection, 2001).

¹ According to the results of DesInventar database.

- 2.3 On May 12, 2017, El Salvador experienced a moderate M6.2 earthquake with the epicenter located far offshore (or 236 km from San Salvador). Although no major damage was reported, public stakeholders, scientists and media have expressed significant concerns over the country's high vulnerability to future intensive seismic events. A magnitude 8.1 earthquake that occurred off the coast of southern Mexico (or 300km - 400 km from San Salvador) on September 8th of the same year- the most intensive seismic event ever experienced by Mexico, additionally raised the El Salvador public stakeholders' high attention to the seismic risk.
- 2.4 A recent study undertaken by the Bank² indicates that one of the reasons for the high seismic risk of the country is due to the obsolete design of the building regulations. These include the National Building Regulation³ and its complementary nine Technical Standards including the Technical Standards for Earthquake Design (the last document is hereafter referred to as "The Technical Standards")⁴. The latest update of the Technical Standards was in 1997, or more than two decades ago, which contributes to the challenge of reducing the seismic vulnerability of the country. According to the preliminary discussion between the Bank and the government stakeholders of El Salvador, the principal issues to be addressed and considered include:
- **Limited implementation of seismic micro-zonation studies.** Seismic micro-zonation studies (or surveys to characterize geological and geophysical conditions) are an important input for estimating the earthquake hazard intensity at local scales. Even though the Technical Standards (Chapter 3: Design criteria) require these types of study prior to building engineering design, in most cases this study is ignored, or the Technical Standards are not implemented properly. The reason for this, amongst others, is the fact that public technical institutions, with responsibility for developing the micro-zonation studies, have limited knowledge to both develop and implement study findings (in fact, El Salvador lacks a standard methodology for implementing the seismic micro-zonation studies and minimal to no experience in implementing the results and their recommendations. Seismic hazards at local scale in urban areas have not been accurately evaluated as the geological and geophysical characteristics of the soils present have not been identified.
 - **Level of Incorporation of Recent historical earthquake data.** Chapter 5 of the Technical Standards clarifies the method of calculating the maximum seismic intensity possible in the country. The same Standards calculates intensity, by using historical earthquake data or parameters (e.g., earthquake intensity, location and depth of epicenters). However, the recent empirical earthquake data (especially

² The Governance and Public Policy index for El Salvador (iGOPP). See <https://publications.iadb.org/handle/11319/6717> for general framework and methodology of the study. The final country report for El Salvador is to be published in early 2018.

³ http://www.amss.gob.sv/alcaldia/phocadownload/estudios_impacto/altos_escalon_15317/8_REGLAMEN_TO_SEGURIDAD_CONSTRUCCIONES.pdf

⁴ Norma Técnica para Diseño por Sismo that was issued in 1997. This Technical Standard is one of the nine Technical Standards of the National Construction Regulations (Reglamento para la Seguridad estructural de las construcciones). <http://cades.com.sv/wp-content/uploads/2017/01/Norma-Tecnica-Para-el-Dise%C3%B1o-por-Sismo-en-El-Salvador.pdf>

the earthquake experiences of 2001 and 2017) are not incorporated in its calculation.

- **Recent Engineering Experiences in the Country.** The government of El Salvador has made some important efforts to improve earthquake resistant construction designs via donor supported interventions. These include, for example, the Earthquake-Resistant Popular Housing Project (known as TAISHIN project) supported by Japan International Cooperation Agency (JICA) with the Government of Mexico during 2003 – 2008, and the Strategic Risk Management Project for the Strengthening of Public Infrastructure (known as GENSAI project) supported by JICA during 2009 – 2013. The TAISHIN project provided an earthquake construction laboratory in the Catholic University of El Salvador (UCA) in 2004 (the largest earthquake construction laboratory in Central America). UCA conducted (and is conducting) various important studies related to earthquake resistant structure and materials. However, these engineering studies are not incorporated in the Technical Standards. Further the country does not have a long-term national seismic risk reduction action plan.
- **Recent Lessons due to the Earthquakes in LAC region.** The LAC region has experienced several important earthquakes including in Haiti (2011), Chile (2011), Ecuador (2016) and Mexico (2017) and each earthquake left significant lessons. For example, building damages due to the earthquake in Ecuador in 2016 were mostly seen in its non-structural elements (e.g., ceilings and walls), rather than structural elements (IDB-JICA, 2017)⁵. These lessons from other countries should be reviewed and incorporated to update and improve the Technical Standards of the country (for example, in its Chapter 7: Strengthening of non-structural elements).

