

TERMS OF REFERENCE (INDICATIVE)

Senior Technical Advisor to supervise the technical quality of implementation of the entire project

TRINIDAD AND TOBAGO

TT-T116

Strengthening the Integrated National Early Warning System in Trinidad and Tobago

Background

Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.

Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.

In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system.

The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. The main purpose of this TOR is to supervise the implementation of these two components from a technical standpoint and provide appropriate advice to the relevant agencies of the Government of Trinidad and Tobago as appropriate, as well as to identify challenges and make recommendations for their resolutions.

Objectives:

The objective of the consultant is to provide technical advice to the Government of the Republic of Trinidad and Tobago (GoRTT) agencies on all activities included in the TC, particularly prior to and during executing the activities as appropriate. In the process, the consultant will identify challenges and make constructive recommendations to both the GoRTT and the IDB on how to resolve them.

Key Activities:

The consulting firm shall do the following:

- The consultant will basically engage in this project once a month for a week (i.e., about 20% of the duration). In addition, a field visit to the country will be made once every two months. However, this does not apply during the summer or year-end vacation season.
- The consultant will perform meetings with the agencies involved in the project (e.g., ODPM and TEMA) to review the progress of the project and the preparation of deliverables (or submissions from the respective consultants). The consultant will review the deliverables at that time (or before) and discuss any comments with the project agencies and the IDB. If there are any challenges, he/she will provide constructive advice on how to resolve them.
- The consultant will participate as much as possible in project field activities (e.g., installation of camera sirens) with the project agencies and provide advice as needed.
- About once every six months, the consultant will organize a stakeholder engagement roundtable technical meeting with a wide range of national and international stakeholders (online, in-person, or in a hybrid format) for the purpose of sharing technical experiences (results, good practices, and lessons learned) throughout the project.

Expected Deliverables, project schedule/payments and milestones:

The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Inception Report (detailed work plan)	10%	Two weeks after contracting
Report on the First Stakeholder Engagement Technical Roundtable Meeting	30%	Six months after contracting
Report on the Second Stakeholder Engagement Technical Roundtable Meeting	30%	12 months after contracting
Report on the Third Stakeholder Engagement Technical Roundtable Meeting	30%	18 months after contracting

Reporting Requirements

The consultant is expected to produce the deliverables within the timeline as described above.

Required:

- **Citizenship:** Citizenship of one of the 48 member countries.
- **Consanguinity;** No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.
- **Education;** The consultant should have a minimum of a Master's degree in Public Administration (Disaster Management Administration) or similar/related degree, plus a minimum of 10 years of experience in similar development in the field of disaster risk management.

- **Experience:** Minimum of 10 years of equivalent experience.
- **Languages:** English.

General and technical competencies.

- **Knowledge:** Disaster Risk Management, Public Policy Climate Change Adaptation. Coordination and sector dialogue skills.

Opportunity Overview

- **TYPE AND FORM OF CONTRACT:** External Product and Service Consultant (PEC). Lump sum payment.
- **Duration/Start Date:** 18 months/beginning January 15, 2023. 90 days in total. Including 9 travels to the Republic of Trinidad and Tobago (5 x 9 = 45 days in total).
- **Location:** Consultant's place of residence and the Republic of Trinidad and Tobago.
- **Contact Person:** Disaster Risk Management Specialist (CSD/RND).
- **REQUIREMENTS:** Must be a citizen of one of the 48 IDB member countries and have no family member currently working for the IDB Group.

Payment Methods and Conditions Compensation will be determined in accordance with the Bank's policies and procedures. The Bank may reimburse travel and transportation expenses in accordance with applicable policies. Candidates must also be citizens of one of the IDB member countries.

Visas and Work Permits: The Bank may submit visa applications to the relevant immigration authorities in accordance with applicable policies, but the granting of visas shall be at the discretion of the immigration authorities. However, it shall be the candidate's responsibility to obtain any visa or work permit required by the authorities of the country of service. If the candidate is unable to obtain a visa or work permit to provide services to the Bank, the contractual offer shall be revoked.

Blood: In accordance with applicable Bank policies, candidates who have relatives (by blood to the fourth degree, including spouse, and by affinity to the second degree) working for the Bank as officers or supplemental contract staff are ineligible to provide services to the Bank.

DIVERSITY: The Bank is committed to diversity and inclusion and equal opportunity for all candidates. We welcome diversity by gender, age, education, national origin, ethnicity, race, disability, sexual orientation, religion, and HIV/AIDS status. We welcome applications from women, people of African descent, and indigenous peoples.

