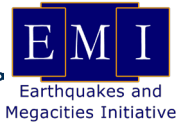




TANZANIA
URBAN RESILIENCE
PROGRAMME



**DISASTER RISK
MANAGEMENT
INDEX**

REFERENCE HANDBOOK

**FOR THE
DAR ES SALAAM
REGION**

**DISASTER RISK
MANAGEMENT INDEX**

The Disaster Risk Management Index Reference Handbook

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Foreword

Dar es Salaam City is the main economic center for Tanzania, but that role as the engine of growth for the country is threatened by various types of disasters. In recent years, the city and its citizens have been negatively affected by the human, physical and economic losses from several natural and man-made disasters. In order to ensure the sustainable growth of Dar es Salaam, protect its citizens and keep its investments safe from the impacts of potentially catastrophic events, there is a need to strengthen the Disaster Risk Management (DRM) system in the city. The establishment of a mechanism for measuring the effectiveness of such a DRM system is a key step towards reducing disaster risk and making Dar es Salaam a disaster resilient city.

The Dar es Salaam Disaster Risk Management Index (DRMI) is one such mechanism; a participatory tool that will enable the comprehensive self-assessment of the capacity of different institutions in Dar es Salaam to identify, manage and reduce disaster risk. Through the DRMI, the Regional Authority, the Municipal Councils, and our development partners will be able to identify the conditions that influence the resilience of our communities, collectively establish a baseline on the current state of resilience, track the effectiveness of efforts to scale up resilience in Dar es Salaam, and help the various stakeholder groups in the city understand the different aspects of disaster risk and how they can contribute to reducing such risk.

This DRMI Reference Handbook, is intended to help users understand how to undertake the self-assessment process. It explains the rationale for and concepts behind the DRMI, the DRMI rating system, and the participatory process undertaken in designing the Index. The Handbook also provides the context for each of the indicators in the five components of the Index, as well as examples of key activities and evidence that can guide users in determining their level of attainment for each indicator.

Clearly, the DRMI Reference Handbook, together with its accompanying web-based software, are valuable tools that will help us to understand the nature of disaster risk in Dar es Salaam and develop strategies and plans to better manage such risk. I would therefore like to call upon the Municipal Councils and other stakeholders to make use of this reference to carry out regular assessments so that we can effectively measure the progress being made towards making Dar es Salaam a disaster resilient city.

HON. PAUL C. MAKONDA
REGIONAL COMMISSIONER
DAR ES SALAAM

Acknowledgements

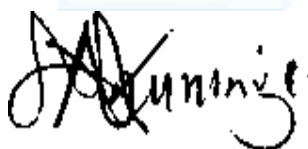
The Disaster Risk Management Index for the Dar es Salaam Region were produced through a participatory process involving many individuals, different stakeholders and commitments from various institutions. Much time and resources were used to prepare this very important document. It is not easy to mention everyone involved.

First of all, I would gratefully acknowledge funding support from United Kingdom's Department for International Development and the World Bank. It was under the Tanzania Urban Resilience Program that financial and technical support was provided for preparing the Disaster Risk Management Index for Dar es Salaam.

I would also like to thank the entire team of consultants for their tireless efforts to facilitate the development of the DRMI and to produce this DRMI Reference Guide. Thanks go to its developers: Dr. Bijan Khazai (Scientific Coordinator and Team Leader, EMI), Dr. Trevor Girard (Disaster Management Expert, EMI), Jerome Zayas (Project Manager and Training and Capacity Building Expert, EMI), Jose Mari Daclan (Senior Knowledge Management Expert, EMI), Dr. Fouad Bendimerad (Team Leader and Urban Resilience Expert, EMI), Precious Zara (Project Coordinator and GIS Specialist, EMI), Denise Ann-Marie Suarez (Technical Assistant, EMI), Bernadetha Mushi (Research Fe, Prof. Mlengi Fanuel Mgendi (Disaster Reduction, Environment and Geoinformation, Ardhi University), Prof. Guido Uhinga (Disaster Risk Management Expert and Head of User Services, Ardhi University), and Prof. Joseph Mayunga (DRM Expert and Head of Training Services, Ardhi University).

I am also grateful to the World Bank team of Tanzania Edward Charles Anderson (Senior Disaster Risk Management & Information Communication Technology Specialist), Eric Dickson (Senior Urban Development & Disaster Risk Management Specialist), Claudia Lorena Trejos Gomez (Senior Disaster Risk Management Consultant), Nyambiri Kimacha (Senior Community Resilience Consultant), and Daud Fufuji (Urban Data and GIS Consultant). I would also like to extend my sincere appreciations to Charles Msangi (Senior Economist & Disaster Risk Management Expert, Prime Minister's Office).

Last but not least, I thank the Municipal Disaster Coordinators and the core group of municipal staff and experts from Kinondoni, Ilala, Ubungu, Temeke, and Kigamboni Municipal Councils as well as the expert team from DarMAERT; Dr. Christopher Mnzava (DarMAERT Coordinator), Grace Mawalla (Dar es Salaam Regional Coordinator, Tanzania Red Cross Society), Lawrence Mtui (DRM Expert), Masalida Zephania (Social Welfare Officer, RAS), Salum Hamidu (Landuse Planner, RAS) and for their participation, contribution, continuous followup and feedback during designing and validation of the Disaster Risk Management Index and assessment criteria.



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Abbreviations & Acronyms

ARU	Ardhi University	ERP	Emergency Response Plan
ADB	Asian Development Bank	EOC	Emergency Operations Center
BIS	Basic Infrastructure and Services	FEMA	Federal Emergency Management Agency
CBOs	Community Based Organizations	FG	Focus Group
CCOUC	Collaboration Centre for Oxford University	GFDRR	Global Facility for Disaster Reduction and Recovery
CG	Core Group	GIZ	Gesellschaft für Internationale Zusammenarbeit
CUHK	Chinese University of Hong Kong	HFA	Hyogo Framework for Action
DaLA	Damage, Loss and Needs Assessment	IBM-AECOM	International Business Machines –Architecture, Engineering, Consulting Operations and Maintenance
DarMAERT	Dar es Salaam Multi-Agency Emergency Response Team	ICS	Incident Command System
DAWASA	Dar es Salaam Water and Sewerage Authority	ICT	Information and Communication Technologies
DAWASCO	Dar es Salaam Water Sewerage Cooperation	MUHAS	Muhimbili University of Health and Allied Science
DfID	Department for International Development	NUA	New Urban Agenda
DRM	Disaster Risk Management	NGOs	Non-Governmental Organizations
DRMI	Disaster Risk Management Index	PHP	Philippine Peso
DRR	Disaster Risk Reduction	PDNA	Post-Disaster Needs Assessment
EiE	Education in Emergencies	RAS	Regional Administrative Secretary
EMI	Earthquakes and Megacities Initiative	RPS	Resilience Performance Scorecard
EPIC	Earthquake Protection Insurance Corporation of the Philippines	RSLUP	Risk-sensitive Land Use Planning
ERF	Emergency Response Functions	SDG	Sustainable Development Goals

SFDRR	Sendai Framework for Disaster Risk Reduction
SOPs	Standard Operation Procedures
TRCS	Tanzania Red Cross Society
TASAF	Tanzania Social Action Fund
TED	Training, Exercises, and Drills
TV	Television
TANESCO	Tanzania Electric Supply Company Limited
TANROADS	Tanzania National Roads Agency
TEPRP	Tanzania Emergency Preparedness and Response Plan
TURP	Tanzania Urban Resilience Program
UDSM	University of Dar es Salaam
UDOM	University of Dodoma
UNISDR	United Nations International Strategy for Disaster Reduction
UNHABITAT	United Nations Human Settlement Programme
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNDRR	United Nations Disaster Risk Reduction
UNESCO	United Nations Educational Scientific and Cultural Organization
USA	United States of America
WB	World Bank

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Overview

Dar es Salaam is on track to become a megacity by 2030, with a population of over 10 million. The rapid nature of Dar es Salaam's urban transition has increased the exposure of the city to climate change and other natural hazards, which could significantly impact its potential for sustained economic growth (African Development Bank, 2014). Dar es Salaam Region is also among the areas that are prone to various disasters in Tanzania. It has experienced occurrence of disasters such as floods, explosions, traffic accidents, collapse of buildings and epidemic outbreaks; all these leading to loss of lives, damage to properties and destruction of the environment. The twin pressures of rapid urbanization and a changing climate are driving an accelerating increase in disaster risk (UNDRR, 2019).

In working towards a more resilient Dar es Salaam Region, the World Bank (WB) and the United Kingdom's Department for International Development (DfID) are implementing the Tanzania Urban Resilience Program (TURP) to begin strategically building resilience in Tanzanian cities, including Dar es Salaam. Launched on May 31, 2017, the program supports activities spread through four program work Pillars. Pillar 1, focuses on establishing actionable data for risk reduction planning and response measures. Pillar 2 activities are focused on planning and coordination for risk reduction. Pillar 3 deals with emergency management and preparedness activities. Finally, the Resilience Academy has evolved into a standalone fourth pillar of TURP following high demand for a skills and sustainability focus to investments in data, scientific tools, and models, as well as risk management practices.

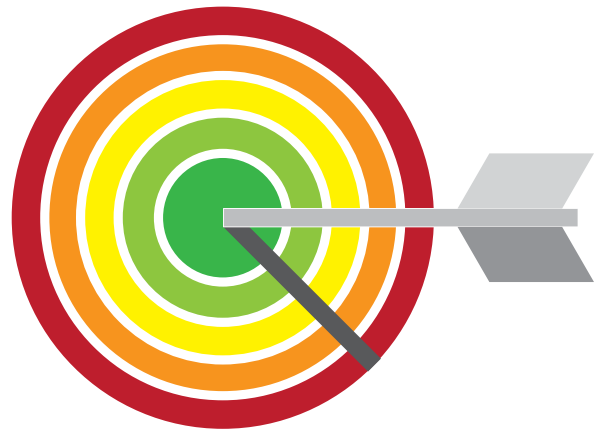
It is within this context and deep-dive engagement to ensure DRM and sustainable development in Dar es Salaam, that the WB engaged the EMI to develop and apply a tool for the comprehensive assessment of institutional capacities and performance of the five Municipal Councils in Dar es Salaam to identify, reduce, manage, and finance disaster risk for the years 2018, 2019, and 2020. EMI has developed a methodology that leverages a limited number of aggregate disaster risk management indicators based on accepted principles of disaster risk management that can be easily interpreted by policymakers. The rating of these indicators is based on a self-assessment which can be used to identify gaps and strengths in different areas of DRM and used by the Municipal Councils to understand their status and progress against locally agreed objectives.

This Reference Handbook is developed to guide the self-assessment process and provide context and explanations around each of the indicators. Furthermore, guidance on key activities and evidence is provided for each indicator to support the target levels rated by the Municipal Councils. The Reference Handbook complements a web-based software developed in the project for carrying out periodic assessments, and Municipal Councils are trained during the project period to independently carry out annual assessments through 2030. This will have the added benefit that the Municipal Councils can periodically measure their progress and distance to the global targets of the Sendai Framework for Disaster Risk Reduction (2015-2030), the Sustainable Development Goals (SDGs) and the New Urban Agenda, which the methodology is aligned with.

What is the Disaster Risk Management Index?

Risk is the result of the interactions, of physical events such as a flood or earthquake with exposed assets of the social, economic, built Infrastructure, and environmental systems. If the environment, built infrastructure or communities exposed to the physical events are vulnerable (or have the propensity to suffer damage and loss when impacted), the physical events can be turned into hazards with real potential for contributing to future loss and damage. It is this inherent potential in risk that the opportunity for risk prevention, mitigation and transfer exists, employing diverse disaster risk mitigation or adaptation strategies and instruments. Thus, DRM should be defined as the application of disaster risk reduction policies and strategies to identify, reduce, and manage risk, contributing to the strengthening of resilience and reduction of disaster losses. Disaster risk management is a process that prevents a physical event from turning into a disaster.

The Disaster Risk Management Index (DRMI) has been designed to assess disaster risk management performance based on a comprehensive assessment of institutional capacities and performance to identify, reduce, manage, and finance disaster risk.



Various indicator frameworks have been developed to benchmark urban resilience, e.g. the Baseline Resilience Indicators for Communities (Cutter et al. 2010), IBM-AECOM Resilience Scorecard (UNISDR 2017a, UNISDR 2017b), Torrens Scorecard (Arbon et al. 2012, TRI 2012, TRI 2015), or the City Resilience Framework (da Silva et al., 2014). These tools often rely on pre-arranged indicator sets and pre-defined beneficiaries neglecting the need to dynamically adjust indicators to the context of specific places or to sub-city levels of geography. Most feature a prescribed approach that gives a broad picture of performance along a set of questions or resilience dimensions anchored into a global resilience framework, but often not accounting for the diversity and unique requirements of different organizations and stakeholders in the design of the indicators.

In the design and implementation of the disaster risk management indicator framework for Dar es Salaam, EMI's methodology is informed by its experience over the last 15 years in developing disaster risk and resilience indicator systems in major cities around the world including Istanbul, Amman, Kathmandu, Mumbai, Metro Manila, and Dhaka. The DRMI has been adapted from the Resilience Performance Scorecard (RPS) methodology which is peer-reviewed literature (e.g. Khazai et al., 2018) specifically designed for public officials and authorities to plan and implement a participatory process for assessing the risk and resilience of cities using an integrated approach. It demonstrates how indicators can be used not only for benchmarking resilience but also as a tool to communicate risk and engage stakeholders in understanding risk

parameters and taking ownership of addressing those risks. The DRMI provides a quantitative assessment, based on agreed upon and pre-defined qualitative targets or benchmarks with the Municipal Councils in Dar es Salaam, that disaster risk management efforts should aim to achieve in the city.

“The DRMI provides a quantitative assessment, based on agreed upon and pre-defined qualitative targets or benchmarks with the Municipal Councils in Dar es Salaam, that disaster risk management efforts should aim to achieve in the city.”

Recognizing the importance of promoting and implementing global, regional and national policies and priorities in DRM at the local level, the DRMI indicator framework and products are fully anchored into post-2015 global frameworks, particularly contributing to the implementation of the following frameworks (Figure 1):

- [Sendai Framework for Disaster Risk Reduction 2015-2030 \(SFDRR\)](#): Sendai Targets A-E, especially to the Target D on infrastructure, Target E on local DRRM strategies and Target G on early warning and multi-hazard risk assessments;
- [Sendai Framework for Disaster Risk Reduction 2015-2030 in Africa](#) in line with the Africa Regional Strategy for Disaster Risk Reduction
- [New Urban Agenda \(NUA\)](#); and
- [Sustainable Development Goals \(SDGs\)](#) especially Goals 9-11.

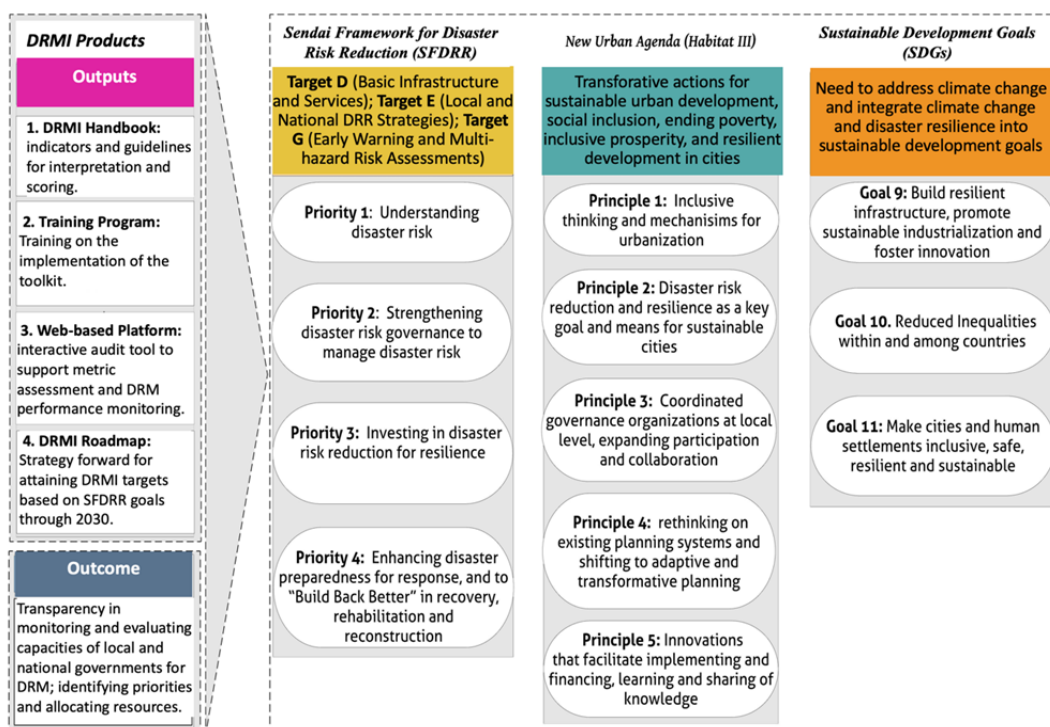


Figure 1: DRMI indicator framework and products anchored into global frameworks such as the SFDRR, NUA and SDGs.

The outcome of the DRMI is to go beyond the voluntary, non-binding agreement of SFDRR and present a transparent monitoring and evaluation process for long-term implementation of disaster risk management and resilience solutions through close alignment with existing legal and institutional frameworks, urban and infrastructure plans, and governance processes (i.e. 2015 Tanzania Disaster Management Act). This can only be achieved through a participatory process that includes the participation of Municipal Councils of Dar es Salaam who have explicitly emphasized such alignments through direct implementation of the project recommendations as a desired outcome of DRMI.

“As a monitoring and evaluation tool, the aim of the DRMI is to create transparency in the Disaster Risk Management capacities of local governments and helps to identify needs, priorities and areas for allocating resources.”

DRMI Indicator System

The DRMI was co-designed with representatives from the Municipal Councils of Dar es Salaam, key members of DarMAERT and the Disaster Management Department of the Prime Minister's Office. The DRMI has been developed for use by officials in the Municipal Councils of Dar es Salaam dealing with various areas of urban disaster resilience, including: disaster risk management, land-use and development planning; policy development; infrastructure resilience; emergency management; recovery planning; and capacity building for DRM. It was developed through a participatory process of contextualization, validation, and customization of the indicators with the Municipal Councils.

The following five components shown in Figure 2 have been designed as overarching areas of emphasis to mainstream disaster risk reduction into local government planning and decision-making processes. These components are: Risk Information, Risk Governance, Emergency Management, Infrastructure and Services and Training and Capacity Building. Table 1 shows the organization of the DRMI in terms of the five components, sub-components, indicators and assessment criteria. Each component is divided into three sub-components and each sub-component corresponds to one or more indicators. The indicators are themselves evaluated in terms of one or more assessment criteria which are formulated as questions with five different assessment levels. In total the DRMI has 5 components, 15 sub-components, 28 indicators and 100 assessment criteria in the implementation for the Dar es Salaam region.