- 2.5 The national government of El Salvador has requested technical assistance from the Bank to address these challenges, specifically for (i) institutional strengthening for conducting studies (e.g., seismic micro-zonation studies) to understand the seismic risk at local scales; (ii) elaborating a proposal for updating the Technical Standards for Earthquake Design, and (iii) developing and disseminating a national action plan for reducing seismic vulnerability.
- 2.6 **Alignment with Bank's sector priorities:** This TC is strategically aligned with the Update to the Institutional Strategy 2010-2020 (UIS) (AB-3008) through the cross-cutting themes of institutional capacity and rule of law as part of the institutional strengthening for conducting seismic micro-zonation studies and the elaboration of the proposal for updating the Technical Standards.
- 2.7 **Alignment with Japan Special Fund (JSF):** The objective of this TC addresses the eligibility of JSF according to the Chapter 2 of the JSF operational guidance; (a) JSF Eligible project type: *policy and strategy formulation/implementation activities with priority given to C and D Countries.*

III. Description of activities/components and budget

- 3.1 The TC includes two components to address all challenges identified in the previous section.

⁵ Opportunities and Challenges for Hazard Resilient Infrastructure in Latin America and Caribbean Countries. The report is to be published in earlier 2018

3.2 **Component 1: Technical Capacity Building for Understanding Seismic Risk.** This component will address the technical capacity building of the national institutions related to (a) the seismic micro-zonation studies; and (b) the vulnerability assessment of construction materials (based on the result of the seismic micro-zonation studies).

a. **Seismic micro-zoning.** Activities will include: (1) developing national technical guidelines and training toolkits (including written and audiovisual manuals) for conducting seismic micro-zonation studies; (2) implementing pilot seismic micro-zonation studies; and (3) organizing a national technical workshop to disseminate the results of this sub-component (the technical guidelines, the training toolkits and the result of the pilot studies). The Ministry of Environment and Natural Resources (MARN), The Ministry of Public Works (MOP), UCA, and the University of El Salvador (UES) will participate in, and receive technical knowledge transfers from these activities.

b. **Vulnerability evaluation of construction materials.** Knowing the soil condition and its possible peak ground acceleration in each pilot municipality (or in its urban area), this sub-component will estimate structural vulnerability to earthquake shaking intensities for typical construction materials and elements. As several structural vulnerability laboratory tests have already been conducted by the UCA laboratory (but without the parameter of soil condition or ground seismic motions in each micro territory), this component will take advantage of these study legacies and will replicate (or recalculate) the parameters considering the result of the seismic micro-zoning study. The process of this replication/recalculation will be conducted using a computer simulation model e.g., 3D finite element method (FEM). Activities will include: (1) trainings on a 3D FEM analysis software operation and data inputs; (2) conducting (replicating or recalculating) vulnerability evaluations of construction materials and elements using a computational FEM analysis, incorporating the result of the seismic micro-zoning study, and showing the results in maps; and (3) reporting the result of the study and disseminating it through a technical meeting among national academic and technical actors. UCA will take principal responsibility for the activities in this sub-component in terms of receiving the technology and knowledge transfer of this sub-component. The final products of this component will be the technical report on vulnerability evaluation of the construction materials in the pilot municipalities in El Salvador and the final technical workshop to disseminate the result of the study.

3.3 **Component 2: Strengthening National Seismic Standards and its Implementation.** Based on the results of the Component 1, this component will (a) elaborate a proposal for updating the Technical Standards; and (b) develop and disseminate a national action plan for reducing seismic vulnerability.

a. **Proposal for updating national building regulations.** An individual consultant will elaborate a proposal to update the Technical Standards for Earthquake Design in El Salvador. MOP, who leads the approval and operation of the Technical Standards, will be a primary counterpart of this sub-component and MARN, UCA and UES will participate during its development process. The final products of this component will be an updated Technical Standards proposal. The expected outcome of this sub-component, is the government of El Salvador approving and implementing the new Technical Standards.

b. **National action plan for reducing seismic vulnerability.** This sub-component will design specific activities necessary for achieving nationwide seismic resilience

of public infrastructure (or a national action plan for reducing seismic vulnerability) based on the proposed Technical Standards. A firm/consultant will be contracted. MARN, MOP, UCA, UES, other relevant national authorities including General Directorate for Civil Protection (Civil Protection) and some municipalities will participate in plan development process. A national technical workshop will be organized to disseminate the result of the Action Plan. The final products will be the Action Plan and the National Workshop. MOP will be a primary counterpart that will receive the final products.

- c. Project Coordinator.** A project coordinator will be hired to (i) coordinate the communication and all the activities of Component 1 and 2 among MARN, MOP, UCA and UES; (ii) communicate with other relevant national authorities including General Directorate for Civil Protection (Civil Protection); (iii) coordinate with other donor agencies including JICA; and (iv) coordinate with international and regional organizations e.g., Central American Coordination Center for Natural Disaster Prevention (CEPREDENAC).

3.4 The total amount of financing required for this TC is eight hundred thousand dollars (US\$800,000). The Japan Special Fund is the funding source of the US\$700,000 and local counterpart contribution is US\$100,000 in kind.