TERMS OF REFERENCE (INDICATIVE)

Organizing an online/hybrid international workshop to share lessons learned from past early warning systems in other countries

TRINIDAD AND TOBAGO

TT-T1116

Strengthening the Integrated National Early Warning System in Trinidad and Tobago

1. Background and justification

- 1.1 Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.
- 1.2 Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.
- 1.3 In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system.
- 1.4 The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. This consultant is one of the activities under Component 1. The main objective of this TOR is to prepare, organize and manage an online international workshop to share good practices and lessons learned from past early warning systems in other countries.

2 Objectives:

- 2.1 The objective of the consultant is to provide services to prepare, organize and manage an online/hybrid international workshop to share good practices and lessons learned from past early warning systems in other countries.
- 2.2 This online/hybrid international workshop will adopt the format that the IDB has used in recent years (e.g., Regional Policy Dialogues). This means that the event will be prepared, organized, and conducted with a number of interesting and fun ways for participants to participate in an inclusive and participatory manner (e.g., through gamification).
- 2.3 The workshop is basically 6 to 8 hours total. This can be done in one day or split over two days. The workshop is scheduled to be held around April 2023.

- 2.4 Participants are basically expected to be project-related agencies of the Government of the Republic of Trinidad and Tobago (GoRTT), represented by the ODPM and TEMA. However, in some cases, international (or Caribbean), regional, and other government agencies may be invited. In any event, the identification of participants will be coordinated with input from the GoRTT.
- 2.5 The workshop aims to share good practices and lessons learned on early warning systems (EWS) in other countries with GoRTT stakeholders. Some possible topics include the use of community sirens in Ecuador, climate hazard observation using the X-band radar network in Japan, community awareness activities using the media in Haiti, and a bottom-up analysis of why citizens did not evacuate during Hurricane Dorian in The Bahamas.

3 Key Activities:

The consulting firm shall do the following:

- 3.1 Develop a 1-2 minute video material that communicates the main focus of the TC project in a clear and eye-catching manner.
- 3.2 Control the flow of meetings and presentations during the meeting. In addition, the consultant will perform moderation for the meeting e.g., changes in screens, presenters, etc.
- 3.3 Record the meeting on video.
- 3.4 Develop audio-visual materials to stimulate the meeting participants and maintain the interest and engagement of the participants. These will include the creation of interactive communication materials using Menti, etc.
- 3.5 Prepare minutes at the end of the meeting.
- 3.6 Provide some logistical support in preparation for the meeting (e.g., sending out invitations).

4 Expected Deliverables, project schedule/payments and milestones:

- 4.1 The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Signing of contracts and delivery of workplans	10%	One week after contracting
Completion report of all activities in the preparation phase	40%	One months after contracting
Conducting and recording of the meeting	40%	Two months after contracting
Final report of the meeting	10%	Three months after contracting

5 Reporting Requirements

- 5.1 The firm is expected to produce the deliverables within the timeline as described above.

6 Acceptance Criteria

- CSD/RND sector specialists will review the deliverables to ensure that they meet the research criteria and comply with the conditions outlined in the ToR. Disaster Risk Management Specialist (CSD/RND).

7 Other requirements

7.1 The team of experts should have demonstrable experience in facilitating virtual events for large audiences, high performance team management, experience as a moderator, and fluency in English. The key team shall consist of at least the following key individuals

- A General Manager with experience in developing video materials and virtual conferences.
- An expert in media editing and production.
- A specialist in the use of tools necessary for virtual meetings.
- A communications specialist.

7.2 **Citizenship:** Citizenship of one of the 48 member countries.

7.3 **Consanguinity;** No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.

7.4 **Experience:** Minimum of 10 years of equivalent experience.

7.5 **Languages:** English.

7.6 **Knowledge:** Media production, virtual communication, participatory engagement.

8 Supervision and reporting

3.1 CSD/RND sector specialists will supervise the activities related to the TOR.

TERMS OF REFERENCE (INDICATIVE)**Detailed (technical) diagnosis of national EWS and concrete plans for strengthening***TRINIDAD AND TOBAGO**TT-T1116***Strengthening the Integrated National Early Warning System in Trinidad and Tobago****1. Background**

- 1.1 Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.
- 1.2 Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.
- 1.3 In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system. The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. This consultant is one of the activities under Component 1.