Figure 2: Five Components of the DRMI

Table 1. DRMI components, sub-components, indicators and number of assessment criteria corresponding to each DRMI indicator

Components	Sub-components	Indicator	Assessment Criteria
Risk Information	Risk Awareness	1.1 Risk Awareness	1.1.1 – 1.1.3
	Actionable Data	1.2 Data Collection	1.2.1 – 1.2.3
		1.3 Risk Information and Studies	1.3.1 – 1.3.5
	Knowledge Management	1.4 Knowledge Management	1.4.1 – 1.4.3
Risk Governance	Legal and Institutional Arrangements	2.1 Roles and Responsibilities	2.1.1 – 2.1.3
		2.2 Laws and Regulations	2.2.1 – 2.2.4
		2.3 Cooperation at the Local Level	2.3.1 – 2.3.4
	Planning and Regulations	2.4 Risk Sensitive Land-use Planning	2.4.1 – 2.4.2
		2.5 Unplanned Settlements	2.5.1 – 2.5.4
		2.6 Building Regulation	2.6.1 – 2.6.5
	Financial Protection	2.7 Investments and Resources	2.7.1 – 2.7.5
		2.8 Financial Protection	2.8.1 – 2.8.3
Emergency Management	Preparedness	3.1 Emergency Response Plan	3.1.1 – 3.1.4
		3.2 Plan Testing and Review	3.2.1 – 3.2.2
		3.3 Administration and Logistics	3.3.1 – 3.3.3
	Response	3.4 Emergency Response Functions	3.4.1
		3.5 Communication	3.5.1
		3.6 Shelter and Mass Care	3.6.1 – 3.6.3
		3.7 Evacuation	3.7.1 – 3.7.3
	Recovery	3.8 Health and Medical Services	3.8.1 – 3.8.3
		3.9 Utilities	3.9.1

Components	Sub-components	Indicator	Assessment Criteria
Infrastructure and Services	Critical Infrastructure Planning	4.1 Critical Infrastructure Assessment	4.1.1 – 4.1.3
		4.2 Critical Infra. Plan	4.2.1 – 4.4.4
	Critical Infrastructure Improvement	4.3 Critical Infra. Strengthening	4.3.1 – 4.3.4
		4.4 Public Private Partnerships	4.4.1
	Social Assistance	4.5 Social Protection Programs	4.5.1 – 4.5.3
Training and Capacity Building	Training and Drills	5.1 Availability of Training	5.1.1 – 5.1.5
		5.2 Drills and Response Simulations	5.2.1 – 5.2.3
		5.3 Knowledge Sharing	5.3.1 – 5.3.3
	Public Advocacy and Capacity	5.4 Advocacy	5.4.1 – 5.4.2
		5.6 Public Capacity	5.5.1 – 5.5.2
	Communication	5.7 Information and Communication	5.6.1 – 5.6.5

DRMI Rating System

The design of the DRMI involves establishing a scale of achievement or performance levels or determining the distance between current conditions and an agreed-upon targets. It was developed through a participatory process with Dar es Salaam local government stakeholders and anchored in global, regional and national DRM targets and policies.

Each of the five components of the DRMI is broken down into a set of qualitative questions and scored based on five different levels of attainment shown below:

Table 2. Achievement levels corresponding to five states of performance of the DRMI

Level 1	“Little or no awareness or action”
	little or no awareness and understanding of Disaster Risk Management. There is no institutional policy or process for incorporating risk reduction within the functions and operations of the organization. Further, in some cases there is an adverse attitude and adverse institutional culture towards adopting measures to reduce risk. As a result, significant resistance is expected from any risk reduction initiative resulting in greater vulnerability and higher losses in the future.

Level 2**“Immediate action”**

An early stage of awareness. The organization has a growing level of awareness, and there is support for Disaster Risk Management among the policy makers. The institution may have activities and dedicated efforts for preparedness, but these are simply limited to response. However, support is limited and does not necessarily carry through all levels of the organization; resistance to change is expected at various levels where business as usual is judged sufficient. In general, the institution has no established policy, guidelines or system for mainstreaming Disaster Risk Management, and action will be needed at the highest level to establish such policies and systems. This level is expected not to result in risk reduction in the long term. Vulnerability is expected to increase.

Level 3**“Engagement, commitment and direct interventions”**

A high level of engagement and commitment to Disaster Risk Management by the institution. However, the policies and systems have not been fully established yet. The institution may not have a deep understanding of the mainstreaming process of Disaster Risk Management and still has limited capacity, but overall it is willing to make the investments and has already taken some action; commitment for change, and in particular to shift from response only to building disaster resilience. There may be “pockets of resistance” but these are expected to be overcome with time.

Level 4**“Solution development and impactful interventions”**

An intermediate stage in mainstreaming, where there is already an established policy for mainstreaming Disaster Risk Management (DRM), an overall institutional process/system, and identifiable actions that render the system sustainable and irreversible. In general DRM is seen as an asset by policy makers who are willing to invest in it. The organization is engaged into planning and control processes to address the requirements of integrating risk reduction into its planning and development processes, and in building resilience in the core services. Processes of coordination and regular drills and exercises have been put in place.

Level 5**“Full integration, shifting mindset and transformation”**

A situation where risk reduction is fully absorbed into planning and development processes as well as core services. The organization places high importance on reducing disaster risks in a sustainable program of action at multiple levels and within multiple sectors, and there is a comprehensive demonstration of practice. Level 5 describes a situation where Disaster Risk Management (DRM) is ‘institutionalized’. However, this is not to suggest that an optimum level of attainment has occurred: there is still a need for further progress. The process of mainstreaming DRM should be viewed as open-ended: while organizations should aim to achieve Level 5, they should also aim to make continuous improvements to their approach.

To differentiate between the five achievement levels, logical boundaries based on distinctive criterion are developed in the answer scheme for each of the assessment criteria of the DRMI. As a guiding principle, a generic three-level scale of distinctive criterion is used to formulate the attainment degree: namely existence, intensity, and quality can be used (see Figure 3). Other criteria such as the level of implementation, regularity of processes, or quantities can also be utilized.

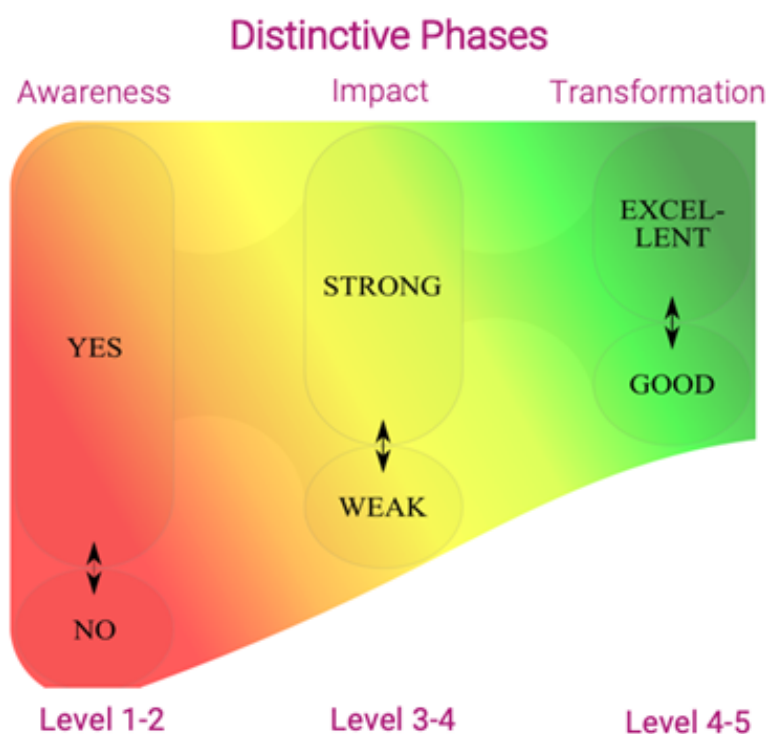


Figure 3 Logical distinctions built into the DRMI answer scheme to clearly differentiate between levels of achievement

Participatory Process of Designing, Validation, and Implementation of the DRMI

A participatory process was used to design the DRMI and capture local processes for decision-making and the production of relevant indicators and achievable targets that are representative of the local knowledge, conditions, and context. By co-identifying the needs and knowledge gaps with the stakeholders, and co-designing tools with them to benchmark and monitor progress on institutional capacities and performance to identify, reduce, manage and finance disaster risk in Dar es Salaam Region, the DRMI outputs become implementable solutions, directly useful for the local government and municipal stakeholders in Dar es Salaam. These types of indicators cannot be computed from publicly available databases and require the design of targeted surveys with a target audience in mind.

The following multi-step process is followed in the co-design, validation and implementation of the DRMI with stakeholders through a participatory process:

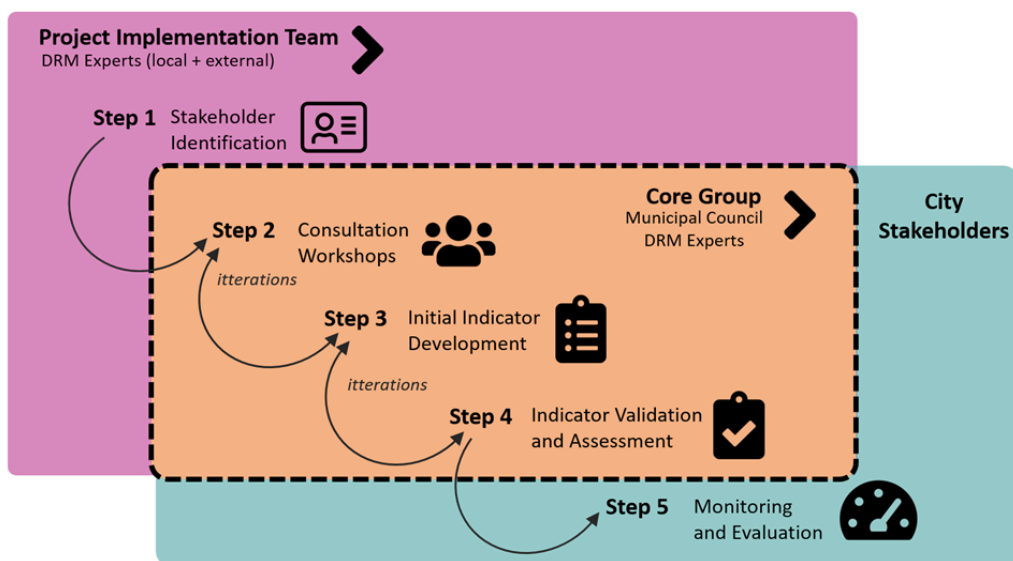


Figure 4 Participatory process for co-developing indicator systems with local stakeholders

Step 1: Stakeholder Identification

A “Core Group” (CG) of key city stakeholders from each of the Municipal Councils are selected and identified to test, evaluate, and validate the design and development of the indicators to represent the conditions of Dar es Salaam along each of the five components of the DRMI. The CG in each Municipal Council is composed of the DRM focal point of each Municipal Council, as well as small group of Municipal staff and experts representing different areas of the DRMI. The DRMI Core Group also includes key members of Dar es Salaam Multi-Agency Emergency Response Team (DarMAERT) as well as the Disaster Management Department (DMD) of the Prime Minister’s Office to guide the development of the indicators. The formation of a formally designated Core Group for the DRMI project as focal targets for the DRMI assessments ensures more depth and focus in the entire assessment process, and will ultimately provide a better chance for building ownership of the tool within the municipalities.

Step 2: Consultation Workshop

The Project Implementation Team contextualizes the DRMI to local needs through engagement with key stakeholders through a process of collectively defining the goals (i.e. target performance outcomes) along each of the components and sub-components of the DRMI, specifying the respective monitoring and evaluation indicators according to these goals.

Step 3: Initial Indicator Development

An initial set of indicators for the DRMI is developed by the Project Implementation Team through close alignment with existing legal and institutional frameworks, urban and infrastructure plans, and governance processes in Tanzania (i.e. 2015 Tanzania Disaster Management Act), as well as international frameworks and policy documents (i.e Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals and New Urban Agenda).

Step 4: Validation of the DRMI in Evaluation Workshops

The initial DRMI indicators are evaluated and re-validated by the Core Group in a series of validation workshops conducted between February and May 2019 where at least three representatives of each of the five Municipal Councils and key members of the Dar MAERT expert group participated. Utilizing the results of the workshops and interactions with the Municipal representatives, the key indicators and target achievement levels of the initial DRMI indicators are improved upon to further refine and contextualize them. In the Dar es Salaam implementation of the DRMI, an initial set of over 150 assessment criteria were reduced to 96 assessment criteria in the final validation round. This iterative process of contextualization and validation of the DRMI indicators, serves multiple purposes: first is to identify the current level of understanding of resilience; second is to know existing challenges in the politicized environment of local governments; and third is to familiarize potential facilitators with the background understanding and concept to ensure proper translation and management of group processes. The final result of this is a customized DRMI toolkit with a representative set of questions and corresponding target performance levels for each indicator along the five DRMI components.

Step 5: Monitoring and Evaluation

Once the DRMI is validated and finalized by the Core Group, it is ready for assessments to be completed on an annual basis by the Municipal Councils. In consultation with a wider group of city stakeholders, the Core Group in each Municipal Council completes an annual assessment of the DRMI and monitors their progress (or lack of progress) on urban disaster risk management. In the context of Dar es Salaam, there will be 3 applications – a benchmarking assessment based on the 2018 floods as a reference event which will establish the baseline assessment for the Municipal Councils. Following the retroactive 2018 assessment, two additional assessments will be carried out at the end of 2019 and at the end of 2020 within the project with the support of the Project Implementation Team. Subsequent assessments are expected to be carried out afterwards through the use of the DRMI software. The aim for the Municipal Councils is to gradually close the gaps and get closer to the optimal achievement level, which represent the Sendai Framework of Disaster Risk Reduction goals by 2030.

How to use the DRMI Software

Registration and creating an account

Step 1 – Invitation to create account

You will receive an email containing the [INVITATION CODE](#) and the [LINK TO THE REGISTRATION PAGE](#). Please take note of the invitation code as you will use it to register your account in Step 2.

Invitation to create account



DRMI <drmi.app.test@gmail.com>

11:13 PM

To: trevor@risklayer.com

You have been invited to register with the DRMI audit system as an auditor

Your invitation code is: 7560e58737

Click on the following link to go directly to the registration page:

<https://www.drmi.ac.tz>

Step 2 – Fill out the Registration Form

Provide all the required information accordingly, including your [USERNAME](#) and [PASSWORD](#) to enable login for accessing your DRMI questionnaire. Click on the [REGISTER ACCOUNT](#) button on the bottom right to complete the registration process.

Place your [INVITATION CODE](#) from your invitation email in the space provided.

Register your account

Your Full Name

Invitation code (the code sent to you in your invitation)

7560e58737

Email (the address to which your invitation was sent)

Username (min. 4 characters, only alphanumeric, dashes or underscores)

Password (min. 8 alphanumeric characters, at least 1 lowercase, 1 uppercase, 1 digit)

Confirm password

Security question

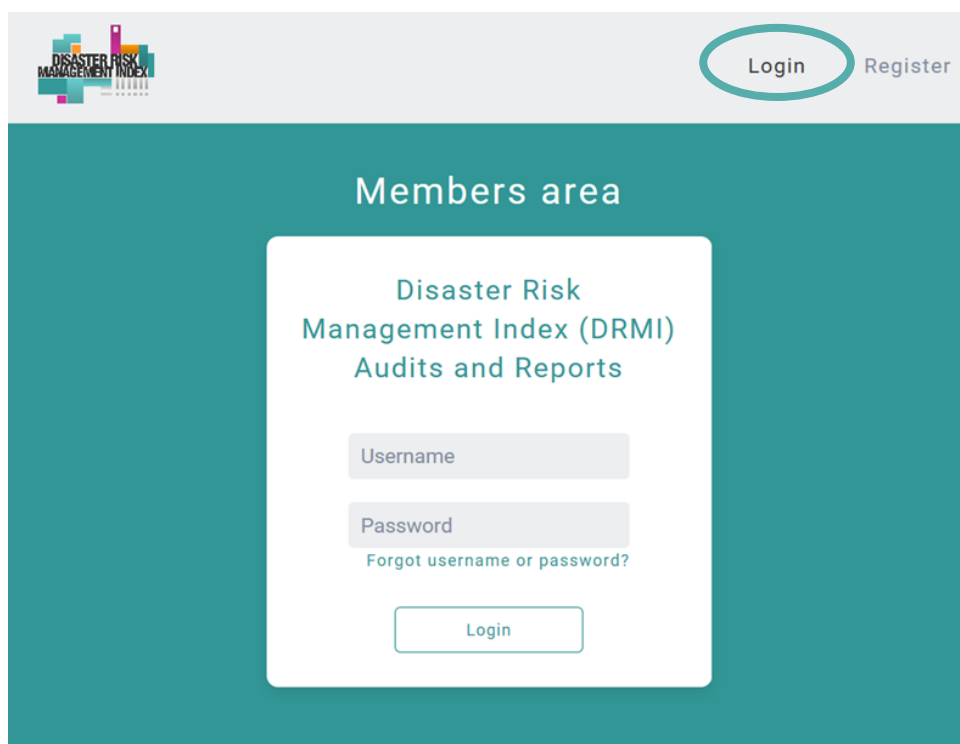
Security answer

Register account

Step 3 – Login to the DRMI Audits and Reports Home Page

After completing the registration, you are now ready to login. Type in the **USERNAME** and **PASSWORD** you used for registration.

You may access the DRMI Audits and Reports Login page by clicking on the **LOGIN** tab at the upper right. The following address will take you to the DRMI website: www.drmi.ac.tz



Disaster Risk Management Index (DRMI)

Members area

Disaster Risk Management Index (DRMI) Audits and Reports

Username

Password

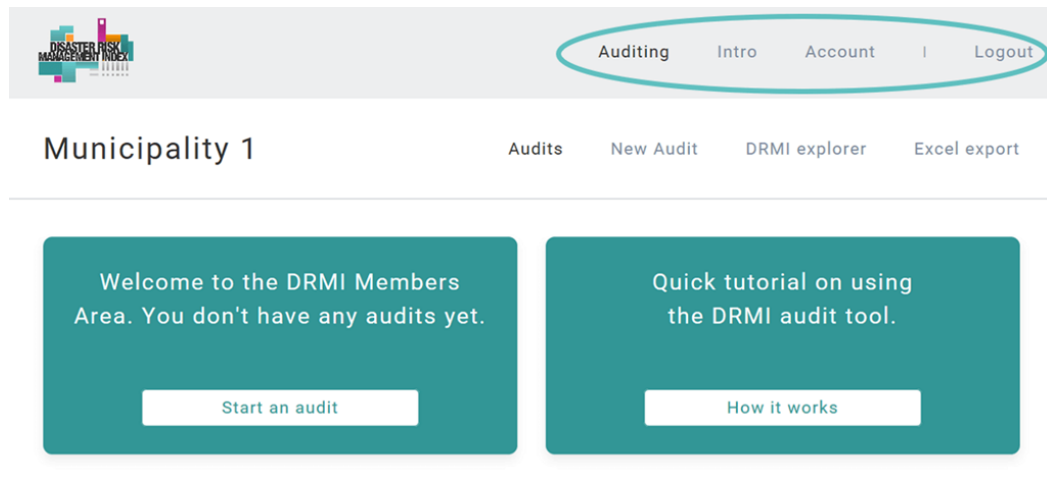
[Forgot username or password?](#)

Login

How to do an Audit

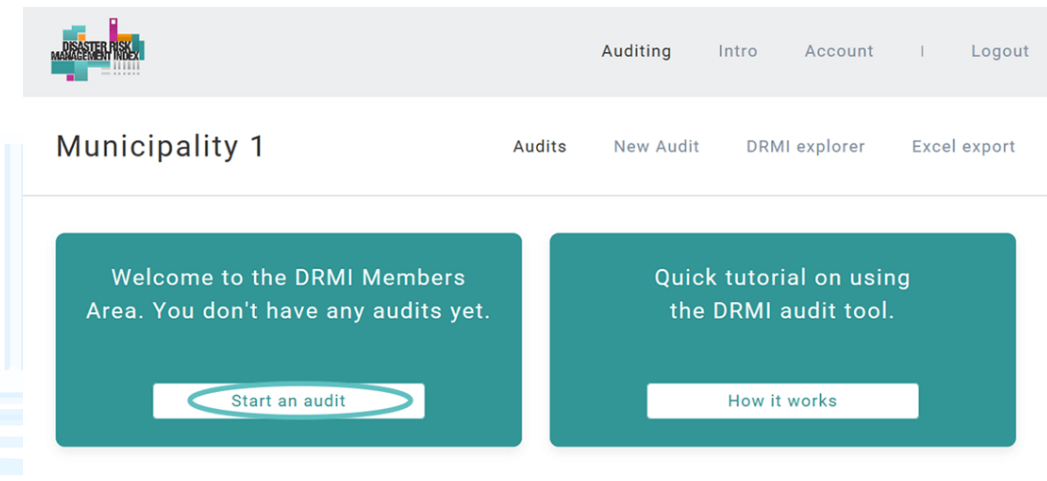
Overview of the DRMI Toolkit Home Page

There are four main tabs in menu bar at the top of the DRMI Toolkit Homepage. [AUDITING](#) is your main page where you can access your audit data, create and complete new audits, view past audits, compare results and export your data. Click on [TUTORIAL](#) to view this “How-to” guide, [ACCOUNT](#) to change your personal information, and [LOGOUT](#) to securely signout at any point.