Activity/Component	Description	BID Finance	Counterpart (in Kind)	Total Finance
Component 1	Methodologies for Micro-zonation studies/toolkits	US\$30,000	US\$70,000 - personal staffs and -UCA geotechnical laboratory use fee,	US\$580,000
	Micro-zonation pilot studies	US\$380,000		
	National Technical Workshop	US\$20,000		
	Vulnerability evaluation of construction materials	US\$80,000		
Component 2	Proposal for updating national building regulations	US\$40,000	US\$30,000 - personal staffs and -UCA geotechnical laboratory use	US\$220,000
	Action Plan	US\$70,000		
	National Workshop	US\$20,000		
	Project I Coordinator	US\$60,000		
		US\$ 700,000	US\$ 100,000	US\$ 800,000

IV. Executing agency and execution structure

- 4.1 As requested formally by the government of El Salvador (The Ministry of Environment and Natural Resources, MARN), the Executing Agency for this technical cooperation

will be the Bank through RND/CES. This is based on the Bank's specific knowledge regarding technical aspects of the consultancies, the preparation of the specialized ToRs, as well as to carry out the technical coordination of the consultancies and the review of the expected products. All administrative, technical supervision, responsibility for the delivery and quality of the final products will be the responsibility of RND/CES. The activities to be executed under this operation have been included in the Procurement Plan (Annex IV) and will be executed in accordance with the Bank's established procurement methods, namely: (i) Hiring of individual consultants, as established in the Regulations for Complementary Workforce (AM-650); (ii) Contracting of consulting firms for services of an intellectual nature according with the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1), the Operational Guidelines for the Selection and Contracting of Consulting Firms in Bank executed Operational work (OP-1155-4); and (iii) Contracting of logistics services and purchase of goods in accordance with Policy GN-2303-20.

- 4.2 The Ministry of Environment and Natural Resources (MARN) through its *Dirección General del Observatorio Ambiental* and the Ministry of Public Works (MOP) will be principal counterparts for this TC. The Bank will coordinate with MARN and MOP, through daily communications from the Bank Office in El Salvador to ensure appropriate collaboration while implementing this TC. The Central America University (UCA), and the University of El Salvador (UES) will participate in this TC as counterparts. The UCA will be responsible for conducting vulnerability assessments in its laboratory (Component 1). The MOP will lead the validation and technical review of the products, especially the Technical Standards (Component 2). MARN, MOP, UCA and UES will sign the MoU for a joint- implementation of this TC.

V. Major Risks

- 5.1 The coordination among the institutions among MARN, MOP, UCA and UES as well as the coordination with other entities related to disaster risk management of the country (e.g., El Salvador Civil Protection) may present problem and cause delay of the execution of this TC. The Bank has the same lessons during the operation of the TC: ES-T1067: Management of Risks by Floods in Watersheds of Rivers Grande San Miguel and Paz. This TC, designed to participate the three national organizations: Ministry of Agriculture (MAG), Civil Protection and MARN (or former SNET) were excellent in its design but no execution in practice due to the lack of coordination among the three organizations. To mitigate this risk, the Bank will be the executing organization to coordinate among the four institutions. Additionally, this TC will hire a permanent technical coordinator (in its Component 2) to make fluent coordination, periodic meetings and frequent dialogues among the counterpart entities.

VI. Exceptions to Bank policy

- 6.1 None.

VII. Environmental and Social Classification

- 7.1 The TC is classified as Category "C" pursuant to the Bank's Environment and Safeguards Compliance Policy (OP 703). No negative social and environmental impact is expected through the activities financed by this TC. (see [SPF- SSF Reports](#)).

Required Annexes:

- Annex I: Letter of Request [MARN](#) and [MOP](#)
- Annex II: [Results Matrix](#)
- Annex III: [Terms of Reference](#)
- Annex IV: [Procurement Plan](#)



MINISTERIO DE MEDIO AMBIENTE Y RECURSOS NATURALES
UNÁMONOS PARA CRECER

MARN-DOA-154/2017

San Salvador, 17 de noviembre de 2017

ASUNTO: Solicitando apoyo de ejecución Proyecto “Plan de acción para la implementación del índice de gobernabilidad y política pública para la gestión de riesgo de desastres”

Señor
Gines Suárez Vasquez
Especialista de Medio Ambiente
Banco Interamericano de Desarrollo-BID
Presente

Estimado señor Suárez:

En el marco de las Estrategias Institucionales, relacionadas con el Cambio Climático y Sostenibilidad Ambiental y con el desarrollo de Infraestructura Sostenible para la Competitividad y Crecimiento inclusivo para el país, las cuales apoyan la construcción y el mantenimiento de una infraestructura social y ambientalmente sostenible para contribuir a aumentar la calidad de vida de los salvadoreños, se solicita al Banco Interamericano de Desarrollo (BID), el apoyo para la ejecución del proyecto “Plan de acción para la implementación del índice de gobernabilidad y política pública para la gestión de riesgo de desastres”.