2. Objectives:

- 2.1 The objective of this consultancy is to conduct a detailed diagnostic of the early warning system/network throughout Trinidad and Tobago to (i) understand its capacity and potential limitations and (ii) provide a long term development (action) plan for GoRTT to strengthening its performance.
- 2.2 The types of instrumentation to be covered (or components needed for an EWS) are: (i) equipment needed to observe natural phenomena and hazards (e.g., climate stations and strong motion seismographs); (ii) hazard analysis by a central center (e.g., meteorological agency) based on observed data and the decision whether or not to disseminate warning/alert information; and (iii) provision of early warning/alert information to citizens and communities (e.g., through community sirens). The consultant will perform a gap analysis for these elements and make recommendations for future performance enhancement.

- 2.3 The gap analysis will be performed objectively using quantitative and scientifically sound criteria from a reputable organization such as the World Meteorological Organization.
- 2.4 Target hazards may include floods, torrential rains, earthquakes, etc. This will be finalized in consultation with Trinidad and Tobago officials.
- 2.5 The gap analysis will include not only an assessment of equipment and instrumentation, but also an objective evaluation of the legal framework, organizational structure, and organizational capacity.
- 2.6 The recommendations will be based on long-term technological trends (e.g., discussing and verifying the effectiveness of X-band radar, which is not currently in use but may be in the future).

3. Key Activities:

The consulting firm shall do the following:

- 3.1 Develop a clear, detailed framework for the entire study (see above for the elements for this). In addition, the consultant will develop a detailed work plan based on the detailed framework and present it to GoRTT stakeholders/government officials.
- 3.2 Collect information on the target instruments. This will include information gathering through discussions with Trinidad and Tobago government agencies in the field, as well as direct and empirical information gathering through site visits.
- 3.3 Collect information on relevant organizations and legal structures. This will be obtained primarily through relevant stakeholders in the field.
- 3.4 Perform a gap analysis. The consultant will also perform a presentation (validation) to the GoRTT stakeholders/government officials when a draft version of the gap analysis is prepared.
- 3.5 The consultant will perform a final recommendation compilation and presentation (validation) to the GoRTT stakeholders/government officials.

4. Expected Deliverables, project schedule/payments and milestones:

- 4.1 The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Signing of contracts and delivery of workplans	10%	One week after contracting
Completion of required data collection	30%	two months after contracting
Gap analysis	30%	four months after contracting
Final recommendations.	30%	six months after contracting

5. Reporting Requirements

- 5.1 The consultant firm is expected to produce the deliverables within the timeline as described above.

6. Acceptance Criteria

- 6.1 CSD/RND sector specialists will review the deliverables to ensure that they meet the research criteria and comply with the conditions outlined in the ToR. Disaster Risk Management Specialist (CSD/RND).

7. Other Requirements

- 7.1 This consultancy requires a team of experts covering many areas including natural hazard monitoring, risk analysis, critical risk communication (using community sirens, etc.), organizational and legal structures, and community emergency organization.
- 7.2 The primary team shall consist of at least the following key individuals:
- A General Manager familiar with the overall early warning system
 - Scientific and technical experts (in areas such as hazard observation, disaster risk analysis, etc.)
 - Experts in organization and governance (e.g., legal and organizational structures)
 - Communication experts (e.g., to disseminate early warning/alert information through community sirens)
 - Experts in community disaster management, community organization, and awareness-raising.
- 7.3 **Citizenship:** Citizenship of one of the 48 member countries.
- 7.4 **Consanguinity;** No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.
- 7.5 **Experience:** Minimum of 10 years of equivalent experience.
- 7.6 **Languages:** English.
- 7.7 **General and technical competencies.**
- **Knowledge:** Disaster risk management and early warning systems

8. Supervision and reporting

- 8.1 CSD/RND sector specialists will supervise the activities related to the TOR.

TERMS OF REFERENCE (INDICATIVE)

Priority Investment Project Design for Strengthening the Early Warning System in the Republic of Trinidad and Tobago

TRINIDAD AND TOBAGO

TT-T1116

Strengthening the Integrated National Early Warning System in Trinidad and Tobago

1. Background

- 1.1 Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.
- 1.2 Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.
- 1.3 In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system.
- 1.4 The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. This consultant is one of the activities under Component 1.