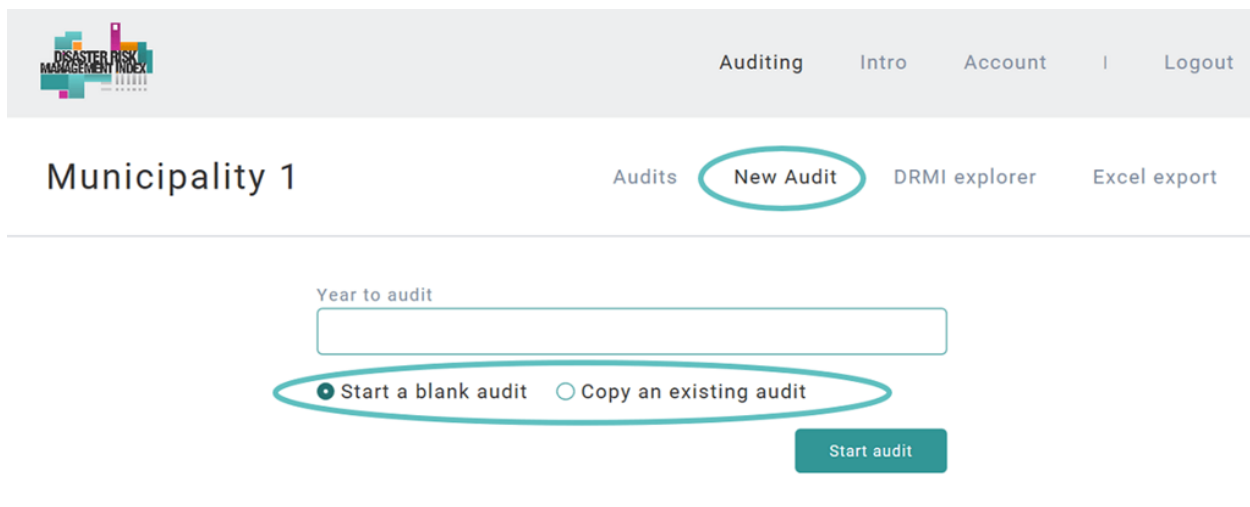
Step 1 – Start a New Audit

Click on [START AN AUDIT](#) to begin answering the DRMI Audit Tool. Upon clicking you will be brought under the [NEW AUDIT](#) tab.



Step 2 – Select the Year to Audit and Start an Audit

Under the [NEW AUDIT](#) tab, you can either [START A BLANK AUDIT](#), or [COPY AN EXISTING AUDIT](#). Copying an existing audit can save you time if you think that many of the questions will have the same answers as the audit being copied. It may also help inform the current assessment, for example, by copying over the previous year's audit answers to use as a baseline and to build upon the previous audit's comments/explanations under each question.



DISASTER RISK MANAGEMENT INDEX

Auditing Intro Account I Logout

Municipality 1 Audits **New Audit** DRMI explorer Excel export

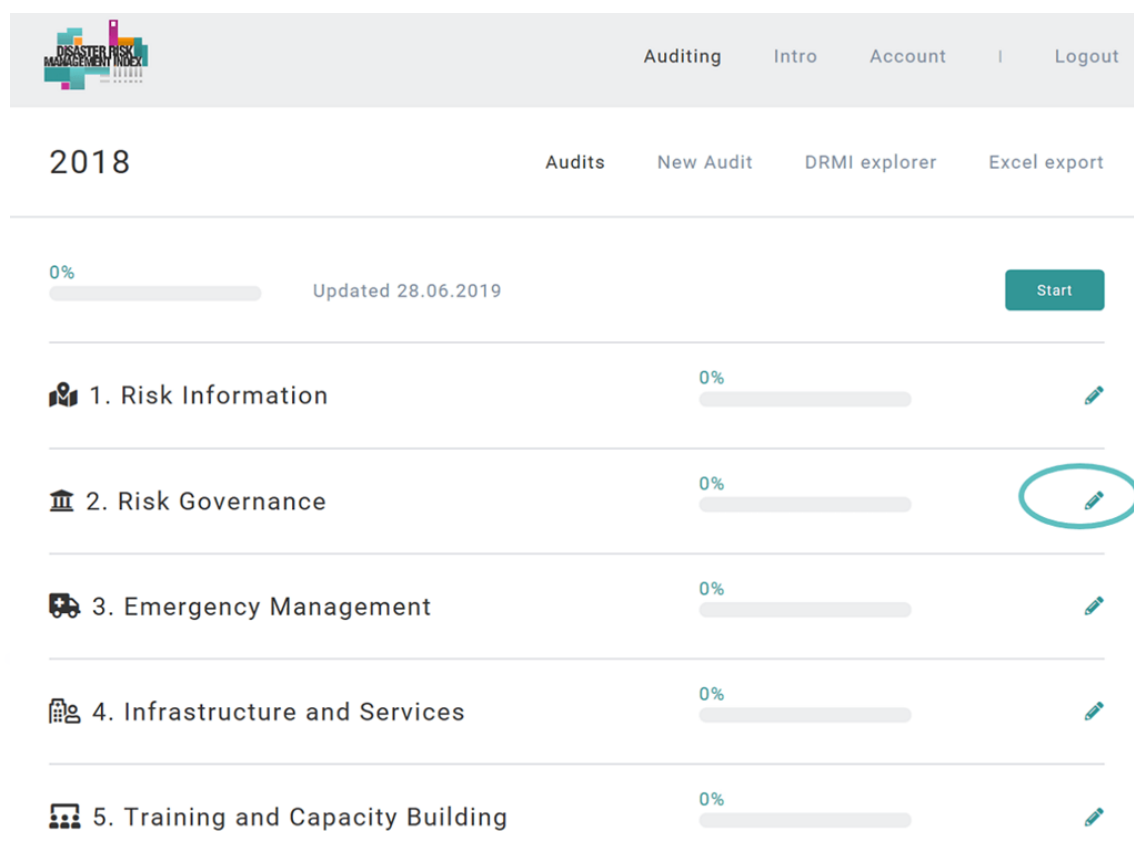
Year to audit

☒ Start a blank audit ☐ Copy an existing audit

Start audit

Step 3 – Complete DRMI Audit Sections

Click the **PENCIL ICON** to answer any one of the five audit sections. You will be brought directly to the questions contained in each section.



DISASTER RISK MANAGEMENT INDEX

Auditing Intro Account I Logout

2018 Audits New Audit DRMI explorer Excel export

0% Updated 28.06.2019 Start

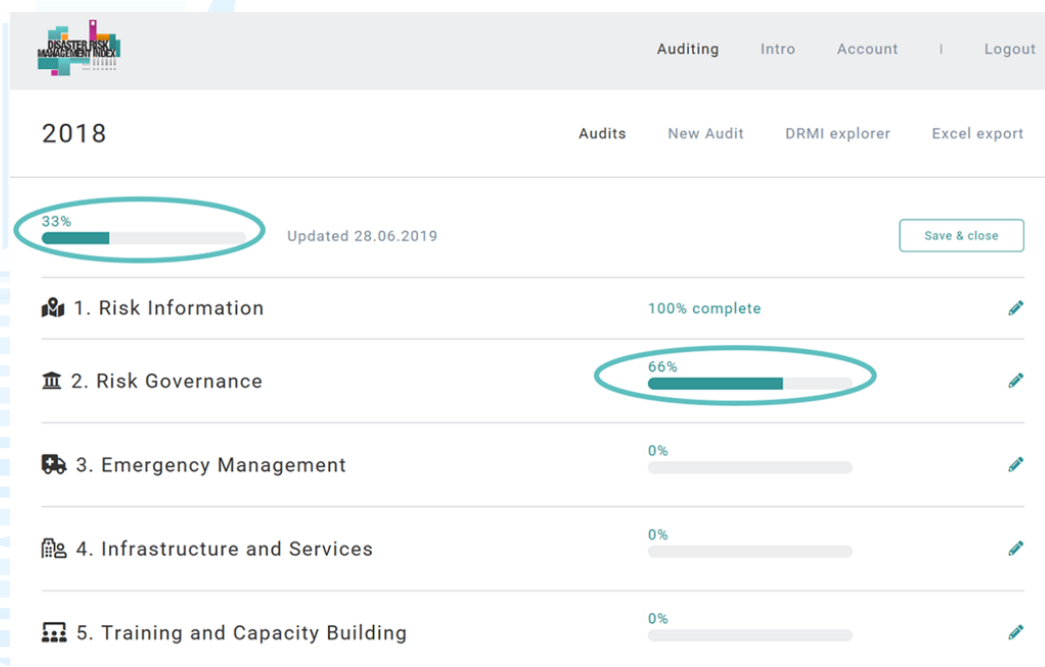
1. Risk Information	0%	
2. Risk Governance	0%	
3. Emergency Management	0%	
4. Infrastructure and Services	0%	
5. Training and Capacity Building	0%	

Step 4 – Answer each DRMI Toolkit Audit Question

Use the filters at the top of the auditing screen to display only **UNANSWERED**, **ANSWERED**, or **FLAGGED** questions. Click the **FLAG ICON** to mark questions that you wish to come back to or prioritize. Select the most appropriate answer for your municipality from the 5 levels provided. If needed, click again to de-select an answer. Use the **COMMENT BOX** to explain why you have selected the given level and to provide additional information.

Track Audit Progress for All Sections

Your audit progress is tracked as you complete each question and section.



Viewing the Report

View the Complete Report

Once the audit is 100% complete, you can [VIEW THE REPORT](#)

Year	Audits	New Audit	DRMI explorer	Excel export
2018				

100% Updated 28.06.2019 [View report](#) [Save & close](#)

Icon	Component	Status	Action
	1. Risk Information	100% complete	
	2. Risk Governance	100% complete	
	3. Emergency Management	100% complete	
	4. Infrastructure and Services	100% complete	
	5. Training and Capacity Building	100% complete	

Compare Progress from Previous Years

Within the audit report, scores from previous years are displayed to measure progress. A summary of your results gives you an indication of what your scores really mean.



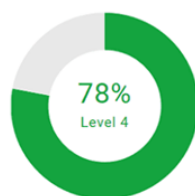
Disaster Risk Management Index

Institution Name: Municipality 1
Group Name: Dar es Salaam Municipal Councils
Year: 2019
Completion Date: 27 Jun 2019

Overall DRMI Score

The overall score combines the 5 components of the Disaster Risk Management Index (DRMI) to provide a rating of institutional capacities.

2019 Score



DRMI

Risk Information
Risk Governance
Emergency Management
Infrastructure and Services
Training and Capacity Building

2019

78%
72%
79%
69%
93%
80%

2018

53%
41%
53%
27%
86%
67%

Congratulations on your performance! Your overall DRMI score for 2019 is **78%** which corresponds to **Level 4** or **"Solution Development"** rating. Level 4 performance refers to an intermediate stage in mainstreaming, where there is already an established policy for mainstreaming Disaster Risk Management (DRM), an overall institutional process/system, and identifiable actions that render the system sustainable and irreversible. In general DRM is seen as an asset by policy makers who are willing to invest in it. The organization is engaged into planning and control processes to address the requirements of integrating risk reduction into its planning and development processes, and in building resiliency in the core services. Processes of coordination and regular drills and exercises have been put in place.

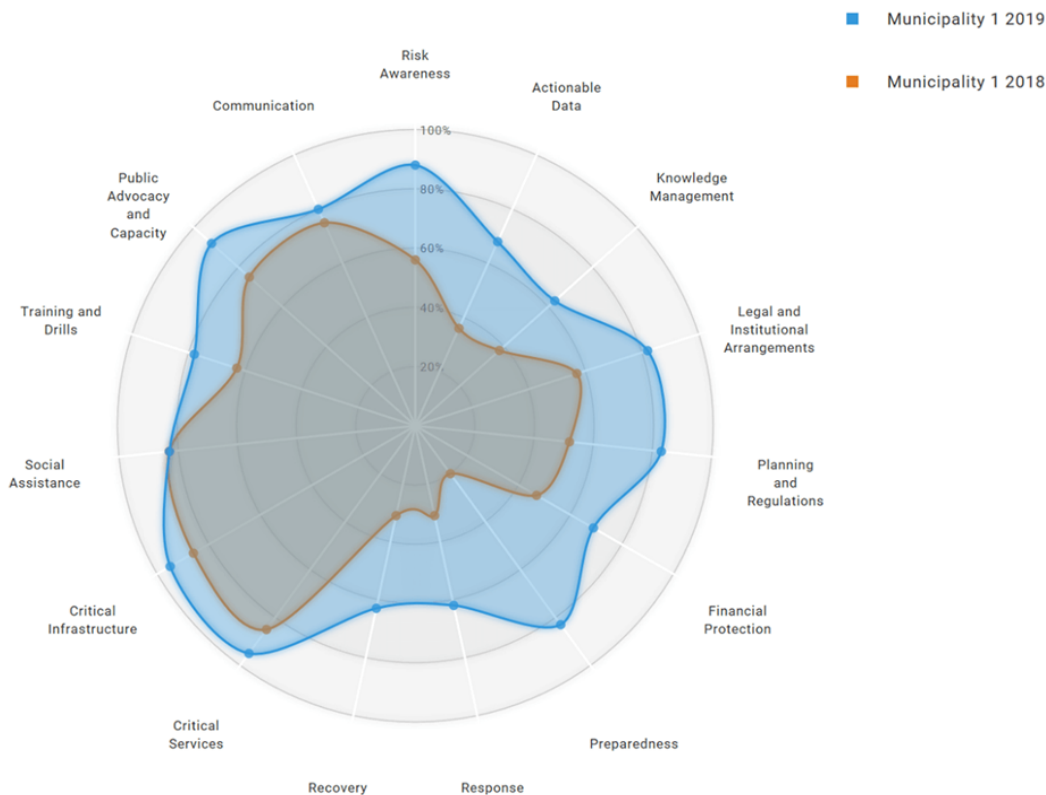
Compared to the previous year your overall DRMI score has improved by 25 percentage points.

View Breakdown of DRMI Audit Scores per Subcomponent

Your results over multiple years are visualized to highlight areas where progress has been made as well as those areas that can be improved

DRMI subcomponents

Below is a breakdown of your score for each of the subcomponents of the DRMI.



View Answers from Previous Years in Succeeding DRMI Audits

Answers from previous years are provided for every question to measure progress.

2. Risk Governance

Legal and Institutional Arrangements

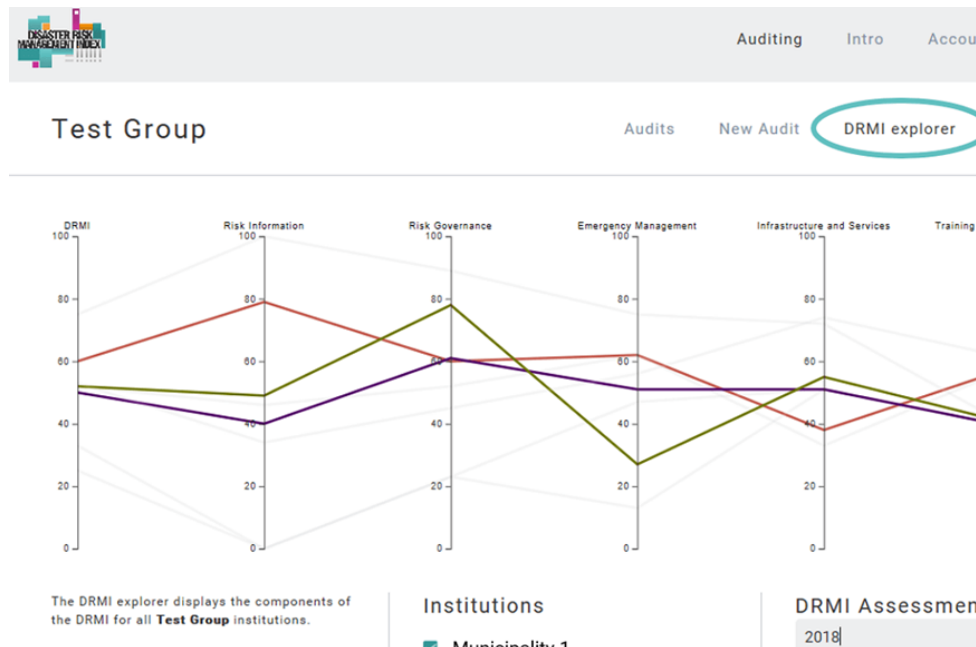
Roles and Responsibilities

2.1	ARE ROLES AND RESPONSIBILITIES FOR IMPLEMENTING DISASTER RISK MANAGEMENT ACTIVITIES WELL DEFINED IN THE EXISTING LAWS, RULES AND REGULATIONS AT THE MUNICIPAL LEVEL?	2019	2018
Level 1	No roles assigned	☐	☐
Level 2	Roles are informally assigned	☐	☐
Level 3	Roles are formally assigned, but limited details of responsibilities	☐	☐
Level 4	Some roles are formally assigned and have detailed list of responsibilities	☒	☐
Level 5	Roles in all areas of disaster mitigation, preparedness, response and recovery are formally assigned and have detailed list of responsibilities	☐	☐

Explanation / comments:

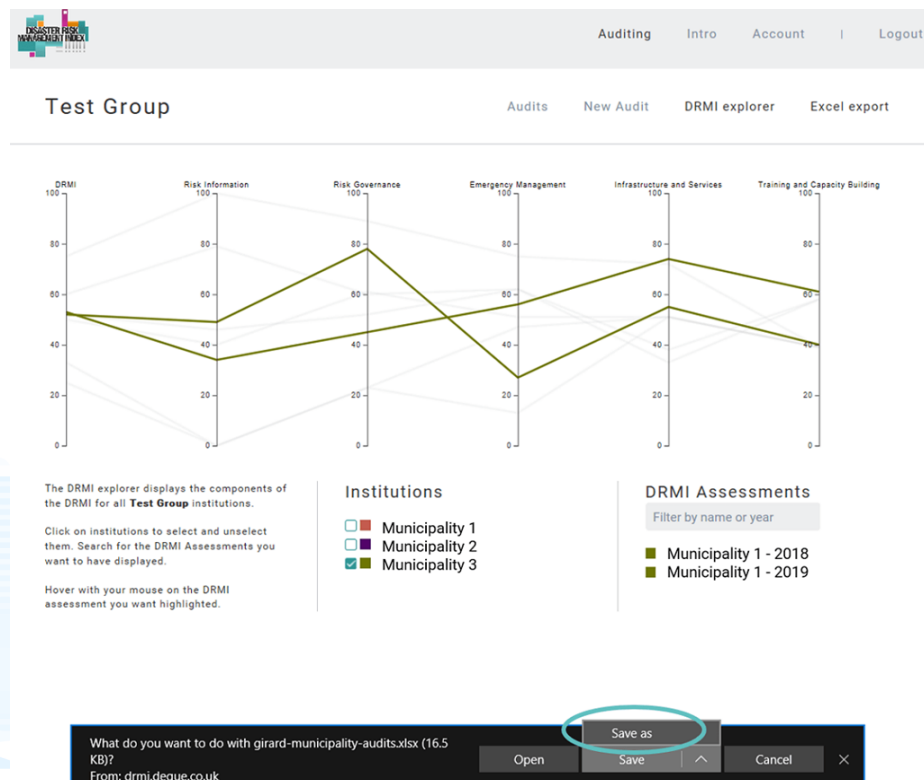
Graphically Compare Results among Different Years and Municipalities

Use the **DRMI EXPLORER** tool to compare results of different years as well as between municipalities. Once a municipality finishes their audit, their results will be displayed. Use the filter tools to select which municipalities to show as well as what years.