Históricamente, el desarrollo sostenible del país se ha visto frenado por la frecuente afectación de fenómenos naturales, que sumados a la falta de planificación territorial y alta vulnerabilidad tanto física como social, han dado como resultado numerosas pérdidas materiales y vidas humanas. En este contexto, los eventos sísmicos han sido responsables de más del 40% de las muertes y más del 85% de las pérdidas combinadas.

En las últimas décadas, la cooperación internacional ha apoyado esfuerzos que han permitido generar conocimiento y mejorar las técnicas constructivas del país a través del establecimiento de normativas y reglamentos, sin embargo, los mismos se encuentran desactualizados. Es una necesidad de país contar con un Reglamento Unificado para la Seguridad Estructural de las Edificaciones, con el propósito de reducir el riesgo que representan las edificaciones altamente vulnerables.

1/2

Por lo anterior, se solicita que el BID ejecute esta cooperación técnica en estrecha coordinación con este Ministerio y el Ministerio de Obras Públicas, lo cual se sustenta en el conocimiento específico del Banco respecto a aspectos técnicos de las consultorías, de la preparación de los términos de referencia especializados, así como para efectuar el acompañamiento técnico de las consultorías y la revisión de los productos esperados.

Este proyecto, potenciaría las capacidades técnicas instaladas en El Salvador, las cuales están representadas a través de este Ministerio, otras instituciones públicas, instituciones académicas, la Agencia de Cooperación Internacional del Japón y actores privados, para realizar los estudios necesarios que permitan revisar y actualizar el Reglamento para la Seguridad Estructural de las Construcciones y sus Normas Técnicas, mejorando la calidad de vida de los salvadoreños y contribuyendo a un desarrollo social y económico sostenible. El monto solicitado al BID asciende a \$ 700,000.00 USD.

Atentamente,



Ángel Ibarra

Ángel Ibarra
Viceministro
Encargado del Despacho

c.c. Arq. Eliud Ayala, Viceministro de Obras Públicas, Encargado del Despacho



San Salvador, 20 de noviembre de 2017
Ref.: DMOP-DACGER-507-20-11-2017

ASUNTO: Solicitud de apoyo para proyecto sobre gestión
de riesgo de desastres

Señor
Gines Suárez Vásquez
Especialista de Medio Ambiente
Banco Interamericano de Desarrollo-BID
Presente

Estimado señor Gines:

En el marco de las estrategias institucionales, relacionadas con la adaptación al cambio climático y la gestión del riesgo, y con el desarrollo de infraestructura sostenible para la competitividad y crecimiento inclusivo para el país, las cuales apoyan la construcción y el mantenimiento de una infraestructura social y ambientalmente sostenible para aumentar la calidad de vida de los salvadoreños, se solicita al Banco Interamericano de Desarrollo (BID), el apoyo mediante asistencia técnica no reembolsable para la ejecución del proyecto "Plan de acción para la implementación del índice de gobernabilidad y política pública para la gestión de riesgo de desastres" por un monto estimado de USD \$700,000.00.

Este proyecto tendrá como objetivo realizar los estudios necesarios que permitan revisar y actualizar el Reglamento para la Seguridad Estructural de las Construcciones y sus Normas Técnicas. Es importante mencionar que, este Ministerio tiene como función y rectoría, la promoción y actualización de reglamentos técnicos para el aseguramiento de la infraestructura pública de su competencia.

El proyecto aportará a construir resiliencia en El Salvador, dado que, históricamente, el desarrollo sostenible del país se ha visto frenado por la frecuente afectación de fenómenos naturales, que sumados a la falta de planificación territorial y alta vulnerabilidad tanto física como social, han dado como resultado numerosas pérdidas materiales y vidas humanas. En este contexto, los eventos sísmicos han sido responsables de más del 40% de las muertes y más del 85% de las pérdidas combinadas.



Por lo tanto, se solicita respetuosamente que el BID ejecute esta cooperación técnica en estrecha coordinación con este Ministerio y el Ministerio de Medio Ambiente, lo cual se sustenta en el conocimiento específico del Banco respecto a aspectos técnicos de las consultorías, de la preparación de los TdRs especializados, así como para efectuar el acompañamiento técnico de las consultorías y la revisión de los productos esperados.