2. Objectives:

- 2.1 The objective of this consulting work is to prepare a preliminary feasibility study in accordance with the items identified as short-term priorities for strengthening the early warning system (EWS) in Trinidad and Tobago, based on the separate study: Detailed (technical) diagnosis of national EWS and concrete plans for strengthening.
- 2.2 It is envisioned that this preliminary feasibility study could be targeted to certain specific areas or to the entire country. Moreover, the natural hazards covered by this study may include floods, torrential rains, earthquakes, etc. In any case, these related frameworks/scopes will be finalized based on the recommendations of the separate study described above, and in full consultation with the GoRTT stakeholders/government officials.

2.3 Due to the nature of the investment project to strengthen the early warning system, the consultancy will need to consider the following components:

- Hazard observation
- Risk analysis and decision-making for issuing warnings/alerts
- Dissemination and communication of issued warnings/alerts
- Community response capacity.

2.4 The final deliverable (report) of this consultancy will include: a list of the items to be invested and the estimated budget (note: this includes the initial investment and any required budget for maintenance and operation, including personnel and training costs); the estimated economic benefits of this investment (note: this includes not only the benefits of reducing human losses due to disasters, but also all secondary benefits, e.g., preventing crimes by installing community sirens with cameras, improving agricultural productivity by improving the accuracy of weather forecasts, and enhancing the image of the country to tourists).

3. Key Activities:

The consulting firm shall do the following:

- 3.1 Develop a clear detailed framework for the entire study (See above for the elements for this). In addition, the consultant will prepare a detailed work plan based on this framework and perform a presentation to GoRTT stakeholders/government officials.
- 3.2 Collect and understand existing and relevant literature. This will include a study, " Detailed (technical) diagnosis of national EWS and concrete plans for strengthening ," which will be the input for this Technical Cooperation (TC) project: TT-T1116.
- 3.3 Identify short-term priority investment items/actions from the above study. These items should be inclusive of the above components: Hazard observation, Risk analysis and decision-making, etc. These identified priority items will be validated with the GoRTT stakeholders. The investment budget size and number of years for implementation will also be coordinated with the GoRTT stakeholders.
- 3.4 Estimate the economic benefits of the investment project based on the list of priority items/actions identified. A comparative analysis will be performed, including several alternative investment options.
- 3.5 Validate and outreach all results of the study in a final workshop.

4. Expected Deliverables, project schedule/payments and milestones:

4.1 The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Signing of contracts and delivery of workplans/incentive report.	10%	One week after contracting
Completion of required data collection/ Identify short-term priority investment items/actions with cost estimation.	40%	three months after contracting
Estimate the economic benefits/final validation	50%	six months after contracting

5. Reporting Requirements

5.1 The consultant is expected to produce the deliverables within the timeline as described above.

6. Acceptance Criteria

6.1 CSD/RND sector specialists will review the deliverables to ensure that they meet the research criteria and comply with the conditions outlined in the ToR. Disaster Risk Management Specialist (CSD/RND).

7. Other Requirements:

7.1 This consultancy requires a team of experts covering many areas including natural hazard monitoring, risk analysis, critical risk communication (using community sirens, etc.), organizational and legal structures, and community emergency organization.

- The primary team shall consist of at least the following key individuals:
- A general manager familiar with the overall early warning system
- Scientific and technical experts (in areas such as hazard observation, disaster risk analysis, etc.)
- Economist

7.2 **Citizenship:** Citizenship of one of the 48 member countries.

7.3 **Consanguinity;** No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.

7.4 **Experience:** Minimum of 10 years of equivalent experience.

7.5 **Languages:** English.

7.6 **Knowledge:** Disaster risk management and early warning systems

8. Supervision and reporting

8.1 CSD/RND sector specialists will supervise the activities related to the TOR.

TERMS OF REFERENCE (INDICATIVE)

Training for TEMA and ODPM to implement the community emergency operation using drones

TRINIDAD AND TOBAGO

TT-T11116

Strengthening the Integrated National Early Warning System in Trinidad and Tobago

1. Background

- 1.1 Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.
- 1.2 Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.
- 1.3 In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system.
- 1.4 The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. This consultant is one of the activities under Component 2.

2. Objectives:

- 2.1 The purpose of this consultancy is to provide training in disaster response exercises using drones.

3. Key Activities:

The consulting firm shall do the following:

- 3.1 Provide GoRTT (ODPM and TEMA) with examples from other countries on disaster emergency exercises using drones.
- 3.2 Also provide GoRTT with a series of trainings on basic drone operations.
- 3.3 Attend practical drone-based disaster evacuation drills and provide advice from a technical perspective.