Export Data to Save in Excel Format

Click the **EXCEL EXPORT** tab to export your data and save to your computer in an excel format. When saving, select **SAVE AS** to save your excel file to your preferred file folder.



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A man in a blue polo shirt with white stripes on the sleeves is looking down at a map on a table. A large white number '1' is overlaid on the image. The background is a solid magenta color.

COMPONENT

**RISK
INFORMATION**

Disaster risk management need to be based on an understanding of risk information in all its dimensions of hazard characteristics, local exposures, capacity and vulnerability.

Risk information is therefore essential for informed decision making, prioritizing projects and planning for disaster risk reduction measures (prevention, mitigation, preparedness and response).

Unless local governments have a clear understanding of the risks they face as well as fully discuss with the public and other stakeholders about risk scenarios, implementation of meaningful disaster risk reduction measures may be ineffective.

Key activities for the dissemination of disaster risk information at the local level under Priority 1 of the Africa Regional Strategy for Disaster Risk Reduction include:

- developing and publicizing awareness products (1.1 Risk Awareness);
 - systematically collecting and documenting risk information at the local level (1.2 Data Collection);
 - developing and implementing a program to undertake local risk assessment, emphasizing localized recurrent risks and threats (1.3 Risk Information); and
 - sharing risk mapping products with local stakeholders to increase awareness (1.4 Knowledge Management)
-

1.1 Risk Awareness

The key to reducing risks of loss of life, injuries and damage from natural disasters is widespread awareness among the general public. Municipal officials must be aware, in advance, of what natural hazards they are likely to face in their own communities and what prevention and mitigation strategies and procedures to follow to avoid or reduce risks.

Special attention should be given to raising the level of awareness and knowledge of municipal officials who have central responsibilities for dealing with natural disasters. There is a need to develop procedures, protocols, and priorities for disseminating information to all relevant stakeholders in the municipal council as well as the general public.

Assessment Criteria

1.1.1 Level of awareness of municipal officials of potential impacts of natural hazards (floods, drought, earthquakes) to their municipality.

●	Level 1	Little or no awareness among officials
●	Level 2	Officials have only a general awareness of potential natural hazard impacts
●	Level 3	Officials are aware of specific potential natural hazard impacts in their municipality but may not be aware of strategies to avoid or reduce risks
●	Level 4	Officials are aware of specific potential natural hazard impacts in their municipality and strategies to avoid or reduce risks, but not for all relevant hazards
●	Level 5	Officials are aware of specific potential natural hazard impacts in their municipality and strategies to avoid or reduce risks, for all relevant hazards

1.1.2 Level of awareness of municipal officials of potential impacts of climate change to their municipality;

●	Level 1	Little or no awareness among officials
●	Level 2	Officials have only a general awareness of potential climate change impacts
●	Level 3	Officials are aware of specific potential climate change impacts in their municipality but may not be aware of strategies to avoid or reduce impacts
●	Level 4	Officials are aware of only some potential climate change impacts in their municipality and/or only some strategies to avoid or reduce impacts
●	Level 5	Officials are aware of all potential climate change impacts in their municipality and all relevant strategies to avoid or reduce impacts, for all relevant climate change impacts

- 1.1.3** Effectiveness of existing mechanisms and advocacy programs and products (e.g. workshops, meetings, risk reports/newsletters dissemination, awareness raising activities) to ensure that relevant stakeholders are informed of disaster risks, as well as prevention and mitigation strategies.

●	Level 1	No mechanisms in place
●	Level 2	Mechanisms will be established within a year
●	Level 3	Mechanisms exist but are ineffective at ensuring stakeholders are informed of disaster risks, prevention and mitigation strategies
●	Level 4	Mechanisms exist and are effective at ensuring relevant stakeholders are informed of disaster risks, prevention and mitigation strategies, but may not include long-term mitigation and adaptation to climate change
●	Level 5	Mechanisms exist and are effective at ensuring relevant stakeholders are informed of disaster risks, prevention and mitigation strategies, including long-term mitigation and adaptation to climate change

Key activities and evidence

1.1 Risk Awareness

- 1.1.1** Develop and publicize awareness products on potential impact of natural hazard impacts in municipal council;
- 1.1.2** Develop and publicize awareness products on potential impacts of climate change in municipal council;
- 1.1.3** Share risk mapping products with municipal stakeholders to increase awareness

1.2 Data Collection

Data collection comprises the collection of relevant location-based disaster risk information (including hazard maps, exposure and vulnerability information, disaster loss and damage data) to produce practical risk information for decision-makers, taking into account the needs of different categories of users, as appropriate.

Assessment Criteria

1.2.1 Status of municipality's efforts to collect data on disaster losses.

Additional Information:

The target is for the municipality to systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts of events within the municipal council;

●	Level 1	Little or no data on disaster events
●	Level 2	Some basic spatial/geographical data on disaster events
●	Level 3	Continual registration of actual events, with limited information on losses and effects
●	Level 4	Complete inventory of actual events, including some information on losses and damage collected
●	Level 5	Complete inventory of actual events, with detailed information on losses and damage systematically shared, including economic, social, health, education, environmental and cultural heritage impacts, as appropriate

1.2.2 Status of municipality's efforts to systematically access and utilize a wide variety of infrastructure maps such as drainage networks, health care services, solid waste dumpsites, sanitation lines and water sources, and level of access to this information to key stakeholders, as appropriate;

●	Level 1	Little or no maps available
●	Level 2	Maps will be available in the next year
●	Level 3	Maps available but contain limited information
●	Level 4	Maps available covering a wide variety of infrastructure
●	Level 5	Maps available covering a wide variety of infrastructure, and those maps have been widely distributed to stakeholders

1.2.3 Availability and utilization of disaster risk data that is disaggregated by income, sex, age, race, ethnicity, migration status, disability, geographic location and other characteristics.

●	Level 1	Not at all
●	Level 2	Disaggregated data will be available within a year
●	Level 3	Some disaggregated data will be available, but data is insufficient for conducting analysis
●	Level 4	Some disaggregated data is available and has proven to be somewhat useful for analysis
●	Level 5	A wide variety of disaggregated data is available and has proven to be very useful for analysis

Key activities and evidence

1.2 Data Collection

- 1.2.1 Develop and implement a program to equip municipal officials with skills and tools for accessing, utilizing, and monitoring post-disaster assessments of damages, losses and impacts, emphasizing localized recurrent risks and threats;
- 1.2.2 Develop and implement a program to equip municipal officials with skills and tools for accessing, managing and sharing data on infrastructure in the municipal council;
- 1.2.3 Develop and implement a program to equip municipal officials with skills and tools for accessing, managing and sharing disaster risk data disaggregated by demographic and socio-economic variables.

1.3 Risk Information and Studies

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Risk information and studies can be used for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

Assessment Criteria

1.3.1 Effectiveness of monitoring and early warning systems for multiple hazards.

-  Level 1 Hazard monitoring systems do not exist at all
-  Level 2 Some hazard instrumentation networks exist, but are ineffective in providing hazard information or are not accessible to municipality
-  Level 3 Basic instrumentation networks are being utilized by municipality
-  Level 4 Good instrumentation exists in some areas, with moderately effective use by municipality for hazard monitoring and early warning for some hazards
-  Level 5 Wide coverage of instrumentation and highly effective use by municipality for multi-hazard monitoring and early warning

1.3.2 Status of risk studies (by ARU, UDSM, UDOM, GST or others) for multiple hazards in your municipality.

- | | | |
|---|---------|--|
|  | Level 1 | No risk studies completed for municipality |
|  | Level 2 | Risk studies to be completed within a year |
|  | Level 3 | Risk studies have been conducted but have only led to general recommendations |
|  | Level 4 | Detailed studies have been conducted and detailed recommendations have been made for a limited number of risks |
|  | Level 5 | Detailed studies have been conducted and detailed recommendations have been made for all relevant risks |

1.3.3 Ability of hazard warnings to reach at-risk populations in time for them to enact an effective response.

- | | | |
|---|---------|---|
|  | Level 1 | Warnings do not reach many populations at risk |
|  | Level 2 | Warnings reach populations at risk but not in due time |
|  | Level 3 | Warnings reach some populations at risk in time |
|  | Level 4 | Warnings reach most populations at risk in time through one communication channel |
|  | Level 5 | Warnings reach most populations at risk in time through multiple communication channels |

1.3.4 The extent to which the outputs of vulnerability and risk studies are being used by municipal officials within their regular functions.

- | | | |
|---|---------|--|
|  | Level 1 | Vulnerability and risk studies are generally not available to officials |
|  | Level 2 | Vulnerability and risk studies are available but are generally not reviewed by officials |
|  | Level 3 | Vulnerability and risk studies are reviewed but have limited impact on decision-making |
|  | Level 4 | Vulnerability and risk studies are sometimes utilized to inform decision-making |
|  | Level 5 | Vulnerability and risk studies are often utilized to inform decision-making |

1.3.5 The extent to which vulnerability and risk studies inform/influence investment in disaster risk reduction measures.

- | | | |
|---|---------|---|
|  | Level 1 | Not at all |
|  | Level 2 | Sometimes, but no formal mechanisms exist to ensure risk studies inform investment |
|  | Level 3 | There are formal mechanisms in place, but they are ineffective at ensuring risk studies inform investment |
|  | Level 4 | There are formal mechanisms in place that are somewhat effective at ensuring risk studies inform investment |
|  | Level 5 | There are formal mechanisms in place that are very effective at ensuring risk studies inform investment |

Key activities and evidence

1.3 Risk Information and Studies

- 1.3.1** Develop and implement a program to equip municipal officials with skills and tools for accessing, utilizing instrumentation for early warning and monitoring hazards, and emphasizing localized recurrent risks and threats;
- 1.3.2** Establish/strengthen technical structures at the municipal level (e.g. committees, task forces) to advise, guide and facilitate the use of risk studies and assessment of different risks;
- 1.3.3** Establish definitions and harmonize concepts, terms, protocols and procedures for providing hazard warnings to at-risk populations in the municipality by leveraging and systematically connecting with national and regional disaster risk management information and communication systems and data/information sharing platforms;
- 1.3.4** Document, systematize and promote use of risk information and studies to inform decision making by municipal authorities, as appropriate;
- 1.3.5** Document, systematize and promote use of risk information and studies to inform investment planning by municipal authorities, as appropriate.

1.4 Knowledge Management

Promotion of knowledge sharing and knowledge development of municipal officials through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms, influencing or participating in disaster risk reduction research, peer learning and use of information sharing platforms.

Assessment Criteria

1.4.1	Capacity of the municipal government to influence or participate in disaster risk management research.	
	Level 1	No capacity to coordinate with existing scientific research institutions to enhance the scientific and technical work on DRM
	Level 2	Some capacity to enhance the scientific and technical work on DRM through existing scientific research institutions, but lacking key resources
	Level 3	Some capacity to enhance the scientific and technical work on DRM through existing scientific research institutions, but only limited activities conducted
	Level 4	Strong capacity to enhance the scientific and technical work on DRM through existing scientific research institutions, and minor studies have been undertaken
	Level 5	Strong capacity to enhance the scientific and technical work on DRM through existing scientific research institutions, and extensive studies have been undertaken

- 1.4.2** Effectiveness of existing mechanisms (e.g. information sharing platforms, reporting/feedback structures, emergency services workshops/forums, case studies/best practices/report dissemination etc.) to ensure that disaster risk management knowledge is retained, strengthened, shared and utilized within the municipal government.

●	Level 1	No mechanisms in place
●	Level 2	Mechanisms will be established within a year
●	Level 3	Mechanisms exist but are ineffective
●	Level 4	Mechanisms exist and are somewhat effective
●	Level 5	Mechanisms exist and are very effective

- 1.4.3** Effectiveness of existing mechanisms to equip local communities with skills and tools for monitoring and analyzing risk, including training in participatory risk assessment

●	Level 1	No mechanisms in place
●	Level 2	Mechanisms will be established within a year
●	Level 3	Mechanisms exist but are ineffective
●	Level 4	Mechanisms exist and are somewhat effective
●	Level 5	Mechanisms exist and are very effective

Key activities and evidence

1.4 Knowledge Management

- 1.4.1** Strengthen technical and scientific capacity of municipal officials and professionals to generate DRM knowledge and promote the use of investments in research and technology to address DRM challenges;
- 1.4.2** Mobilize resources to establish new mechanisms and/or leverage existing mechanisms to ensure DRM knowledge is retained, strengthened, shared and utilized within the municipal government.

Tools and Resources

[Urban Risk Assessments: Towards a Common Approach – World Bank \(2011\)](#)

A framework for carrying out urban risk assessment, seeking to strengthen coherence and consensus on how cities can plan for natural disasters and climate change.

[Techniques Used in Disaster Risk Assessment – UNHABITAT](#)

A portal to exchange DRR assessment tools and case studies. Search under 'Comprehensive Disaster Risk Assessment;' more under 'Techniques Used in Disaster Risk Assessment.'

[Assessing the Vulnerability of Local Communities to Disasters – UNEP \(2008\)](#)

A risk profile tool to help communities make a rough estimate of their exposure to risks.

[Urban Governance and Community Resilience Guide on Risk Assessment in Cities – ADPC \(2010\)](#)

A series of guidebooks designed to raise awareness of the challenges local governments face in reducing disaster risk

[HAZUS: Software for Risk Assessment and Modelling of Disasters – FEMA \(2011\)](#)

GIS-based software to estimate potential losses from earthquakes, floods, and hurricanes.

[Earthquake Risk Assessment Tools – Earthquake Engineering Research Institute \(USA\)](#)

Website with information on ways to reduce losses from earthquakes. Search for the 'Toolkit for Decision Makers' by the California Seismic Safety Commission (1999)

[Urban Risk Assessment: A Facilitator's Guidebook – ADPC, ECHO, Handicap International, Islamic Relief, Plan International \(2010\)](#)

How to scale down the urban risk assessment process from city to community level to get all groups involved in preparing for a disaster.

[Discovery of a "Hot Spot" – World Bank GFDRR](#)

Assessment exercise worksheet, extracted from the GFDRR publication 'Climate Resilient Cities' (see section on General Guidance).

[Weathering the Storm: Participatory Risk Assessment for Informal Settlements – Disaster Mitigation for Sustainable Livelihoods Programme, U. of Cape Town, South Africa \(2008\)](#)

The guide simplifies participatory risk assessment methods for use in integrated disaster risk management planning at settlement level.

An aerial photograph showing a flooded area with buildings and a large number 2 overlaid. The image is partially obscured by a blue circular graphic element.

COMPONENT

2

**RISK
GOVERNANCE**

Disaster risk governance at the municipal level and coordination with the national and regional level is of great importance for an effective and efficient management of disaster risk. Disaster Risk Governance refers to the system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy (UNGA, 2016).

Clear vision, plans, competence, guidance and coordination within and across different departments and agencies of the municipal council, as well as participation of relevant stakeholders, are needed. Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development.

Key activities to catalyze disaster risk governance at the local level listed as Priorities 2 and 3 of the Africa Regional Strategy for Disaster Risk Reduction include, which correspond to the Risk Governance indicators of the DRMI, include:

- Putting in place and operationalizing policies, strategies, plans, institutions and legal frameworks to reduce risk and strengthen resilience at the local level (2.1 Roles and Responsibilities and 2.2 Laws and Regulation)
- Developing the capacity of local authorities to work with community structures, civil society and other local partners to advance local DRM (2.3 Cooperation at Local Level);
- Promotion of risk-sensitive land use planning (2.4 Risk-sensitive Landuse Planning);
- Integration of disaster risk management in unplanned settlements (2.5 Unplanned Settlements)
- Comprehensive building regulatory framework to reduce the vulnerability of the building stock (2.6 Building Regulation);
- Allocating dedicated, adequate and predictable resources and capacity to implement DRM at the local level (2.7 Investment and Resource Allocation); and
- Operationalizing mechanisms for micro-finance, micro-insurance and social safety net programs (2.8 Financial Protection).

2.1 Roles and Responsibilities

One way to measure the effectiveness of a law (and its implementing rules and regulations) is to evaluate to what extent it defines the roles and responsibilities of the agencies and officials involved. The following criteria are used to rate the level of effectiveness of the current legal context (including Disaster Management Act of 2015) to assign, as appropriate, clear roles and tasks to municipal officials within departments undertaking disaster risk management activities

Assessment Criteria

- 2.1.1** Effectiveness of roles and responsibilities for implementing disaster risk management activities in the existing laws, rules and regulations at the municipal level.

Additional Information:

It is necessary for municipal process and decision making mechanisms to have a strong foundation in key legislative mechanisms (i.e. Disaster Management Act of 2015) with clearly assigned responsibilities and authority to support their implementation. These responsibilities should be established through regulations, standards and procedures.

- | | | |
|---|---------|---|
|  | Level 1 | No roles assigned |
|  | Level 2 | Roles are informally assigned |
|  | Level 3 | Roles are formally assigned, but limited details of responsibilities |
|  | Level 4 | Some roles are formally assigned and have detailed list of responsibilities |
|  | Level 5 | Roles in all areas of disaster mitigation, preparedness, response and recovery are formally assigned and have detailed list of responsibilities |

- 2.1.2** Clarity among municipal officials / departments on who is responsible for what, and who should make decisions.

Additional Information:

This involves assigning, as appropriate, clear roles and tasks to municipal officials within the relevant departments and agencies of the municipalities.

- | | | |
|---|---------|--|
|  | Level 1 | In general, officials/departments are unaware of who is responsible or who should make decisions |
|  | Level 2 | Instances of confusion are frequent because roles are not understood or due to coordination/accountability issues, or there is no policy in place |
|  | Level 3 | Policy is in place, there are some instances of confusion: in general, officials/departments are aware of roles, but coordination mechanisms are ineffective and accountability is lacking |
|  | Level 4 | Policy is in place, there is no confusion responsibilities/ decision-making, effective coordination mechanisms exist, but accountability is lacking |
|  | Level 5 | Policy is in place, there is no confusion on responsibilities/ decision-making, and effective coordination and accountability mechanisms exist |

- 2.1.3** Extent to which women occupy local government positions equally as men and are represented in decision-making capacity in the fields of DRM and urban resilience.