Atentamente,

DIOS UNION LIBERTAD



ARQ. ELUD AYALA ZAMORA
VICEMINISTRO DE OBRAS PÚBLICAS
ENCARGADO DEL DESPACHO

C.C.: Lic. Lina Pohl – Ministra de Medio Ambiente y Recursos Naturales de El Salvador






Matriz de Resultados

Resultados

Resultado: 1 To ensure that the structural integrity of the built environment and public safety is

 Indicador CRF

Productos: Progreso Físico y Financiero Anual

1 Technical Capacity Building for Understanding Seismic Risk						Progreso Físico				Progreso Financiero				Tema	Fondo	Banderas	
Productos	Descripción del producto	Unidad de Medida	Base	Ano Base	Modo de Verificación	2018	2019	2020	EOP	2018	2019	2020	EOP				
1.1 Herramientas diseñadas/fortalecidas	Methodologies for Micro-zonation studies/toolkits	Herramientas (#)	0	2017	document	P	1		1	P	30000		30000	Prevención de desastres			
						P(a)			0	P(a)			0				
						A				A							
1.2 Diagnosticos y evaluaciones completados	Micro-zonation pilot studies completed	Diagnósticos (#)	0	2017	study report	P		1	1	P	170000	210000	380000	Prevención de desastres			
						P(a)			0	P(a)			0				
						A				A							
1.3 Diagnosticos y evaluaciones completados	Vulnerability evaluation of construction materials developed	Diagnósticos (#)	0	2017	study report	P		1	1	P	40000	60000	100000	Prevención de desastres			
						P(a)			0	P(a)			0				
						A				A							
2 Strengthening National Seismic Standards and its Implementation						Progreso Físico				Progreso Financiero				Tema	Fondo	Banderas	
Productos	Descripción del producto	Unidad de Medida	Base	Ano Base	Modo de Verificación	2018	2019	2020	EOP	2018	2019	2020	EOP				
2.1 Marcos normativos diseñados	Proposal for updating national building regulations designed	Marcos de referencia (#)	0	2017	Proposal document	P		1	1	P	30000	40000	70000	Prevención de desastres			
						P(a)			0	P(a)			0				
						A				A							
2.2 Políticas diseñadas	National action plan for reducing seismic vulnerability designed	Políticas (#)	0	2017	Action Plan Document	P		1	1	P	40000	40000	40000	120000	Prevención de desastres		
						P(a)			0	P(a)			0				
						A				A							

Otro Costo

Costo Total

	2018	2019	2020	Costo Total
P	\$310,000.00	\$350,000.00	\$40,000.00	\$700,000.00
P(a)				
A				

 Indicador CRF

 Indicador de Productos Estándar

(Indicative TORs)

Methodologies for Micro-zonation studies/toolkits

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for the first activities related to the Component 1 of the TC: developing national technical guidelines and its training toolkits.

Consultancy objective(s)

Overall objective of this consultancy is to develop national technical guidelines and its training toolkits, prior to the implementation of pilot seismic micro-zonation studies that will be implemented by another consultant.

Main activities

The selected candidate will:

- a. Prepare a workplan to encompass concrete activities and schedule to implement these
- b. Collect and review technical methodologies for seismic micro-zonation in and outside of the country
- c. Develop draft national technical guidelines with MARN, MOP, UCA and UES
- d. Develop a toolkit or easy-to-understand materials (including audiovisual materials) for conducting seismic micro-zonation studies in the country

Reports / Deliverables

- Work Plan
- National technical guidelines
- Toolkit

Payment Schedule

20% upon the delivery of the work plan and approval by the Bank

40% upon the delivery of the National technical guidelines and approval by the Bank

40% upon the delivery of the Toolkit approval by the Bank

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering or related field. Experience in disaster assessment and reconstruction/ 10 years of experience.
- Languages: English
- Areas of Expertise: Disaster assessment, disaster risk reduction, public infrastructure, transportation
- Skills: Demonstrated understanding of the seismic micro-zonation study. Field and practical experience of the study will be an asset.

Characteristics of the Consultancy

- Consultancy category and modality: Products and External Services Contractual, Lump Sum
- Contract duration: one month
- Place(s) of work: the residence of the consultant and the Bahamas
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

Consanguinity: Pursuant to applicable Bank policy, candidates with relatives (including the fourth degree of consanguinity and the second degree of affinity, including spouse) working for the Bank as staff members or Complementary Workforce contractuels, will not be eligible to provide services for the Bank.

Diversity: The Bank is committed to diversity and inclusion and to providing equal opportunities to all candidates. We embrace diversity on the basis of gender, age, education, national origin, ethnic origin, race, disability, sexual orientation, religion, and HIV/AIDS status. We encourage women, Afro-descendants and persons of indigenous origins to apply.

Micro-zonation pilot studies

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for the first activities related to the Component 1 of the TC: developing seismic micro-zonation studies.

Consultancy objective(s)

Overall objective of this consultancy is to develop seismic micro-zonation studies in 3-4 pilot territories (or urban areas of selected municipalities), using the technical guidelines and toolkit that another consultant will develop.

The study will be conducted jointly with MARN, MOP, UCA and UES. The pilot municipalities will be selected in close coordination with the MARN, MOP, UCA and UES.