3.4 All trainings will be videorecorded and delivered to ODPM and TEMA as future training materials.

4. Expected Deliverables, project schedule/payments and milestones:

4.1 The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Drone operation trainings	40%	3 months after contracting
Training materials (videorecorded)	50%	6 months after contracting

5. Reporting Requirements

The consultant is expected to produce the deliverables within the timeline as described above.

6. Acceptance Criteria:

6.1 CSD/RND sector specialists will review the deliverables to ensure that they meet the research criteria and comply with the conditions outlined in the ToR. Disaster Risk Management Specialist (CSD/RND).

7. Other requirements

7.1 This consultancy requires a team of experts covering many areas including emergency operation training

7.2 The primary team shall consist of at least the following key individuals:

- disaster emergency training
- drone operation training

7.3 **Citizenship:** Citizenship of one of the 48 member countries.

7.4 **Consanguinity;** No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.

7.5 **Experience:** Minimum of 10 years of equivalent experience.

7.6 **Languages:** English.

7.7 **Knowledge:** Disaster risk management and early warning systems

8. Supervision and reporting

8.1 CSD/RND sector specialists will supervise the activities related to the TOR.

TERMS OF REFERENCE (INDICATIVE)

Early Warning System (EWS)-related pilot activities for selected pilot communities in Trinidad/Tobago

TRINIDAD AND TOBAGO

TT-T1116

Strengthening the Integrated National Early Warning System in Trinidad and Tobago

1. Background

- 1.1 Since its creation in 1959, the Inter-American Development Bank (hereafter IDB or the Bank) has been the primary source of financing for economic, social, and institutional development in the Latin America and Caribbean (LAC) region. The Bank provides loans, grants, guarantees, policy recommendations, and technical assistance to the public and private sectors in borrowing member countries.
- 1.2 Trinidad and Tobago is exposed to multiple natural hazards, including earthquakes, coastal storms, floods, coastal erosion, landslides, among others. The International Disaster Database (EM-DAT, 2022) records 11 major disasters that occurred in the country between 1990 and 2021. These disasters affected more than 153,000 people during the same period, with economic losses reportedly amounting to US\$47 million. Separately, the United Nations DesInventar database reports that more than 1,300 natural disasters (including small scale disasters) have occurred in the country during the period from 1990 to 2014. Recently, particularly in October 2018, massive torrential rains and widespread flooding occurred, severely affecting about 150,000 people. The number of these disasters has been increasing in recent years, partly due to the climate change.
- 1.3 In light of this background, the Government of Trinidad and Tobago (Ministry of Planning and Development) requested the IDB to undertake a technical cooperation project, "Strengthening the Integrated National Early Warning System in Trinidad and Tobago. The overall objective of the TC is to achieve citizen safety by improving the capacity of Trinidad and Tobago to implement disaster risk management. To further this objective, the TC will focus on supporting the strengthening of the country's early warning system.
- 1.4 The TC will consist of two components: analysis of the current situation and identification of key issues for strengthening the country's early warning system, and piloting of priority actions. This consultant is one of the activities under Component 2.

2. Objectives:

- 2.1 The objective of this consulting work is to contribute to improving the disaster risk management capacity at the community level in Trinidad and Tobago.
- 2.2 The "Community-level disaster risk management capacity" is the ability to protect their lives and properties during (or immediately prior to) a disaster, based on the information received from the central/local governments, as well as on their own perceptions/awareness, so that damage and loss can be prevented or not spread. The following three elements are important to realize this:
 - All community members receive early warnings and alerts in a fair, accurate, and timely manner.
 - The community is well aware of disaster risks and preparedness.

- Strengthen the community's ability to help vulnerable individuals (e.g., the elderly and disabled) to help each other within the community.
- 2.3 In supporting these activities, the role of government organizations such as ODPM, TEMA, and other NGOs is important. This consultancy does not, therefore, provide the full range of services needed to improve disaster risk management capacity at the community level. Rather, the consultant will focus on providing on-site training to ODPM/TEMA, local governments, NGOs and community organizations to strengthen them and thereby contribute to strengthening the community-level disaster risk management capacity. In other words, this consultancy aims to create a process of the national disaster risk management actors' empowerment so that the results are sustained beyond the project implementation period.
- 2.4 This consulting work will adopt a comprehensive approach that does not rely on specific hazard. In other words, even though at the activity level, it is assumed that the work should focus on one particular hazard (e.g., flooding). However, from the perspective of strengthening the community-level disaster risk management capacity, the framework of this consulting work should be carried out in the multi-hazard context (e.g., landslides, floods and earthquakes, etc).
- 2.5 The selection of the target communities where the consultant will perform activities will be based on the consensus of the ODPM/TEMA. It is planned that community sirens with cameras will be installed in the target communities through this consultancy. Therefore, one of the main activities of this consultancy will be to install and test the sirens/cameras, to inform the residents about the sirens/cameras, and to improve the community's disaster preparedness capacity using this equipment.