	Level 1	Not at all
	Level 2	Plans to strengthen women representation within a year
	Level 3	Women hold limited government positions but are with limited in their capacity to influence DRM decision-making
	Level 4	Women hold some government positions and have some capacity to influence DRM decision-making
	Level 5	Women hold government positions and have high capacity to influence DRM decision-making

Key activities and evidence

2.1 Roles and Responsibilities

- 2.1.1** Allocate and facilitate investment of dedicated, adequate and predictable resources and capacity to designated municipal staff and officials for implementing DRM activities;
- 2.1.2** Develop regulations, protocols and procedures at the municipal level aligned with the Disaster Management Act of 2015 to assign clear responsibilities and authority to municipal officials
- 2.1.3** Increase participation of women in decision-making positions in the fields of DRM and urban resilience.

2.2 Laws and Regulations at the Local Level

While it is recognized that disasters are initially local events, accountability, authority and resources are typically not sufficiently decentralized to enable local governments to assume ownership and take actions to manage disaster risk effectively. Many local governments have not had the necessary legal mandate and authority to play a major part in implementing policies and practices to meet their cities' immediate and long-term disaster risk reduction needs.

Success requires balance, so that cities acquire not only responsibility and accountability for disaster risk reduction but also the authority and resources to effectively carry it out. To empower local authorities, regulatory and financial can be used as means to provide appropriate resources and the authority to effectively prepare for and respond to disasters in coordination with national and regional authorities.

Assessment Criteria

2.2.1 Effectiveness of the legal system to ensure local action by the municipal government on disaster risk management issues.

●	Level 1	Local action is not encouraged
●	Level 2	Local action is encouraged but legal mechanisms to mandate local action are missing
●	Level 3	Local action is encouraged, but few mechanisms to mandate local action
●	Level 4	Local action is encouraged and mechanisms mandate a number of minor activities at the local level
●	Level 5	Local action is encouraged and mechanisms mandate major activities at the local level

2.2.2 Impact of municipal government disaster risk management activities

●	Level 1	Municipal government is not engaged in disaster risk management
●	Level 2	Municipal government is engaged in disaster risk management, but activities are ineffective
●	Level 3	Municipal government is engaged in disaster risk management, but impact of activities is minimal
●	Level 4	Municipal government is engaged in activities that have a positive impact on some areas of disaster risk management
●	Level 5	Municipal government is engaged in activities that have a positive impact on all areas of disaster risk management

2.2.3 Extent to which legislation or regulations mandate that municipal government prepare adequate disaster risk management plans

●	Level 1	No legislation to ensure creation of DRM plans
●	Level 2	Very weak legislation, DRM plans are encouraged, but they are not mandatory
●	Level 3	Weak legislation, includes legal mechanisms but standards for DRM plans are unclear
●	Level 4	Moderate legislation, includes legal mechanisms to ensure plans are satisfactory
●	Level 5	Strong legislation, includes legal mechanisms to ensure plans meet a high standard

2.2.4 Extent to which legislation or regulations mandate that municipal authorities carry out surveys and develop local disaster risk assessments and maps, including climate change scenarios.

	Level 1	No legislation to ensure disaster risk assessments are completed
	Level 2	Very weak legislation - disaster risk assessment are encouraged, but they are not mandatory
	Level 3	Weak legislation - includes mandatory requirements but standards for disaster risk assessment are unclear
	Level 4	Moderate legislation - includes mandatory requirements to ensure assessments are done, but based on low standards and does not include all hazards or include climate change scenarios
	Level 5	Strong legislation - includes mandatory requirements to ensure assessments are done, based on high standards, addressing all relevant hazards, including climate change scenarios

Key activities and evidence

2.2 Laws and Regulations at the Local Level

- 2.2.1 Develop regulations, protocols and procedures at the municipal level to encourage and mandate local action and activities.
- 2.2.2 Allocate and facilitate investment of dedicated, adequate and predictable resources for municipalities to encourage and mandate engagement in DRM activities at the local level.
- 2.2.3 Develop regulations, protocols and procedures at the municipal level to include mandatory requirements that ensure municipalities have a **disaster risk management plan** meeting a high standard.
- 2.2.4 Develop regulations, protocols and procedures at the municipal level to include mandatory requirements that ensure municipalities have a **disaster risk assessments**, addressing all relevant hazards, including climate change scenarios.

2.3 Cooperation at the Local Level

Effective DRM requires extensive cooperation at the local level, including neighboring municipal councils, the regional government and other stakeholders such as the private sector, non-government organizations, and community organizations. The private sector should be engaged and challenged by governments and civil society to contribute to DRM through participation in public policy formulation and investments in public-private partnership programs and projects. It also requires close coordination between municipal councils, through frameworks and protocols such as Mutual Aid Agreements that support action to achieve shared goals in preparing and responding to disasters.

Assessment Criteria

2.3.1 Effectiveness of cooperation between neighboring municipal councils on disaster management issues.

●	Level 1	No cooperation between municipal councils
●	Level 2	Activities which will demonstrate cooperation between municipal councils will be completed within a year
●	Level 3	Some cooperation has occurred, but these activities have been ineffective in addressing disaster management issues
●	Level 4	Effective cooperation with neighboring municipal councils has addressed some disaster management issues
●	Level 5	Effective cooperation with neighboring municipal councils has addressed a wide range of disaster management issues

2.3.2 Effectiveness of cooperation between municipal councils and the regional government on disaster risk management issues.

●	Level 1	Little to no cooperation between the municipal council and Dar es Salaam City Council
●	Level 2	Activities are planned within a year that will establish cooperation between the municipal council and Dar es Salaam City Council
●	Level 3	Cooperation sometimes occurs, but activities have been ineffective in addressing DRM issues
●	Level 4	Municipal council and city council sometimes work together effectively on DRM issues
●	Level 5	Municipal council and city council work together consistently and effectively on a wide range of DRM issues

2.3.3 Effectiveness of municipal councils in coordinating disaster management activities with the private sector, non-government organizations, and community organizations.

●	Level 1	No evidence of coordination with private sector, non-government organizations, and community organizations
●	Level 2	Mechanisms for coordinating disaster management activities with private sector, non-government organizations, and community organizations will be established and tested within a year
●	Level 3	Some coordination has occurred, but these activities have not enhanced disaster management activities
●	Level 4	Effective coordination with the private sector, non-government organizations, and community organizations has enhanced some disaster management activities
●	Level 5	Effective coordination with the private sector, non-government organizations, and community organizations has enhanced a wide range of disaster management activities

2.3.4 Level of inclusion of vulnerable groups (women, youth, elderly, migrants, low-income, people with disabilities, and ethnic minorities) in DRM issues.

-  Level 1 Little or no engagement with vulnerable groups
-  Level 2 Mechanisms for engagement with vulnerable groups will be established and tested within a year
-  Level 3 Some engagement with vulnerable groups occurs, but it has little or no impact on disaster management plans
-  Level 4 Some vulnerable groups are engaged in DRM issues, with positive impacts on disaster management plans
-  Level 5 Many different vulnerable groups are engaged in DRM issues, with positive impacts on disaster management plans

Key activities and evidence

2.3 Cooperation at the Local Level

- 2.3.1** Develop protocols and procedures to encourage and mandate cooperation between **neighboring municipal councils** on DRM issues.
- 2.3.2** Develop protocols and procedures to encourage and mandate cooperation between municipal councils and the **regional government** on DRM issues.
- 2.3.3** Develop protocols and procedures to encourage and mandate cooperation between municipal councils and the **private sector, non-government organizations and community organizations** on DRM issues.
- 2.3.4** Develop protocols and procedures to encourage and mandate inclusion of **vulnerable groups** in the municipality on DRM issues.

2.4 Risk Sensitive Land-use Planning

Not all hazards are expected to cause disasters. A disaster occurs when a hazard results in devastation that leaves communities unable to cope unaided. Pre-emptive measures therefore can help build better resilience capacity, avoid and/or minimize the disruption and destruction of networks, grids and infrastructure, which can cause severe social and economic consequences. Integrating resilience into socio-economic development planning and infrastructure can safeguard development investments. Risk-sensitive land use planning (RSLUP) is planning that integrates risk reduction to allow communities to find the right mix of both development and risk reduction, in other words, accepting some risk for economic gain and vice versa. Thus, it combines the risk management process (i.e. risk assessment, risk treatment, and others) with the land use planning process. One of the most important principles of RSLUP is to avoid development in hazard prone areas or risk prone areas or “hot spots” that are exposed to the risk of natural hazards and climate change.

Assessment Criteria

2.4.1 Availability of formal plans (land use plans / zoning regulations) that incorporate hazard maps or related means that identify areas where construction is not permitted due to natural hazards.

●	Level 1	No formal land use plans / zoning regulations exist
●	Level 2	Formal plans do not incorporate hazard maps
●	Level 3	Formal plans incorporate hazard maps but enforcement is weak
●	Level 4	Formal plans incorporate some hazard maps and enforcement is strong for these
●	Level 5	Formal plans incorporate all relevant natural hazards and risks and enforcement is strong

2.4.2 Availability of policies and guidelines for risk mitigation of public facilities.

●	Level 1	No policies or guidelines for risk mitigation of public facilities
●	Level 2	Policies or guidelines for risk mitigation of public facilities will be established within a year
●	Level 3	Policies and guidelines exist for the mitigation of public facilities, but little or no mitigation projects have been completed
●	Level 4	Policies and guidelines exist for the mitigation of public facilities, but only minor mitigation projects have been completed
●	Level 5	Policies and guidelines exist for the mitigation of public facilities, with major mitigation projects being completed

Key activities and evidence

2.4 Risk Sensitive Land-use Planning

- 2.4.1 Develop formal plans (land use plans / zoning regulations) that incorporate hazard maps or related means that identify areas where construction is not permitted due to natural hazards.
- 2.4.2 Develop policies, procedures and guidelines for risk mitigation of public facilities.

2.5 Unplanned Settlements

In Dar es Salaam, at least 70 percent of the population live in unplanned settlements (URT, 2000). Many of the fatalities during the heavy rains occur in unplanned neighborhoods near the city center that straddle the Msimbazi river (World Bank 2018). Key issues include inaccessible roads in an emergency, contamination and spread of disease during flooding and inadequate services and infrastructure placing these communities at increased risk for flooding. Roads in unplanned settlements are not always paved or clearly demarcated, and roads reserves are obtained through “social regulation”. Drainage channels are regularly blocked,

causing houses to be flooded by sewage-based wastewater causing water-borne diseases. Access to basic sanitation and potable waters varies from one settlement to the other but is generally inadequate to meet demand.

The Government of Tanzania is identifying all properties in unplanned settlements in Dar es Salaam and issuing land/property licenses or right of occupancy to improve security of tenure, which could be used as collateral for economic empowerment (Kyessi and Sekiete, 2014). Significant upgrading projects of unplanned settlements are also underway. However, disaster risk management has largely been ignored and needs to be integrated in all aspects of planning, particularly for unplanned settlements located in hazardous areas. Furthermore, the legal, social, political and economic factors associated with urban upgrading or renovation can be quite challenging to resolve and will require the use of guidelines and follow-up tools informed by anticipated demographic and environmental changes.

Assessment Criteria

- 2.5.1** Extent to which data and studies regarding DRM and unplanned settlements are integrated into municipal policies to reduce disaster risk of unplanned settlements.

Additional Information:

Disaster risk reduction in unplanned settlements requires disaggregated information and studies for inclusive, risk-informed decision-making. The availability of accurate data on community assets, critical facilities, drainage and flood inundation maps in unplanned settlements, for example, are critical in formulating public policies aimed at addressing the issues of prevention or relocation, where possible, of human settlements in disaster risk-prone zones.

●	Level 1	Little to no data collection and/or studies completed
●	Level 2	Data collection efforts and studies will be completed within a year
●	Level 3	Some data collected and studies completed, but data and findings not integrated into policies to reduce disaster risk of unplanned settlements.
●	Level 4	Major data collection efforts and studies completed and implemented into policy, but do not address all unplanned settlements in hazardous areas or do not address all potential hazards
●	Level 5	Major data collection efforts and studies completed and integrated in public policies to reduce disaster risk in unplanned settlements

- 2.5.2** Availability of strategies / policies / projects in place to reduce the vulnerability of unplanned settlements (e.g. housing improvement, formalizing property rights, relocation).

Additional information:

This refers to specific strategies or provisions to reduce the vulnerability and strengthen the resilience of communities in unplanned settlements located in hazardous areas in the formal policy (e.g. Land Act 1999) or regularization projects in Dar es Salaam (e.g. The Residential Licenses project)

	Level 1	No strategy or policy exists
	Level 2	Strategies exists but there is no formal policy
	Level 3	Formal policy exists, but is ineffective or has not been adopted
	Level 4	Formal policy is adopted and is somewhat effective in some areas at reducing the vulnerability of unplanned settlements
	Level 5	Formal policy is adopted and is very effective at reducing the vulnerability of unplanned settlements in the municipality

- 2.5.3** Level of coordination between developers and local authorities during the planning and construction process.

	Level 1	Little to no coordination
	Level 2	Coordination occurs but is ineffective
	Level 3	Coordination occurs, but is limited to a few issues
	Level 4	Some coordination takes place for some issues
	Level 5	Extensive coordination on all construction-related issues

- 2.5.4** Availability of policies to improve access to adequate, safe and secure housing.

	Level 1	Not at all
	Level 2	Policies will be in place within a year
	Level 3	Policies are in place but are ineffective in ensuring adequate, safe and secure housing
	Level 4	Effective policies are in place that have somewhat improved access to adequate, safe and secure housing
	Level 5	Effective policies are in place that have greatly improved access to adequate, safe and secure housing

Key activities and evidence

2.5 Unplanned Settlements

- 2.5.1 Conduct studies, assess available data i.e. RAMANI HURIA and from Municipalities, and collect missing data sets on unplanned settlements in the municipality addressing relevant hazards
- 2.5.2 Develop strategies / policies to reduce the vulnerability of unplanned settlements (e.g. housing improvement, formalizing property rights, relocation)
- 2.5.3 Develop protocols and procedures to encourage the coordination between developers and local authorities during the planning and construction process.
- 2.5.4 Develop protocols and procedures to improve access to adequate, safe and secure housing.

2.6 Building Regulation

Reducing the vulnerability of existing building stock is considered one of the most complex urban risk reduction issues. As disasters are becoming more frequent and intense, particularly as a result of climate change, building regulation must take into account additional measures to protect the increasing number of people at risk. A comprehensive building regulatory framework facilitates the achievement of many social and economic objectives. Political and legal systems in many countries require that most buildings meet some minimum level of performance in terms of health, safety, welfare, energy efficiency, and accessibility. Components of the building regulatory framework, including enabling legislation, planning, building and fire regulation, and compliance mechanisms, function holistically to assure that a particular building, on a particular site, is able to achieve the minimum levels of performance.

Building regulatory frameworks also facilitate economic development and stability by establishing effective, efficient and reliable regulatory practices that incentivize economic investment. They do so by providing the market with a clear set of design and construction requirements and quality standards, which in turn minimizes barriers to trade and facilitates investor confidence. They also benefit education and training across the sector, from skilled craftspersons to engineers and design professionals (WB, 2017). Currently in Tanzania, the Urban Planning Act of 2007 gives each planning authority the power to control the use of land, development of land and buildings in the interests of proper and orderly development as well as powers to formulate by-laws to regulate zoning in respect of use and density of development. However, Adam (2015) states that the authorities responsible for controlling the development of settlement in urban areas still have shortcomings in enforcing the planning regulations and standards in urban areas.

Building Regulation and the Sendai Framework

A key priority of the Sendai Framework for Disaster Risk Reduction (2015-2030) is encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety-enhancing provisions, including those addressing building codes and safety standards, and update them, where needed, to ensure an adequate focus on disaster risk management (SFDRR, 27d). Furthermore, the SFDRR encourages the revision of existing or the development of new building codes and standards and rehabilitation and reconstruction practices at the national or local levels, as appropriate, with the aim of making them more applicable within the local context, particularly in informal and marginal human settlements, and reinforce the capacity to implement, survey and enforce such codes through an appropriate approach, with a view to fostering disaster-resistant structures (SFDRR, 27h).

Assessment Criteria

2.6.1 Incorporation of disaster resilient construction techniques in building regulations / codes.

-  Level 1 No building regulations / codes in place
-  Level 2 Building codes somewhat address disaster-resilient construction techniques
-  Level 3 Building codes effectively address disaster-resilient construction techniques, but enforcement is weak
-  Level 4 Formal building regulations / codes effectively address disaster-resilient construction techniques, with strong enforcement, but only cover some hazards
-  Level 5 Formal building regulations / codes effectively address disaster-resilient construction techniques, with strong enforcement, covering all relevant hazards

2.6.2 Updating of building codes with the latest hazard and risk studies.

-  Level 1 Building codes are outdated
-  Level 2 Building codes have been updated but not in accordance with hazard and risk studies
-  Level 3 There has been limited updating of the building code in regard to incorporating hazard and risk studies
-  Level 4 Building codes have been updated to incorporate some, but not all, of the latest hazard and risk assessments
-  Level 5 Building codes have been updated to incorporate the latest hazard and risk assessments

2.6.3 Availability of laws and regulations which enable the licensing / certification of construction professionals (e.g. building inspectors, fire officials, architects, planners, engineers, builders, trades, contractors, third-party reviewer).

	Level 1	No regulations in place
	Level 2	Regulations exist for some construction professionals but not formally adopted or enacted
	Level 3	Regulations are formally enacted for the licensing and certification of some construction professionals but not enforced
	Level 4	Regulations are formally enacted and enforced for the licensing of some construction professionals
	Level 5	Regulations are formally enacted and enforced for the licensing of most key construction professionals

2.6.4 Availability of laws and regulations which enable the certification / testing / quality control of building materials and system.

	Level 1	No regulations in place
	Level 2	Regulations exist but not formally adopted or enacted
	Level 3	Regulations are formally enacted, but no responsibilities for certification / testing / quality control assigned
	Level 4	Regulations are formally enacted, and responsibilities for certification / testing / quality control assigned in some cases
	Level 5	Regulations are formally enacted, and responsibilities for certification / testing / quality control assigned in most cases

2.6.5 General level of safety of buildings from major hazards, including floods and earthquake

	Level 1	Almost no buildings are built to withstand major flooding or earthquakes
	Level 2	Some buildings are built to withstand one hazard
	Level 3	Many buildings are built to withstand one hazard
	Level 4	Some buildings are built to withstand multi-hazards such as major flooding and earthquakes
	Level 5	Most buildings are built to withstand multi-hazards such as major flooding and earthquakes

Key activities and evidence

2.6 Building Regulation

- 2.6.1 Incorporate formal building regulations / codes that effectively address disaster-resilient construction techniques, with strong enforcement, covering all relevant hazards.
- 2.6.2 Incorporate building codes which have been updated in accordance with the latest hazard and risk studies.
- 2.6.3 Incorporate regulations which enable the licensing / certification of construction professionals (e.g. building inspectors, fire officials, architects, planners, engineers, builders, trades, contractors, third-party reviewer).
- 2.6.4 Incorporate laws and regulations which enable the certification / testing / quality control of building materials and system.
- 2.6.5 Allocate and facilitate investment of dedicated, adequate and predictable resources to encourage and mandate strengthening buildings from major hazards, including floods and earthquakes.