Main activities

The selected candidate will:

- e. Prepare a workplan to encompass concrete activities and schedule to implement these
- f. Collection and analysis of existing studies and research, when exists, related to geological and geotechnical characteristics (including local faults) and historical seismic events in each pilot territory;
- g. Geotechnical field survey to determine the dynamic characteristics of the soil in each micro territory;
- h. Seismic micro-zoning mapping and digitalization, showing the possible ground acceleration (based on some predominant return-periods) in each micro territory.
- i. Transfer all technical knowledge to MARN, MOP, UCA and UES necessary for conducting the study.

Reports / Deliverables

- Work Plan
- Report on historic seismic events in each pilot territory
- Report on geotechnical surveys.
- Seismic micro-zoning survey

- Report on the activities related to technology transfer

Payment Schedule

10% upon the delivery of the work plan and approval by the Bank
10% upon the delivery of the Report on historic seismic events in each pilot territory
25% upon the delivery of the Report on geotechnical surveys.
35% upon the delivery of the Report on Seismic micro-zoning survey
20% upon the delivery of the Report on the activities related to technology transfer

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering or related field. Experience in disaster assessment and reconstruction/ 10 years of experience.
- Languages: English
- Areas of Expertise: Disaster assessment, disaster risk reduction, public infrastructure, transportation
- Skills: Demonstrated understanding of the seismic micro-zonation study. Field and practical experience of the study will be an asset.

Characteristics of the Consultancy

- Consultancy category and modality: Products and External Services Contractual, Lump Sum
- Contract duration: one month
- Place(s) of work: the residence of the consultant and the Bahamas
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

Consanguinity: Pursuant to applicable Bank policy, candidates with relatives (including the fourth degree of consanguinity and the second degree of affinity, including spouse) working for the Bank as staff members or Complementary Workforce contractuels, will not be eligible to provide services for the Bank.

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Vulnerability evaluation of construction materials

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for the first activities related to the Component 1 of the TC: developing vulnerability evaluation studies for construction materials.

Consultancy objective(s)

Overall objective of this consultancy is to estimate structural vulnerability to earthquake shaking intensities of each construction materials and elements.

Because several structural vulnerability laboratory tests are already conducted by using the UCA laboratory (but without the parameter of soil condition or ground seismic motions in each micro territory), this component will take in advantage of these study legacies and will replicate (or recalculate) the parameters considering the result of the seismic micro-zoning study.

Main activities

The selected candidate will:

- Prepare a workplan to encompass concrete activities and schedule to implement these
- Trainings on 3D FEM software and its operation and data inputs for the UCA and other public institutions
- Conducting (replicating or recalculating) vulnerability evaluation of each construction materials and elements using a computational FEM analysis and incorporating the result of the seismic micro-zoning study;
- Reporting the result of the study and disseminating it through a technical meeting among national academic and technical actors

Reports / Deliverables

- Work Plan
- Manual on 3D FEM software
- Preliminary Report on vulnerability evaluation of each construction materials
- Final Report on vulnerability evaluation of each construction materials

Payment Schedule

10% upon the delivery of the work plan and approval by the Bank
20% upon the delivery of the Report on geotechnical surveys.
30% upon the delivery of the Report on Seismic micro-zoning survey
40% upon the delivery of the Report on the activities related to technology transfer

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering or related field. Experience in disaster assessment and reconstruction/ 10 years of experience.
- Languages: English
- Areas of Expertise: Disaster assessment, disaster risk reduction, public infrastructure, transportation
- Skills: Demonstrated understanding of the seismic micro-zonation study. Field and practical experience of the study will be an asset.

Characteristics of the Consultancy

- Consultancy category and modality: Products and External Services Contractual, Lump Sum
- Contract duration: one month
- Place(s) of work: the residence of the consultant and the Bahamas
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

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Proposal for updating national building regulations

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for the first activities related to the Component 2 of the TC: elaborate a proposal to update the Technical Standards for Earthquake Design in El Salvador.

Consultancy objective(s)

Overall objective of this consultancy is to elaborate a proposal to update the Technical Standards for Earthquake Design in El Salvador

The consultant will work closely with MOP, who leads the approval and operation of these construction regulation and standards, will take responsibility.

Main activities

The selected candidate will:

- Prepare a workplan to encompass concrete activities and schedule to implement these
- Review the results of the component 1 (the seismic microzoning and vulnerability evaluation of construction materials) to prepare a road map to incorporate these results into the updated legal documents;
- Review all recent historical earthquake experiences and data in El Salvador, as well as lessons due to the Earthquakes in other countries in LAC region to incorporate in the updated legal documents;
- Review current Technical Standards and other national building regulations to identify points to be updated or modified;
- Elaborate a proposal of updated Technical Standards (and other relevant national building regulations e.g., National Building Regulation) in coordination with MOP;
- Conduct a sector dialogue between the Bank and MOP (and other entities of the government of El Salvador) to officially submit the proposed legal documents so that the government will be in a position to update the regulations.