3. **Key Activities:**

The consulting firm shall do the following:

- 3.1 Select target communities under the direction of ODPM/TEMA, develop a work plan, and conduct a project launch workshop. The workshops will be held in the communities where the activities will take place. The workshop will be attended by ODPM/TEMA and local government officials. During the workshop, the consultant will also inform the participants that the sirens with cameras will be installed in the communities on a pilot basis.
- 3.2 Install and verify the operation of the sirens with cameras. This will be conducted in the presence of community members, ODPM/TEMA, and others (e.g., local NGOs).
- 3.3 Develop an action plan for strengthening community disaster risk management capacity. The central focus of this action plan will be to highlight the intrinsic linkages between socio-economic activities and disaster risk in the community, and to identify the underlying drivers of the risk (e.g., environmental degradation, weak governance, and vulnerable livelihoods) through dialogue with the community members. The workshop will then discuss how strengthening the capacities of ODPM/TEMA, local governments and NGOs, and communities may contribute to risk reduction. The action plan will also include specific activities (community workshops, formation of community disaster management organizations, evacuation drills, etc.).
- 3.4 The consultant will train facilitators for community disaster risk management. The objective is to train trainers in the community disaster risk management, who will then become training actors for the risk management permanently within the community.
- 3.5 The consultant will develop an action manual (protocol) for strengthening risk management at the community level. This will include protocols for coordination with ODPM/TEMA and local authorities, as well as operational provisions for community sirens with cameras.
- 3.6 The consultant will accompany the community training WSs to be undertaken by the previously trained trainer, and will advice to him/her and to the participants on the actions needed to reduce

the disaster risk. This training program will be performed in accordance with the action plan described above.

- 3.7 The consultant will accompany and advise as appropriate during the evacuation drills (organized by ODPM/TEMA) that are considered to be carried out in accordance with the action plan mentioned above.
- 3.8 The consultant will summarize the results of the activities during and at the end of the exercise. The format will basically be a written report, but it is recommended that the report be accompanied by a video or other audiovisual material. In particular, the report should identify lessons learned and good practices and include recommendations to the GoRTT (TEMA/NEMA) for the future.

4. **Expected Deliverables, project schedule/payments and milestones:**

- 4.1 The Consultant shall submit the following products to the IDB:

Deliverables	% of payment	Due date after contract signing
Signing of contracts and delivery of workplans/inception report.	10%	two months after contracting
Sirens with camera installed	20%	Four months after contracting
Action plan	30%	Six month months after contracting
Mid-term report	30%	Eight months after contracting
Final report	10%	Fifteen months after contracting.

5. **Reporting Requirements**

- 5.1 The consultant is expected to produce the deliverables within the timeline as described above.

6. **Acceptance Criteria**

- 6.1 CSD/RND sector specialists will review the deliverables to ensure that they meet the research criteria and comply with the conditions outlined in the ToR. Disaster Risk Management Specialist (CSD/RND).

7. **Other requirements:**

- 7.1 The development of this consultancy will be supported by a team responsible for different activities. Some members will participate at all times during the implementation period, while others will participate at specific times during the project, according to their availability, experience, and professional profile. In any case, the core members are:
 - The general manager, who oversees all activities.

- An engineer who will perform the installation and operational testing of the community sirens with cameras.
- A community disaster risk management expert
- Hazard and risk analysis expert

7.2 Citizenship: Citizenship of one of the 48 member countries.

7.3 Consanguinity; No relatives (blood relatives up to the fourth degree, including spouse, and in-laws up to the second degree) working for the IDB Group.

7.4 Experience: Minimum of 10 years of equivalent experience.

7.5 Languages: English.

7.6 Knowledge: Disaster risk management and early warning systems at the community level/

8. Supervision and reporting

8.1 CSD/RND sector specialists will supervise the activities related to the TOR.