2.7 Investments and Resource Allocation

Resources, investments and incentives are stacked against disaster risk reduction. Disaster risk reduction is a long-term, low-visibility process, with little guarantee of tangible rewards in the short term, either for politicians in affected cities or for donors. However, inaction brings further complication of the problem and further accumulation of risk, creating the need for future investments that are significantly costlier than those needed now. Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation. The benefits of timely, stable and predictable investments outweigh the costs; significant focus and resources (including financial and logistics) are required to scale up efforts in disaster risk reduction. Doing nothing is not an option. Significant resources can be generated to ensure that a portion of the emergency relief and reconstruction budget goes directly into long-term risk reduction.

Resource Allocation and the Sendai Framework

The development and implementation of disaster risk reduction strategies, policies, plans, laws and regulations in all relevant sectors require allocation of necessary resources, including finance and logistics, as appropriate, at all levels of administration (SFDRR, 30a). Furthermore, while the enabling, guiding and coordinating role of national and federal State Governments remain essential, it is necessary to empower municipal governments and local communities to reduce disaster risk, through resources that are timely, stable and predictable (SFDRR 19f).

Assessment Criteria

2.7.1 Level of budget allocation for municipal government to implement disaster risk management activities.

●	Level 1	No budget allocation
●	Level 2	Limited allocation of national budget for emergency response
●	Level 3	Specific allocation for disaster risk management at the local level, but difficult to access
●	Level 4	Specific allocation for disaster risk management at the local level, covers some planned activities and is relatively easy to access
●	Level 5	Specific allocation for disaster risk management at the local level, sufficient to cover all planned activities and easy to access

2.7.2 Authority of the municipality to allocate resources for disaster risk management activities (including personnel, finances, material and logistics)

●	Level 1	No authority to allocate disaster risk management resources
●	Level 2	Municipality has limited authority to allocate resources, but it is under-resourced
●	Level 3	Municipality has authority, convening power and resource/ funding but they do not have proper inter-agency support.
●	Level 4	Municipality is properly resourced/ funded and has authority to act, but there is inconsistency in resourcing across the key DRM stages.
●	Level 5	Municipality is properly resourced/ funded and have authority to act across all DRM stages – pre-event, response and recovery

2.7.3 Access of the municipality to funds to support vulnerable populations to strengthen community coping capacities before a hazard event.

●	Level 1	Sporadic subsidies to support vulnerable communities
●	Level 2	Some financing exists but not sufficient or effective
●	Level 3	Financing programs and funds created and are somewhat effective
●	Level 4	Financing programs and funds created and are somewhat effective in some areas of the municipality
●	Level 5	Financing programs and funds created are very effective and integrated with risk-based prevention and mitigation activities throughout the municipality

2.7.4 Access of the municipality to funds to acquire missing resources for emergency response, shelter provision and relief distribution.

●	Level 1	No ability to acquire missing resources
●	Level 2	Informal opportunities to acquire missing resources exist, but no formal funding mechanisms in place
●	Level 3	Funding mechanisms exist, but are difficult to utilize in practice
●	Level 4	Funding mechanisms exist, process is simple, but funds only cover some missing needs
●	Level 5	Funding mechanisms exist, process is simple, and funds cover all missing needs

2.7.5 Access of the municipality to funds to strengthen public assets and critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities).

●	Level 1	Not at all
●	Level 2	No, but programs will be developed within a year
●	Level 3	Financing programs are available but they are difficult to access
●	Level 4	Financing programs are straightforward to access and have been somewhat effective at strengthening infrastructure
●	Level 5	Financing programs are straightforward to access and have been very effective at strengthening infrastructure

Key activities and evidence

2.7 Investments and Resource Allocation

- 2.7.1 Budget plan for timely, stable and predictable allocation for municipal councils to implement disaster risk management activities.
- 2.7.2 Development of formal policy and strategies to provide authority to municipalities to allocate resources for disaster risk management activities (including personnel, finances, material and logistics)
- 2.7.3 Development of formal policy and strategies for municipalities to access funds to support vulnerable populations to strengthen community coping capacities before a disaster
- 2.7.4 Development of formal policy and strategies for municipalities to access funds to acquire missing resources for emergency response, shelter provision and relief distribution
- 2.7.5 Development of formal policy and strategies for municipalities to access funds to strengthen public assets and critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities)

2.8 Financial Protection

Losses from disasters are only expected to rise as the impacts of climate change intensify across the Sub-Saharan Africa region. Given these challenges, governments in the region have often been reliant on external aid and budget reallocation to pay for disaster recovery (World Bank 2019). However, this financing strategy comes at a cost. Uncertainty and delays in aid flows tend to complicate planning for relief and recovery efforts, and budget reallocations can divert funding from vital development programs. In Tanzania, there are difficulties in managing and controlling floods because of challenges in place, including the delay of aid to flood victims. It was found that the delay of aid is the main problem that can constrain governments efforts to managing the impact of major flood events (Ringo, 2018).

At the most basic level, disaster risk financing aims to transfer risks and strengthen the ability to manage economic and fiscal stresses when disasters strike. There is no one-size-fits-all approach to disaster risk financing and a wide array of financial protection policies and instruments exists, including risk insurance programs (or other risk transfer instruments), reserve funds (or ex-ante budget allocation), line of contingent credit, emergency ex-post budget allocation, and ex-post sovereign borrowing, and social protection programs.

Financial Protection and the Sendai Framework

Sendai encourages disaster risk financing and financial protection at the local, regional and national level in two important ways:

- To promote mechanisms for disaster risk transfer and insurance, risk-sharing and retention and financial protection, as appropriate, for both public and private investment in order to reduce the financial impact of disasters on Governments and societies (SFDRR 30b)
- To promote the development and strengthening of disaster risk transfer and sharing mechanisms and instruments in close cooperation with partners in the international community, business, international financial institutions and other relevant stakeholders (SFDRR 31b)

Assessment Criteria

2.8.1 Level of insurance coverage and risk transfer strategies (insurance/reinsurance, risk titles, bonds, etc.) for public assets and critical infrastructure.

	Level 1	Little to no insurance coverage or loss transfer strategies
	Level 2	Insurance coverage and risk transfer strategies will be established within a year
	Level 3	Insurance and risk transfer strategies exist, but key deficiencies prevent such programs from being effective
	Level 4	Insurance and risk transfer strategies exist, but only some public buildings and infrastructure are protected at the municipal level
	Level 5	Programs for financial loss transfer and insurance coverage are fully in place and protect most public buildings and infrastructure

2.8.2 Level of regulation to ensure fair and reliable access to home and property insurance.

●	Level 1	Little to no homes and property are insured
●	Level 2	Some homes and property are insured but there are no regulations in place to ensure fair and reliable access to insurance
●	Level 3	Some regulation exists but it is ineffective in ensuring fair and reliable access to home and property insurance
●	Level 4	Regulations exist that have resulted in fair and reliable access to home and property insurance, but purchase of insurance coverage is low
●	Level 5	Regulations exist that have resulted in fair and reliable access to home and property insurance, with the majority of home and property owners purchasing coverage

2.8.3 Level of support for a business environment (including investments, innovations, and entrepreneurship) integrated with disaster risk reduction, urban resilience, environmental ability, climate change mitigation and adaptation, and inclusivity.

●	Level 1	Not at all
●	Level 2	No, but plans are in place to establish support programs within a year
●	Level 3	The government has some support programs, but they are overall ineffective
●	Level 4	The government has some support programs and incentive schemes for businesses who address DRM issues
●	Level 5	The government has a wide variety of support programs and incentive schemes for businesses who address DRM issues

Key activities and evidence

2.8 Financial Protection

- 2.8.1 Availability of insurance coverage and loss transfer strategies (insurance/reinsurance, risk titles, bonds, etc.) for public assets and critical infrastructure.
- 2.8.2 Availability of sufficient regulation to ensure fair and reliable access to home and property insurance.
- 2.8.3 Presence of a business environment (including investments, innovations, and entrepreneurship) integrated with disaster risk reduction, urban resilience, environmental ability, climate change mitigation and adaptation, and inclusivity.

Tools and Resources

[Urban Flooding and its Management: Case Study of Delhi – National Institute of Disaster Management](#)

An overview of how to manage floods in the context of India.

[Adapting Urban Water Systems to Climate Change – ICLEI, IWA, SWITCH, UNESCO \(2011\)](#)

A handbook for decision makers at the local level on the key areas of vulnerability of urban water systems to climate change.

[Handbook on Good Building Design and Construction – UNDP, UNDRR \(2007\)](#)

Tips for homeowners/builders on the principles of good design in areas prone to natural hazards.

[Informal Settlements and Finance in Dar es Salaam, Tanzania - UNHABITAT \(2010\)](#)

Know-how, knowledge and tools in unplanned settlements financing and delivering affordable housing to the poor

[Handbook on Building Regulatory Capacity Assessment - GFDRR \(2017\)](#)

[Level 1 - Initial Screening](#)

[Level 2 - Detailed Exploration](#)

Screening tool and set of guidelines for government officials on building regulation

[Risk transfer and insurance for disaster risk management: evidence and lessons learned \(2017\)](#)

Incorporating insurance within a DRM strategy: conceptual framework and evidence from around the world.

[Disaster Risk Financing - A Global Survey of Practices and Challenges - OECD \(2015\)](#)

Overview of the disaster risk assessment and financing practices of a broad range of economies

COMPONENT

3

EMERGENCY
MANAGEMENT



Well-conceived emergency preparedness and response plans not only save lives and property, they often also contribute to resilience and post-disaster recovery by lessening the impact of a disaster.

Preparedness efforts, early warning systems and communication systems will help ensure that cities, communities and individuals threatened by natural or other hazards can act in sufficient time and appropriately to reduce injury, loss of life and damage to property and fragile environments.

Sustainability can be achieved if the community itself and local authorities understand the importance of and need for local emergency preparedness and response.

Emergency management is the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters.

Emergency management seeks to promote safer, less vulnerable communities with the capacity to cope with hazards and disasters. Emergency Management protects communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters.

FEMA Emergency Management Principles

1. **Comprehensive** — emergency managers consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
2. **Progressive** — emergency managers anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
3. **Risk-Driven** — emergency managers use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources.
4. **Integrated** — emergency managers ensure unity of effort among all levels of government and all elements of a community.
5. **Collaborative** — emergency managers create and sustain broad and sincere relationships among individuals and organizations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.
6. **Coordinated** — emergency managers synchronize the activities of all relevant stakeholders to achieve a common purpose.
7. **Flexible** — emergency managers use creative and innovative approaches in solving disaster challenges.
8. **Professional** — emergency managers value a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement.

3.1 Emergency Response Plan

In an emergency, it is vital to know who is going to do what. The clearer the responsibilities and the decision-making processes are, the more likely a response will be effective. An emergency response plan (ERP) is a document which describes the command structure to response, with relevant responsibilities and authority in the event of an emergency. The ERP sets guidelines for inter-institutional coordination to manage a disaster in an effective, efficient, and timely manner for different Emergency Response Functions (ERF). The ERP typically calls for the establishment of the Incident Command System (ICS) and the development and activation of the Emergency Operations Center (EOC). An emergency response plan is activated on an as-needed basis and is designed to be used for all types of emergencies.

DarMAERT Emergency Response Plan

As per the Disaster Management Act of 2015, Regional Disaster Management Committees should be established for coordinating emergency management at the regional level. Specifically in Dar es Salaam, and with the objective of improving coordination in emergency response, and providing technical support to the Regional Disaster Management Committee when addressing disaster response, a tactical inter-institutional body (Dar es Salaam Multi-Agency Emergency Response Team – DarMAERT) was created.

The DarMAERT Emergency Response Plan describes the control and coordination procedures for mobilizing staff and resources in a combined response to a major emergency, be it a consequence of a natural or human-made/technological hazard. As opposed to specific plans, it does not aim at addressing particular types of events or situations, nor specific sites or locations. Likewise, the plan does not cover the recovery phase of the disaster management cycle. Furthermore, and following generally accepted good practices, day-to-day incident procedures are not included in the plan, because they do not require special mobilization.

The purpose of this DarMAERT Emergency Response Plan is to serve key stakeholders engaged in response within Dar es Salaam Region, at the time of an emergency or disaster arising from both natural and human-made hazards. Its ultimate objective is to consolidate capacity of the multi-agency to support a coordinated response by ensuring that all those charged with tackling the emergency or disaster: (i) know their role; (ii) are competent to carry out the tasks assigned to them; (iii) have access to available resources and facilities; and (iv) work together as a partnership. In sum, the plan aims to bring order to the response operations. It is concerned with providing a framework for management, coordination and control within which a team of responders can go about their work. The DarMAERT Emergency Response Plan is a multi-agency plan and has been developed with the underlying agreement that for a successful combined response, there is need of a formal set of procedures governing all key emergency responders in the region.

Assessment Criteria

3.1.1 Awareness of municipal officials of the content and strategy of the municipality's Emergency Response Plan (e.g., DarMAERT ERP).

	Level 1	Not at all
	Level 2	Some of the relevant officials have read and understand the DarMAERT ERP
	Level 3	Most of the relevant officials have read and understand the DarMAERT ERP
	Level 4	Some of the relevant officials have completed a training, education and drills program on the DarMAERT ERP and have a comprehensive understanding
	Level 5	Most relevant officials have completed a training, education and drills program on the DarMAERT ERP and have a comprehensive understanding

3.1.2 Availability of a system for inter-institutional coordination (e.g. Emergency Support Function system) in the municipality.

	Level 1	No or very deficient systems for coordination
	Level 2	An inter-institutional coordination system will be established within a year
	Level 3	An inter-institutional coordination system has been established, but the system has major gaps or shortfalls and is generally inadequate
	Level 4	There is a system for the coordination of stakeholders to respond and recover from some disaster scenarios with a training and drills program under development to test the coordination system
	Level 5	There is a fully established system for the coordination of stakeholders to respond and recover from all relevant disaster scenarios, which has been practiced by all relevant stakeholders in an established training and drills program

3.1.3 Utilization of the Incident Command System (ICS) for emergency response by municipal officials in Dar es Salaam.

●	Level 1	Not at all
●	Level 2	Some of the relevant officials are aware ICS, but not yet used by the municipal officials
●	Level 3	Most of the relevant officials are aware, but not yet used by the municipal officials
●	Level 4	Some relevant officials have utilized the ICS for implementing some critical response activities
●	Level 5	Most relevant officials have utilized the ICS for implementing all critical response activities

3.1.3 Availability of sufficient resources (including personnel, equipment, technology) supporting the Emergency Operations Center (EOC) that serves the municipality to coordinate a large-scale disaster response.

Additional Information:

When an emergency or major disaster occurs, or threatens to occur, the Emergency Operations Center (EOC), located in the premises of the Ilala Fire Station in Dar es Salaam, will be activated by the DarMAERT Coordinator in a timely manner. The EOC will serve as a central point for coordinating the operational, logistical, and administrative support needs of response personnel at the disaster/emergency site. Each requested member of the EOC will be notified by the Coordinator or his/her designated representative. Emergency response personnel provided by various organizations/agencies to support emergency operations will remain under the direction and control of the sponsoring organization but will be assigned by the EOC to respond to a specific disaster/emergency location. The DarMAERT Emergency Response Plan describes the control and coordination procedures for mobilizing staff and resources in a combined response to a major emergency, be it a consequence of a natural or human-made/technological hazard. If the Municipal Council has its own Emergency Response Plan, this should be used as the reference in answering this question, otherwise the DarMAERT ERP can be used as the reference document for this question.

●	Level 1	EOC exists but with significant shortcomings
●	Level 2	Plans are in place to build up resources for the EOC within a year
●	Level 3	Resources are in place for the EOC to coordinate a response to minor disaster events
●	Level 4	Resources are in place for the EOC to coordinate a response to specific major disasters, but not all potential disaster scenarios
●	Level 5	Resources are in place for the EOC to coordinate a response to major disasters, including all potential disaster scenarios

Key activities and evidence

3.1 Emergency Response Plan

- 3.1.1 Complete a training, education and drills program to familiarize key municipal officials and relevant stakeholders with the DarMAERT ERP
- 3.1.2 Complete a training, education and drills program and establish protocols and procedures for the coordination of all relevant stakeholders to respond and recover from all potential disaster scenarios
- 3.1.3 Complete a training, education and drills program on the utilization of the Incident Command System (ICS) for emergency response by municipal officials in Dar es Salaam
- 3.1.4 Allocation of dedicated, adequate and predictable resources supporting the EOC to coordinate a response to major disasters, including all potential disaster scenarios

3.2 Plan Testing and Review

Plan Testing: The occurrence of an emergency provides the true test of a plan, including how far managers and operational personnel are guided by it. However, putting the Emergency Response Plan into practice can also be done whether in a complex way ('live') or through a 'table top' exercise. Validation exercises will help the Municipal Councils understand the main elements of the Plan and see what works and what does not. Running drills should be conducted every year. However, the need for a full-scale exercise can be waived if there has been a response to a Level 2 or Level 3 incident during that year (See the DarMAERT ERP for aspects of the Emergency Response Plan that should be tested).

Assessment Criteria

- 3.2.1** Existence of training programs to build capacity to implement the municipality's emergency response plan (e.g. DarMAERT ERP).
-
- | | | |
|---|---------|--|
|  | Level 1 | No training programs in place |
|  | Level 2 | Only informal training programs exist |
|  | Level 3 | Formal training programs exist, but content of training is very general |
|  | Level 4 | Formal training programs exist, with detailed content, but does not cover all relevant hazards |
|  | Level 5 | Formal training programs exist, with detailed content covering all relevant hazards |

3.2.2 Testing with the relevant stakeholders of the municipal council contingency plans.

	Level 1	Contingency plans are not in place or have not been tested
	Level 2	Contingency plans have been tested, but tests have not confirmed effectiveness of plans
	Level 3	Some elements of contingency plans have successfully passed testing criteria
	Level 4	Various elements of contingency plans have passed testing criteria, but only using a limited number of hazard scenarios
	Level 5	All key elements of contingency plans have passed testing criteria using a wide range of hazard scenarios

Key activities and evidence

3.2 Plan Testing and Review

- 3.2.1 Complete a training, education and drills program by key municipal officials and all relevant stakeholders to implement the DarMAERT ERP
- 3.2.2 Conduct validation exercises to test and understand the main elements of the Emergency Response Plan on an annual basis

3.3 Administration and Logistics

During large-scale emergency situations, normal requisition procedures can be circumvented. This will be done through procurement regulations under the emergency procurement provision. Accurate records of all actions taken in an emergency are essential for the revision of plans, procedures, and training; as well as for the design of mitigation activities. Each municipal official/department head, who is responsible for an emergency function, must keep detailed, accurate records of all emergency conditions and the actions taken in response to them. Agreements and understandings with the private sector, relevant organizations and local and international humanitarian organizations can be utilized to supplement local resources should an emergency exhaust the capabilities of the Government of Tanzania. Requests for such assistance will be made in accordance with negotiated mutual aid agreements and understandings. All such agreements will be formalized in writing whenever possible. All logistical resources will be under the coordination of the Regional Administrative Secretary as leader, and advised by key stakeholders from DarMAERT according to the roles and responsibilities assigned to the agency.

Assessment Criteria

- 3.3.1 Extent to which the municipality has the technical, financial and administrative capacity to implement the emergency response plan (e.g. DarMAERT ERP).