Reports / Deliverables

- Work Plan
- Draft/final proposal legal document
- Sector dialogue

Payment Schedule

10% upon the delivery of the work plan and approval by the Bank

30% upon the delivery of the draft proposal legal document

30% upon the delivery of the final proposal legal document

30% upon the delivery of the organization and execution of the sector dialogue

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering or related field. Experience in disaster assessment and reconstruction/ 10 years of experience.
- Languages: English
- Areas of Expertise: Disaster assessment, disaster risk reduction, public infrastructure, transportation
- Skills: Demonstrated understanding of the seismic micro-zonation study. Field and practical experience of the study will be an asset.

Characteristics of the Consultancy

- Consultancy category and modality: Products and External Services Contractual, Lump Sum
- Contract duration: one month
- Place(s) of work: the residence of the consultant and the Bahamas
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

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National action plan for reducing seismic vulnerability

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for the first activities related to the Component 2 of the TC: design specific activities necessary for achieving nationwide seismic resilience of public infrastructure (or a national action plan for reducing seismic vulnerability).

Consultancy objective(s)

Overall objective of this consultancy is to design specific activities necessary for achieving nationwide seismic resilience of public infrastructure (or a national action plan for reducing seismic vulnerability) based on the proposed Technical Standards for Earthquake Design.

MARN, MOP, UCA, UES, other relevant national authorities including General Directorate for Civil Protection (Civil Protection) and some municipalities will participate in the process of developing the Action Plan

Main activities

The selected candidate will:

- Prepare a workplan to encompass concrete activities and schedule to implement these
- Review the results of the component 1 (the seismic microzoning and vulnerability evaluation of construction materials) and other relevant studies (including the Bank's Country Risk Profile for El Salvador) to identify the most vulnerable sectors and local territories;
- Identify the effective retrofitting measures to reduce vulnerability of the constructions, using the result of the component 1 - vulnerability evaluation of *construction* materials;
- Conduct cost/benefit analysis (pre-feasibility study) including: develop an inventory of the vulnerable infrastructures in some priority area; classification of these infrastructures by type of structure; cost and benefit estimation of implementing effective retrofitting measures;
- Elaborate the action plan to clarify the actions (or measures) for retrofitting existing critical residential housings and public buildings.
- Organize a national technical workshop to disseminate the result of the Action Plan will be organized.

Reports / Deliverables

- Work Plan
- Draft/final Action Plan
- National Workshop

Payment Schedule

10% upon the delivery of the work plan and approval by the Bank

30% upon the delivery of the draft Action Plan

30% upon the delivery of the final Action Plan

30% upon the delivery of the organization and execution of the National Workshop

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering or related field. Experience in disaster assessment and reconstruction/ 10 years of experience.
- Languages: English
- Areas of Expertise: Disaster assessment, disaster risk reduction, public infrastructure, transportation
- Skills: Demonstrated understanding of the seismic micro-zonation study. Field and practical experience of the study will be an asset.

Characteristics of the Consultancy

- Consultancy category and modality: Products and External Services Contractual, Lump Sum
- Contract duration: one month
- Place(s) of work: the residence of the consultant and the Bahamas
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

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(Indicative TORs)

Project Coordinator

TERMS OF REFERENCE

Background

IDB approved the Technical Cooperation (TC) project titled: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management (ES-T1267). The objective of this new TC is to provide technical support to the national government of El Salvador for updating the national building regulations and developing a national action plan for reducing seismic vulnerability. The expected outcome of this TC is to ensure that the structural integrity of the built environment and public safety is improved for future mass seismic events. The TC includes the two components: (1) Technical Capacity Building for Understanding Seismic Risk; and (2) Strengthening National Seismic Standards and its Implementation.

These terms of reference (TORs) refer to the services of a consultant for coordination and communication related to all activities of the Component 1 and 2 of the TC.

Consultancy objective(s)

Overall objective of this consultancy is to coordinate the communication and all the activities of Component 1 and 2 among MARN, MOP, UCA and UES (hereafter referred to as “the implementing institutions”), in addition to other relevant national authorities including General Directorate for Civil Protection (Civil Protection), donor agencies including JICA, and international and regional organizations, such as Central American Coordination Center for Natural Disaster Prevention (CEPREDENAC).

Main activities

The selected candidate will:

- Prepare a workplan to encompass concrete activities and schedule to implement these.
- Communicate the status of the TC to the Bank’s Team Members.
- Coordinate necessary meetings among the implementing institutions.
- Communicate the developments of the TC to other relevant national authorities as necessary and in coordination with the Bank’s Team Members.
- Coordinate with other donor agencies as necessary.
- Coordinate with international and regional organizations as necessary.

Reports / Deliverables

- Work Plan
- Meeting minutes for coordination meetings
- Drafts of other relevant documents and reports related to this TC as required by Team Members

Payment Schedule

Compensation will be determined in accordance with Banks policies and procedures.

Qualifications

- Academic Degree / Level & Years of Professional Work Experience: Master's or Doctoral degree in Engineering, Economics or related field. Experience in project coordination, project management/ 10 years of experience.
- Languages: Spanish and English.
- Areas of Expertise: Project coordination, project management.
- Skills: Demonstrated capacity to coordinate multiple teams around a common project, and to maintain stakeholders informed. Ability to facilitate communication among the teams and to propose means to expedite project progress.

Characteristics of the Consultancy

- Consultancy category and modality: Individual
- Contract duration: two years (twenty-four months)
- Place(s) of work: CID/CES
- Division Leader or Coordinator: CSD/RND – Gines Suarez and Tsuneki Hori

Payment and Conditions: Compensation will be determined in accordance with Bank's policies and procedures. In addition, candidates must be citizens of an IDB member country.

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PROCUREMENT PLAN FOR BANK EXECUTED OPERATIONS														
Country: El Salvador						Executing Agency: IDB						UDR: CES		
Project number: ES-T1267					Title of Project: Action plan to implement the Governance and Public Policy Index for Disaster Risk Management									
Period covered by the Plan: [24 months]					Total Project Amount: \$ 700,000									
Component	Procurement Type (1) (2)	Service type (1) (2)	Description	Estimated contract cost (US\$)	Selection Method (2)	Type of Contract	Source of Financing and Percentage				Estimated date of the procurement notice	Estimated contract start date	Estimated contract length	Comments
							IDB/MIF		Other External Donor					
							Amount	%	Amount	%				
Component 1	A. Consulting services	Individual Consultant (AM-650)	Methodologies for Micro-zonation studies/toolkits	\$ 30,000	IICQ	Lump Sum	\$ 30,000	100%	\$ -	0%	2018A	2018A	8 months	
Component 1	A. Consulting services	Consulting Firm (GN-2765)	Micro-zonation pilot studies	\$ 380,000	FCS	Lump Sum	\$ 380,000	100%		0%	2018A	2018A	18 months	
Component 1	C. Non consulting services	Corporate Procurement (GN-2303)	National Technical Workshop	\$ 20,000			\$ 20,000	100%		0%	2018B	2018B	1 day WS	
Component 1	A. Consulting services	Individual Consultant (AM-650)	Vulnerability evaluation of construction materials	\$ 80,000	FCS	Lump Sum	\$ 80,000	100%		0%	2018B	2018B	12 months	
Component 2	A. Consulting services	Individual Consultant (AM-650)	Proposal for updating national building regulations	\$ 40,000	IICQ	Lump Sum	\$ 40,000	100%		0%	2019A	2019A	4 months	
Component 2	A. Consulting services	Consulting Firm (GN-2765)	Action Plan	\$ 70,000	FCS	Lump Sum	\$ 70,000	100%		0%	2019A	2019A	5 months	
Component 2	C. Non consulting services	Corporate Procurement (GN-2303)	National Technical Workshop	\$ 20,000			\$ 20,000	100%		0%	2019B	2019B	1 day WS	
Component 2	A. Consulting services	Individual Consultant (AM-650)	Technical Coordinator	\$ 60,000	IICQ	Lump Sum	\$ 60,000	100%		0%	2018A	2018A	15 months	
										0%				
										0%				
										0%				
										0%				
Prepared by:	Tsuneki Hori		TOTALS	\$ 700,000			\$ 700,000	100%	\$ -	0%				
(1) Grouping together of similar procurement is recommended, such as publications, travel, etc. If there are a number of similar individual contracts to be executed at different times, they can be grouped together under a single heading with an explanation in the comments column indicating the average individual amount and the period during which the contract would be executed. For example: an export promotion project that includes travel to participate in fairs would have an item called "airfare for fairs", an estimated total value od US\$5,000, and an explanation in the Comments column: "This is for approximately four different airfares to participate in fairs in the region in years X and X1".														
(2) (i) Individual consultants: ICQ: Individual Consultant Selection Based on Qualifications; SSS: Single Source Selection. Selection process to be done in accordance with AM-650.														
(2) (ii) Consulting firms: Per GN-2765-1, Consulting Firm selection methods for Bank-executed Operations are: Single Source Selection (SSS); Simplified Competitive Selection (<=250K) (SCS); Fully Competitive (>250K) (FCS); and Framework Agreement Task Order (TO). All Consulting Firm selection processes under this policy must use the electronic module in Convergence.														
(2) (iii) Goods: Per GN-2765-1, par. A.2.2.c: "The procurement of goods and related services, except when such goods and related services are necessary to achieve the objectives of the Bank-executed Operational Work and are included in the consulting services contract and represent less than ten percent (10%) of the consulting services contract value."														