	Level 1	Little or no capacity
	Level 2	Little or no capacity but plans are in place to improve capacity within a year
	Level 3	Some capacity but key deficiencies remain
	Level 4	Strong capacity but limited implementation so far
	Level 5	Strong capacity with proven successful implementation

3.3.2 Availability of agreements (i.e., mutual-aid agreements), policies or procedures to utilize the resources of the public and private sector to improve preparedness and response activities (e.g., prepositioning of goods, disaster communication, search and rescue, emergency services and management of temporary shelters) in the municipality.

●	Level 1	No agreements in place and little understanding of potential resource suppliers
●	Level 2	No agreements in place but very good understanding of potential resource suppliers
●	Level 3	Agreements in place and/or procedures for acquiring resources exist, but still difficult to acquire resources
●	Level 4	Agreements in place and/or formal procedures for acquiring resources exist and simplify the process of acquiring resources, but key resources still missing to cover all potential needs
●	Level 5	Agreements in place and/or formal procedures for acquiring resources exist, and resources are sufficient to cover all potential needs

3.3.3 Availability of inventory of the potential resources from the public and private sector that could be used in preparation or response to a disaster.

●	Level 1	No inventory of potential resources
●	Level 2	No official inventory but a general understanding exists of what resources are available
●	Level 3	Official inventory exists but is missing critical details such as resource quantities, delivery times, capacity, costs, and alternative suppliers
●	Level 4	Inventory estimates resource quantities, delivery times, capacity, costs, and alternative suppliers, but some potential needs are not addressed
●	Level 5	Inventory estimates resource quantities, delivery times, capacity, costs, and alternative suppliers and address all potential needs

Key activities and evidence

Administration and Logistics

- 3.3.1 Complete a training, education and drills program by key municipal officials and all relevant stakeholders to implement the DarMAERT ERP
- 3.3.2 Conduct validation exercises to test and understand the main elements of the Emergency Response Plan on an annual basis
- 3.3.3 Develop inventory of the potential resources from the public and private sector that could be used in preparation or response to a disaster

3.4 Emergency Response Functions

Based on the Tanzania Emergency Preparedness and Response Plan (TEPRP) of 2012, a set of 15 key response functions have been considered for this DarMAERT Emergency Response Plan. The primary and secondary agencies/departments in Dar es Salaam for each of the 15 Emergency Support Functions are shown in Table 2.

The Municipal Councils are the primary stakeholder for shelter and mass care, and the secondary stakeholder for: Communication and Warning; Evacuation; Law Enforcement; Health and Medical Services; Damage Assessment; Utilities; Resources Management and Supply; and Dead-Bodies Management.

Table 3 Roles of Key Emergency Response Stakeholders in Dar es Salaam Region. P= Primary Stakeholder; S = Secondary Stakeholder (Source: DarMAERT Emergency Response Plan).

AGENCY / DEPARTMENT	FUNCTION														
	1. Direction and Control	2. Communication and Warning	3. Evacuation	4. Firefighting	5. Law Enforcement	6. Health and Medical Services	7. Search and Rescue	8. Shelter and Mass Care	9. Emergency Public Information	10. Damage Assessment	11. Public Works and Engineering	12. Utilities	13. Resources Management and Supply	14. Transportation	15. Dead-Bodies Management
1. Dar es Salaam Regional Commissioner's Office	P	P	P					P	P	P	P		P	P	
2. Tanzania Police Force		P	P		P		P	S	P	S	S			P	P
3. Tanzania Fire and Rescue Force			S	P		S	P	S		S	S				
4. Tanzania People's Defense Force (TPDF)			S		S		S	S		S	S		S	S	
5. Tanzania Red Cross Society (TRCS)		S	S			S	S	P		P			P	S	S
6. Hospitals			P			P		P						P	P
7. Ambulance Services			P			P								P	
8. Tanzania National Roads Agency (TANROADS)			S							S	P				
9. Tanzania Electric Supply Company (TANESCO)				S				S		S		P			
10. Dar es Salaam Water and Sewerage Authority (DAWASA)								S		S					
11. Dar es Salaam Water and Sewerage Corporation (DAWASCO)								S		S		P			
12. Telephone Companies		S													
13. Tanzania Meteorological Agency (TMA)		P													
14. Media		S							P						
15. Tanzania Scouts Association			S	S	S		S	S						S	
16. Non-Governmental Organizations (NGOs) and Voluntary Organizations								S							
17. Faith-Based Organizations and Community-Based Organizations (CBOs)								S							
18. Municipal Councils		S	S		S	S		P		S		S	S		S
19. Public and Private Transport Agencies			S											S	
20. Private Sector				S			S			S	S				

Assessment Criteria

3.4.1 Awareness of the municipal officials of their primary and secondary roles and responsibilities during emergency response (these roles are as outlined in the 15 Emergency Response Functions contained within the DarMAERT Emergency Response Plan).

●	Level 1	Not at all
●	Level 2	Some are aware of their functions but do not know how their tasks will be implemented
●	Level 3	Many are aware of their functions but do not know how their tasks will be implemented
●	Level 4	Some are aware of their functions and how their tasks will be implemented
●	Level 5	Nearly all are aware of their functions and how their tasks will be implemented

Key activities and evidence

3.4 Emergency Response Functions

3.4.1 Complete a training, education and drills program by key municipal officials and all relevant stakeholders to test and understand primary and secondary functions of Municipal Councils in the DarMAERT ERP

3.5 Communication

Communication involves collecting, processing and disseminating official information about the emergency to have a coordinated and effective emergency response. Official information to be issued relates to the causes, effects and tasks performed while handling the emergency. The primary responsibility for communication lays with the Dar es Salaam Regional Commissioner's Office (RAS, Planning and Coordination Department and Regional Commissioner) as the lead agency. Secondary responsibility relies on TRCS, Media and Municipal Councils. The responsibility of the Municipal Councils is disseminating the official released warning instructions to the public through available communication means.

Assessment Criteria

3.5.1	Effectiveness in disseminating official warning instructions to the public through available communication means.	
	Level 1	No dissemination programs to release official warning instructions are in place
	Level 2	Dissemination programs are planned and will be in place within a year
	Level 3	Some dissemination programs are in place, but they are limited and ineffective in reaching the public
	Level 4	Some dissemination programs exist using some communication means and are able to reach most of the affected public
	Level 5	A variety of dissemination programs exist using multiple communication means and are able to reach all of the affected public

Key activities and evidence

3.5 Communication

- 3.5.1 Establish protocols and procedures and complete a training program in disseminating the official released warning instructions to the public through available communication means

3.6 Shelter and Mass Care

Shelter and Mass Care involves the necessary tasks for the assembly and operation of temporary shelter for people who had to be evacuated from the disaster area. It also entails family reunification and provision of emergency relief materials, food and psychosocial support.

The primary responsibility of shelter and mass care falls under the Dar es Salaam Regional Commissioner's Office (Health and Social Welfare Department, Infrastructure Department, Procurement Management Unit, Planning and Coordination Department and Department of Administration and Human Resources Management), which is the lead agency, Municipal Councils, Tanzania Red Cross Society and Hospitals.

The tasks outlined in the DarMAERT Response Plan for Municipal Councils with regards to the shelter and mass care function, include:

1. Planning and opening shelter facilities.
2. Constructing temporary shelters.
3. Managing and coordinating of shelter facilities.
4. Maintaining order and security
5. Supplying necessary equipment for running shelter facilities and mass care.
6. Handling logistics of relief items.
7. Providing water, sanitation and hygiene services.
8. Establishing preventive health services including control of communicable diseases in the shelters

Assessment Criteria

3.6.1 Effectiveness in establishing safe shelter facilities and preventive health services including control of communicable diseases in the shelters in the municipality.

●	Level 1	Planning and opening shelter facilities are not planned
●	Level 2	Shelters sites are planned but are not generally safe from floods and earthquakes
●	Level 3	Safe shelter facilities are planned but managing and coordinating shelter facilities is not coordinated
●	Level 4	Safe shelter facilities are planned and some coordination with other agencies to manage shelters
●	Level 5	Safe shelter facilities are planned, and standard operating procedures (SOPs) are established with other agencies to coordinate shelter management

3.6.2 Existence of plan to quickly establish mass care facilities to provide shelter, food, water and sanitation and handle logistics of relief items

●	Level 1	No plan in place
●	Level 2	Plans for establishing mass care facilities will be completed within a year
●	Level 3	Plan is in place but only addresses minor disaster events
●	Level 4	Plan is in place that addresses a large-scale event, but has not yet been proven effective through actual events or simulation exercises
●	Level 5	Plan is in place that addresses a large-scale event and has been proven effective through actual events or simulation exercises

3.6.3 Consideration of safety, security, and physical and mental health of women and children, as well as other vulnerable groups (e.g. health issues, disabled, elderly, migrants) in the mass care facilities (including evacuation centers).

●	Level 1	No, and no plans to improve in the next year
●	Level 2	No, but plans in place to improve mass care facilities within a year
●	Level 3	Some mass care facilities incorporate designs and management strategies to improve the safety, security and well-being of some vulnerable populations
●	Level 4	Nearly all mass care facilities incorporate designs and management strategies to improve the safety, security and well-being of some vulnerable populations
●	Level 5	Nearly all mass care facilities incorporate designs and management strategies to improve the safety, security and well-being of all vulnerable populations

Key activities and evidence

3.6 Shelter and Mass Care

- 3.6.1 Establish protocols and procedures to coordinate shelter management with other agencies
- 3.6.2 Establish a plan to provide shelter, food, water and sanitation and handle logistics of relief items
- 3.6.3 Establish a plan that includes safety, security, physical and mental health consideration of women and children, as well as other vulnerable groups in the mass care facilities

3.7 Evacuation

Evacuation deals with movement of people affected by the emergency and of those whose lives are potentially threatened by it, from the emergency area to a safer place. The evacuation emergency response function includes the definition of evacuation routes and methods, coordination of reception sites, and provision of return instructions. While this section primarily addresses government-organized evacuation, it should be noted that government-organized evacuation activities greatly influence self-evacuation by the public. For instance, government messages containing risk information, early warning, evacuation routes, shelter locations, etc. help to direct self-evacuation. Likewise, government activities such as traffic control or pre-disaster community evacuation exercises enhance self-evacuation. The primary responsibility for evacuation rests with the Tanzania Police Force, Dar es Salaam Regional Commissioner's Office (Regional Commissioner and Department of Administration and Human Resources Management), Ambulance Services and Hospitals.

On the other hand, secondary responsibility for evacuation function is performed by the Dar es Salaam Regional Commissioner's Office, Municipal Councils, Tanzania Fire and Rescue Force, TRCS, Tanzania People's Defense Force, Tanzania Scouts Association, Public and Private Transport Agencies and TANROADS. Dar es Salaam Regional Commissioner's Office is responsible for developing the evacuation plan with primary and alternative evacuation routes on map and activation of such a plan.

The tasks outlined for this function in the DarMAERT Emergency Response Plan by the Municipal Councils, include:

1. Developing the evacuation plan with primary and alternative evacuation routes on map and activation of such a plan together with the Regional Commissioner's Office.
2. Releasing evacuation information to the public, emphasizing on the need to evacuate.
3. Estimating the number of people to be evacuated and identifying means to transport them.
4. Assisting in evacuating the most vulnerable groups of the population, such as the elderly, children, pregnant women and people with disabilities.
5. Protecting property in evacuated areas and limiting access to them (related task from Law Enforcement Emergency Support Function)

Assessment Criteria

3.7.1	Effectiveness of the evacuation implementation by the municipality in past disaster events.	
	Level 1	Evacuations were very ineffective
	Level 2	Little information was collected to evaluate the effectiveness of evacuations
	Level 3	Evacuations were not well planned or there were major issues in the implementation
	Level 4	Evacuations were well planned and smoothly executed, but still resulted in low rates of evacuation among target at-risk population
	Level 5	Evacuations were thoroughly planned, smoothly executed and high rates of evacuation among targeted at-risk populations were achieved
3.7.2	Effectiveness of evacuation plans and procedures to meet the needs of vulnerable populations.	
	Level 1	No plans in place
	Level 2	Plans in place but do not identify vulnerable groups
	Level 3	Plans are in place which identify vulnerable groups, through quantification and/or mapping, but do not contain specific procedures for meeting the needs of vulnerable populations
	Level 4	Vulnerable populations have been quantified and mapped and evacuation procedures have been established to meet some of their needs
	Level 5	Vulnerable populations have been quantified and mapped and evacuation procedures have been established to meet all of their needs
3.7.3	Effectiveness in estimating the number of people to be evacuated and identifying areas where evacuation may occur based on past events and risk studies	
	Level 1	Evacuation quantities and/or areas are not understood
	Level 2	Evacuation quantities and areas have been identified but these are not based on reliable studies
	Level 3	Evacuation areas identified, based on reliable studies, built are not accounted for in evacuation procedures
	Level 4	Evacuation quantities and locations are based on reliable studies and evacuation procedures have been developed to somewhat address the estimated evacuation quantities and locations.
	Level 5	Evacuation quantities and locations are based on reliable studies and evacuation procedures have been customized to fully account for these estimated evacuation quantities and locations.

Key activities and evidence

3.7 Evacuation

- 3.7.1 Develop an evacuation plan for the municipality based on existing risk studies & that target at-risk populations and vulnerable groups and includes emergency
- 3.7.2 procedures to meet their needs

3.8 Health and Medical Services

Health and Medical Services involves mobilization and management of health and medical services during the emergency. It involves providing treatment, stabilization and care for those injured at the scene (pre-hospital care), as well as hospital care after their transfer to the health facilities. Likewise, it entails medical transfer and referral services, psychosocial support, epidemiological observation, and transport of medical staff, resources and equipment. The primary responsibility for health and medical services rests with hospitals and ambulance services.

Secondary responsibility for health and medical services function lies with the Tanzania Fire and Rescue Force, TRCS and Municipal Councils. The Municipal Councils perform the following activities for this function according to the DarMAERT ERP:

1. Coordinating deployment of health/medical personnel, drugs, equipment, and supplies at the disaster site, and/or retaining them at the hospital for the incoming patients.
2. Providing psychosocial support to the traumatized population.

A related Emergency Support Function to Health and Medical Services in the DarMAERT ERP is Dead-Bodies Management, which is the management of dead people resulting from an emergency. This includes their identification, investigation on the reasons for the death and burial of bodies that could not be identified or pose a health risk; as well as the installation and management of mortuaries.

The primary responsibility for dead-bodies management lays with Hospitals (lead agency) and Tanzania Police Force. The secondary responsibilities are carried out by the TRCS and Municipal Councils. The Municipal Councils perform the following tasks:

1. Establishing temporary mortuary at a designated site for caring of human remains.
2. Consolidating information on deaths.
3. Locating and notifying relatives.
4. Conducting burial of unidentified bodies or of those who pose a health risk.

Assessment Criteria

3.8.1 Effectiveness of the primary agencies for deployment of Health and Medical Services agencies (Hospitals and Ambulance Services) in your municipality during a disaster.

●	Level 1	Hospitals and ambulance services in my municipality cannot respond effectively to even minor events
●	Level 2	Some hospitals and ambulance services in my municipality can effectively respond to minor events
●	Level 3	Most hospitals and ambulance services in my municipality can effectively respond to minor events
●	Level 4	Some hospitals and ambulance services in my municipality have the resources and are ready to effectively respond to a major disaster
●	Level 5	All hospitals and ambulance services in my municipality have the resources and are ready to effectively respond to any major disaster

3.8.2 Effectiveness in coordinating deployment of health/medical personnel, drugs, equipment, and supplies at the disaster site, and/or retaining them at the hospital for incoming patients.

●	Level 1	Municipality currently does not coordinate the deployment of health and medical services
●	Level 2	Mechanisms for coordinating deployment of health and medical services will be established within a year
●	Level 3	Some coordination has occurred, but it was ineffective
●	Level 4	Effective coordination with relevant agencies has enhanced deployment of health and medical services in some instances
●	Level 5	Effective coordination with relevant agencies has enhanced deployment of health and medical services in most instances

3.8.3 Availability of standard operating procedures for consolidating information on deaths, locating and notifying relatives, establishing temporary mortuary and conducting burial at a designated site for caring of human remains.

●	Level 1	Municipality does not have standard operating procedures for Dead-Bodies Management
●	Level 2	Standard Operating Procedures for Dead-Bodies Management will be established within a year
●	Level 3	Standard Operating Procedures for Dead-Bodies Management exist, but require improvement to address the tasks Municipal Councils are responsible for
●	Level 4	Standard Operating Procedures for Dead-Bodies Management exist, and address most instances for which Municipal Councils are responsible for
●	Level 5	Standard Operating Procedures for Dead-Bodies Management exist, and address all instances for which Municipal Councils are responsible for

Key activities and evidence

3.8 Health and Medical Services

- 3.8.1 Develop protocols and procedures in coordinating deployment of Health and Medical Services agencies (Hospitals and Ambulance Services) in your municipality during a disaster.
- 3.8.2 Develop protocols and procedures in coordinating deployment of Health and Medical personnel, drugs, equipment, and supplies at the disaster site, and/or retaining them at the hospital for incoming patients.
- 3.8.3 Develop protocols and procedures in consolidating information on deaths, locating and notifying relatives, establishing temporary mortuary and conducting burial at a designated site for caring of human remains.

3.9 Utilities

Utilities as a response function is related to the implementation of alternative measures to provide electricity, gas, clean water and wastewater services, as well as restoring these services and their infrastructure in times of an emergency.

The primary responsibility rests with utility companies like TANESCO and DAWASCO that provide electricity and water supply services, respectively.

Secondary responsibility falls under Private Utilities, Tanzania Fire and Rescue Force and Municipal Councils.

According to the DarMAERT ERP Municipal Councils are charged with arranging the provision of emergency water supply from other sources to hospitals, emergency shelters, other critical facilities and people.

- 3.9.1** Availability of contingency plans of key service providers in Dar es Salaam (transport, water, power, communication, health, education, etc.) for continued service delivery during and/or after major disasters such as floods?

●	Level 1	Little or no contingency plans in place
●	Level 2	Contingency plans for the provision of emergency water supply to critical facilities are being developed within a year
●	Level 3	Contingency plans exist but are missing risk data, implementation details or potential hazard scenarios
●	Level 4	Contingency plans incorporate risk data, detail implementation requirements and address most critical facilities for recurring hazard scenarios
●	Level 5	Contingency plans incorporate risk data, detail implementation requirements and address all critical facilities and affected population in the municipality for a wide range of hazard scenarios

Key activities and evidence

3.9 Utilities

- 3.9.1 Develop protocols and procedures in coordination with key service providers in Dar es Salaam for delivery of emergency water supply to hospitals, emergency shelters, other critical facilities and people

Tools and Resources

DarMAERT Emergency Response Plan (October 2017)

Emergency Response Plan for the Dar es Salaam region developed through a consultative and collaborative process that involved most DarMAERT members and was conducted between April 2016 and June 2017.

Tanzania Emergency Preparedness and Response Plan (DMD, January 2012)

TEPRP describes the disaster situation and planning assumptions, concept of operations, response and recovery actions, organizational and specific assignments of responsibilities to the departments and government agencies tasked with local response efforts. The TEPRP conforms to the Disaster Relief Coordination Act, No. 9, of 1990 and the National Operational Guidelines for Disaster Management (NOG). The TEPRP has three main components namely: Basic plan, Functional Annexes, and Appendices.

Incident Command System Basics - Emergency Management Institute (FEMA) -

<https://training.fema.gov/emiweb/is/icsresource/index.htm>

SPHERE Handbook - 2018 Addition -

<https://spherestandards.org/wp-content/uploads/Sphere-Handbook-2018-EN.pdf>

United Nations Cluster Approach (UNHCR) -

https://emergency.unhcr.org/entry/41813?lang=en_US

Emergency Management Accreditation Program -

<https://www.emap.org/>

International Association of Emergency Managers -

<https://www.iaem.org/>

International Organization for Standardization - Security and resilience -- Emergency management -- Guidelines for incident management -

<https://www.iso.org/standard/67851.html> (requires payment but good overview)



COMPONENT

INFRASTRUCTURE AND SERVICES

Critical infrastructure includes physical systems and services that are required for the operation of the city and crucial for emergency response. As such, special attention must be paid to their safety and risk reduction efforts must focus on ensuring they can continue providing services when most needed.

This component measures the resiliency of critical physical infrastructure systems. Physical infrastructure required for city operation may include but is not limited to transport (roads, rail, airports and other ports), vehicle and heating fuel suppliers, telecommunication systems, and utilities systems.

It also defines indicators and assessment criteria to measure the resilience of critical services. Typically, this includes housing and shelter, hospitals and healthcare facilities, water and sanitation, educational institutes and school facilities, food supply chain, police and fire services, etc. They also carry out essential functions during and after a disaster, where they are likely to provide recovery and relief and overlap with the

Emergency Management component. *Global policies on disaster risk reduction and resilience emphasize that resilience of Basic Infrastructure and Services (BIS) should be a high priority of governments. For instance, Target D of the Sendai Framework aims at “substantially reduce disaster damage to critical infrastructure and disruption of basic services and increasing and developing their resilience by 2030. It refers to critical infrastructure in Priority for Action 4 as accounting for “water, transportation and telecommunications infrastructure, educational facilities, hospitals, and other health facilities”, which provide services that are essential to the social and economic functioning of a community or society”.*

Furthermore, Sustainable Development Goals (SDG) 9 aims to “develop quality, reliable, sustainable, and resilient infrastructure in order to support community well-being with focus on affordable and equitable access for all”. Similarly, the New Urban Agenda (NUA) sets BIS as one an important lever for the NUA that act as operational enablers in formation of an adaptable and transformative urban planning and development.

4.1 Critical Infrastructure Assessment

Assessment of the capacity and adequacy of critical infrastructure:

- Assess “surge” capacity – ability to deal with suddenly increased loadings during an emergency from casualties, evacuees, and so on;
- Consider possible damage to parallel infrastructure. For example, impact on evacuation capacity if one of two roads out of a city is blocked;
- Take into account linkages between different systems. For example, impact when a hospital loses its power or water supply.

Assessment Criteria

4.1.1 Sufficiency of data on critical infrastructure.

	Level 1	Not at all
	Level 2	Data is available but not up-to-date
	Level 3	Up-to-date data on critical infrastructure is available, but missing key details
	Level 4	Up-to-date data on some critical infrastructure available, including original construction, modification, maintenance and inspection details
	Level 5	Up-to-date data for all critical infrastructure available, including original construction, modification, maintenance and inspection details

4.1.2 Access to critical services (water, healthcare, sanitation, transportation, education, telecommunications) following a major disaster such as a flood or earthquake.

	Level 1	Many critical services will not be accessible, with little to no contingency plans in place
	Level 2	Many critical services will not be accessible, but there are contingency plans in place
	Level 3	Most critical services can be accessed. Some will not be accessible, but there are contingency plans in place.
	Level 4	All critical services, in theory, can be accessed in the event of a major disaster, but this remains untested.
	Level 5	All critical services can be accessed in the event of a major disaster. This has been tested through either real events or simulations.

4.1.3 Identification of potential disaster impacts to critical infrastructure, such as physical damage, service disruptions and recovery time.

	Level 1	Not at all
	Level 2	No, but plans in place to assess potential disaster impacts on critical infrastructure within a year
	Level 3	Potential impacts to critical infrastructure have been identified, but only for some hazard scenarios
	Level 4	Potential impacts from a wide variety of hazard scenarios have been identified for some critical infrastructure
	Level 5	Potential impacts from a wide variety of hazard scenarios have been identified for all critical infrastructure

Key activities and evidence

4.1 Critical Infrastructure Assessment

- 4.1.1 Create a comprehensive inventory or map of all critical infrastructure located within your municipality.
- 4.1.2 / 4.1.3 Carry out assessments to identify gaps and list priority services and operations during and after a disaster;

4.2 Critical Infrastructure Plan

- Prepare and implement a critical infrastructure plan or strategy to protect critical infrastructure, utilities and services.
- Manage continuity plans for the provision of critical services.
- Promote a shared understanding of the risks between city and various utility providers of the points of stress on infrastructure systems and risks at the city scale.

Assessment Criteria

- 4.2.1** Capacity of municipal government to carry out large scale damage and needs assessments following a major flood or a potential earthquake with focus on the needs of vulnerable populations (isolated or injured individuals, persons with disabilities, women, children, elderly, marginalized groups).

	Level 1	Not at all
	Level 2	No, but plans in place to improve capacity within a year
	Level 3	Capacity to implement small-scale post disaster needs assessments
	Level 4	Capacity to implement a post-disaster needs assessment for major disaster events, but not covering all critical needs
	Level 5	Capacity to implement a post-disaster needs assessment for major disaster events, covering all critical needs

- 4.2.2** Ability of municipality to acquire, store and distribute food, water and medical supplies immediately after a major disaster.

	Level 1	Logistics would be devastated by a major disaster and we would not be able to deliver sufficient levels of food, water and medical supplies for weeks or more
	Level 2	Logistics would be greatly disrupted by a major disaster and we would not be able to deliver sufficient levels of food, water and medical supplies for a week
	Level 3	Logistics system would be disrupted by a major disaster, but delivery of sufficient levels of food, water and medical supplies could be achieved within days
	Level 4	Logistics system would be disrupted by a major disaster, but delivery of sufficient levels of food, water and medical supplies could be achieved within 24 hours
	Level 5	Logistics system would be disrupted by a major disaster, but delivery of sufficient levels of food, water and medical supplies could be achieved within hours

4.2.3 Availability of a detailed plan for the operation and maintenance of infrastructure assets.

	Level 1	Not at all
	Level 2	Plan will be completed within a year
	Level 3	A plan exists but does not layout effective procedures for the operation and maintenance of assets
	Level 4	An effective plan exists which identifies procedures for the operation and maintenance of some critical assets
	Level 5	An effective plan exists which identifies detailed procedures for the operation and maintenance of all critical assets

4.2.4 Level of understanding of the municipal government and utility providers' operational capabilities and resources available to restore infrastructure after disruption.

	Level 1	No shared understanding at all
	Level 2	None right now, but an assessment of response capacity will be completed within a year
	Level 3	General response capacity is understood, but not specific details such as total personnel, equipment, response time and estimated speed of recovery
	Level 4	For some critical infrastructure, response capacity has been quantified in terms of personnel, equipment, response time and estimated speed of recovery
	Level 5	For all critical infrastructure, response capacity has been quantified in terms of personnel, equipment, response time and estimated speed of recovery

Key activities and evidence

4.2 Critical Infrastructure Plan

- 4.2.1 - *Prepare and implement a municipality-wide critical infrastructure plan or strategy to*
 4.2.2 *protect critical infrastructure, utilities and services.*

4.3 Critical Infrastructure Strengthening

Strengthen/retrofit the vulnerable infrastructure

- Start systematic triaged processes for prioritization of retrofit or replacement of unsafe infrastructure;
- Liaise with, and build connections between infrastructure agencies (including those that may be in the private sector) to ensure resilience is considered appropriately in project prioritization, planning, design, implementation and maintenance cycles;
- Carry out procurement processes that includes resilience criteria agreed upon by the city and stakeholders and is consistent throughout.
- Sufficiently invest in the maintenance and upgrade of critical infrastructure.
- Ensure that protective/risk mitigating infrastructure (e.g. flood defenses, seismic designs) is in place where needed and are properly maintained.

- Supervise to ensure that existing, protective infrastructure is well-designed and well-built, based on risk information.

Sendai on strengthening critical infrastructure

To strengthen, as appropriate, disaster-resilient public and private investments, particularly through structural, non-structural and functional disaster risk prevention and reduction measures in critical facilities, in particular schools and hospitals and physical infrastructures; building better from the start to withstand hazards through proper design and construction, including the use of the principles of universal design and the standardization of building materials; retrofitting and rebuilding; nurturing a culture of maintenance; and taking into account economic, social, structural, technological and environmental impact assessments (SFDRR, 30c)

Assessment Criteria

- 4.3.1** Status of improvement of critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities) to better withstand hazards (i.e., flooding and earthquakes) impacts.

●	Level 1	Critical infrastructure has not been identified
●	Level 2	The majority of critical infrastructure is designed without incorporating disaster mitigation measures
●	Level 3	The majority of critical infrastructure is designed to incorporate disaster mitigation measures, but mitigation measures are insufficient
●	Level 4	The majority of critical infrastructure is designed to incorporate disaster mitigation measures
●	Level 5	Nearly all critical infrastructure is designed to incorporate disaster mitigation measures

- 4.3.2** Existence of flood control measures (drainage upgrades, river training, water retention, coastal protection, erosion management, reforestation) in municipality.

●	Level 1	Little or no flood control measures in place
●	Level 2	Flood control measures exist but they are ineffective in controlling even minor floods
●	Level 3	Measures are in place to effectively control minor flooding
●	Level 4	Measures are in place for minor flooding and to partially mitigate against major flooding
●	Level 5	Measures are in place that completely mitigate against minor and major flooding

4.3.3 Existence of seismic strengthening measures for buildings and infrastructure.

●	Level 1	Little or no measures in place
●	Level 2	Measures exist but they are ineffective in mitigating against seismic hazards
●	Level 3	Effective measures exist but implementation is limited
●	Level 4	Widespread implementation of measures which effectively protect against minor seismic events
●	Level 5	Widespread implementation of measures which effectively protect against major seismic events

4.3.4 Extent to which new housing development projects and existing housing improvement projects incorporate DRM strategies to better withstand hazard impacts.

●	Level 1	Not at all
●	Level 2	Strategies will incorporate DRM strategies within a year
●	Level 3	Projects incorporate some DRM strategies, but they are ineffective in mitigating against hazard impacts
●	Level 4	Projects incorporate DRM strategies and have somewhat improved the ability of housing to withstand disaster impacts, though climate change impacts may not be considered
●	Level 5	Projects incorporate DRM strategies and have greatly improved the ability of housing to withstand disaster impacts. Climate change impacts have also been considered

Key activities and evidence

4.3 Critical Infrastructure Strengthening

- 4.3.1 - Develop policies, protocols and strategies to enable the monitoring, maintenance
4.3.4 and upgrade of drainage infrastructure (taking into account climate change).

4.4 Public Private Partnerships

Establish alliances with key agencies and the private sector to build capacity with partners to carry out risk and vulnerability assessments, and scientific monitoring, expanding governance capacities for disaster risk management through multi-sector, multi-disciplinary platforms, involving local stakeholders in decision-making.

4.4.1 Status of partnerships with key agencies and private sector to enhance capacities of municipal councils, carry out risk and vulnerability assessments, and scientific monitoring.

	Level 1	Little or no partnerships in place
	Level 2	Partnerships do not currently exist but are being planned within a year
	Level 3	Partnerships programs exist, and are used to address some basic gaps
	Level 4	Partnerships programs are established, somewhat enhancing capacities of municipal councils to carry out risk and vulnerability assessments, and scientific monitoring
	Level 5	Partnerships programs are fully established across a wide group of private and government partners, greatly enhancing capacities of municipal councils to carry out risk and vulnerability assessments, and scientific monitoring

Key activities and evidence

4.4 Public Private Partnerships

4.4.1 *Establish alliances with key agencies and the private sector to build capacity with partners to carry out risk and vulnerability assessments, and scientific monitoring*

4.5 Social Protection Programs

Social protection can help in building disaster resilience through regular, well-targeted programs with adequate benefits before disasters, and delivering timely, efficient assistance to protect well-being, after disasters.

The country has a number of microfinance and social protection schemes. The Tanzania Social Action Fund (TASAF) is organized in a decentralized manner to facilitate greater autonomy and empowerment to local government structures focusing on most vulnerable groups. TASAF work in collaboration with Local Government Authorities, NGOs and CBOs to provide financing for small scale public investments targeted at meeting the needs of the poor and vulnerable communities, and at contributing to social capital and development at the local level. It facilitates improvement in the socio-economic infrastructure, enhances capacity and skills among the rural and peri-urban communities and creates a safety net for the poorest section of the community through cash transfer arrangements that require people to participate in public works.

Social security systems in Tanzania fall into two main groups, namely, non-formal and formal social security. Informal social security schemes ranges from tribal associations; Chama cha kufa na kuzikana, associations concerning with death and burial affairs; Jumuia, (religious groups formed by people who belong to the same denomination); community- based organizations and UMASIDA (a mutual health insurance in Dar es Salaam). These are the ones easily accessible by vulnerable communities.

Challenges and Constraints with Social Protection in Tanzania

Unclear institutional arrangement, lack of fund and poverty hinder communities from accessing social security services. Poverty at family level continues to deny children with basic needs e.g., education, health and safety needs.

Improving the socio-economic conditions of vulnerable groups and communities is a concern by both government and its development partners. Therefore, government is incorporating risk management and reduction initiatives in various programs as emphasized by both the Sustainable Development Goals (Goal 1) and the Sendai Framework for Disaster Risk Reduction (SFDRR). There are existing efforts to institutionalize the social protection arrangements for vulnerable groups to enable them to have better livelihoods.

With regard to social services provision, focus will continue to be directed to enhance both quantity and quality of services with the adoption of the public private partnership. Efforts to institutionalize the social protection arrangements will also be adhered while considering the vulnerable groups.

Source: Adapted from the HFA Tanzania National Progress Report, 2011-2013

Assessment Criteria

- 4.5.1** Social development policies and social protection programs are being implemented for poor and vulnerable communities to provide access to basic needs such as food, water, shelter and healthcare in your municipality.

Additional Information:

Consider if social protection programs exist for poor and vulnerable populations in your municipality to ensure access to basic needs such as food and non-food items, drinking water, shelter and healthcare.

●	Level 1	Little or no social protection programs in place
●	Level 2	Social protection programs exist but are difficult to access
●	Level 3	Social protection programs are simple to access but only cover some basic needs
●	Level 4	Social protection programs are simple to access, address each basic need, but cannot serve all populations in need
●	Level 5	Social protection programs are simple to access, address each basic need, and serve all populations in need

4.5.2 Social protection programs are being implemented for poor and vulnerable populations to ensure access to financing.

Additional Information:

Consider if social safety nets exist to increase the resilience of risk prone households and communities. Examples are: crop and property insurance, conditional and unconditional cash transfers, temporary employment guarantee schemes, micro finance (savings, loans, etc.) or micro insurance. This can be through Village Community Banks, informal rotating credit associations (upatu) and ujirani mwema community groups for instance in your municipality.

●	Level 1	Little or no social protection programs in place
●	Level 2	Social protection programs exist but are difficult to access
●	Level 3	Social protection programs are simple to access but financing available is very low
●	Level 4	Social protection programs are simple to access, with adequate financing available, but cannot serve all populations in need
●	Level 5	Social protection programs are simple to access, with adequate financing available and serves all populations in need

4.5.3 Existence of policies that allow for temporary scaling up of social protection programs to complement response and recovery in disasters.

Additional Information:

Consider if existing and new social protection programs in your municipality are designed to promote community resilience and can be scaled up for rapid response and recovery. These guiding questions can be used as discussion and evidence for determining the appropriate performance level in your municipality: Do programs ensure coverage of the poorest individuals and those most vulnerable to disasters? Do programs build assets for community resilience by integrating the programs with action plans for climate change adaptation and other disaster risk management activities? Do programs have rules for horizontal and vertical expansion and establishing mechanisms to trigger scaling-up, for example by linking to early warning system?

●	Level 1	Little or no social protection programs in place
●	Level 2	Social protection programs in place but are not adaptive and cannot be scaled up for rapid response and recovery.
●	Level 3	Social protection programs will be established within a year to be more adaptive and can be scaled up for rapid response and recovery
●	Level 4	Social protection programs are in place and are somewhat adaptive and scalable for rapid response and recovery
●	Level 5	Social protection programs are in place with well-established mechanisms to trigger scaling up for rapid response and recovery.

Key activities and evidence

4.5 Social Protection Program

Develop a policy framework and strategies to promote adaptive social protection in your municipality that provide access to basic needs (4.5.1) and financing (4.5.2) to the poorest and most vulnerable population in your municipality, and can be scaled up for rapid humanitarian response and recovery (4.5.3).

Guidance Note: Policy framework should ideally be established based on a social registry of uniquely identified households and their members, that contains disaggregated socio-economic and spatial data, building on existing data. The registry can help determine the eligibility of individuals or households for multiple programs and identify those most vulnerable. Ensure interoperability between the social registry and beneficiary databases of various social protection programs in your municipality through the use of a unique identification number. Further develop early warning information systems to inform planning for early response.



Tools and Resources

[The Hospital Safety Index – Pan American Health Organization \(2008\)](#)

A low-cost reliable tool, providing decision makers with an overall idea of a hospital's ability to remain functioning in emergencies and disasters. Manual and forms for assessing safety.

[UNDRR Safe Hospitals Campaign: 10 Basic Facts to Know – WHO, World Bank \(2008\)](#)

Ten things to keep in mind about the importance of critical facilities such as hospitals in disaster situations.

[One Million Safe Schools and Hospitals: Assessment and Mitigation Planning for Risk Reduction – UNDRR and partners](#)

An advocacy initiative encouraging communities, organizations and individuals to make a commitment to taking action on making schools and hospitals safer (search under Information Materials for tools)

[Guidance Notes on Safer School Construction – UNDRR, INEE, World Bank](#)

Guiding principles and general steps to develop a plan for disaster-resilient construction and retrofitting of schools.

[Adaptive Social Protection for Effective Disaster Risk Management \(World Bank, 2018\)](#)

Guiding principles for strengthening linkages between social protection and disaster risk management for adaptive social protection based on context in Nepal



COMPONENT

5

TRAINING
AND
CAPACITY
BUILDING

The development and strengthening the capacity of of the Municipal Councils, the institutions and in particular the communities in the municipalities, can systematically contribute to building resilience to hazards and climate impacts.

This component measures the capacity for disaster risk management of Municipal Councils and communities as well as processes for knowledge management and public education and awareness.

As such, the capacity building component is a cross-cutting component, which deals with the knowledge-transfer across various areas of the DRMI. In particular, this component evaluates the availability of training programs and incentives to build the capacity for DRM of the municipal officials.

A key focus in also to examine the various knowledge-sharing mechanisms and activities by the Municipal Councils that mainstream and scale up climate risk management practices, including community-driven activities.

Finally, this component targets advocacy programs and public education campaigns.

DRM Training in Dar es Salaam

Ardhi University have established undergraduate and postgraduate degree programs on disaster management respectively. DRM is included in curriculum in some of the Universities (e.g., UDSM and MUHAS) on which disasters are offered as optional courses. Education in Emergencies (EiE) has been made for Education Focal points in some identified districts where DRM has been mainstreamed and capacity building interventions done. The Resilience Academy currently being developed by DFID, Turku University in Finland and the World Bank offers trainings in different areas of DRM, including a Training, Education and Drills (TED) program on emergency preparedness and response that includes the DRM focal points of the municipalities.

5.1 Availability of Training

This indicator targets the following key questions:

- Is training generally available for technical and non-technical staff for a wide range of public and private institutions to build their capacity to manage disaster risk?
- Is funding available for staff to undertake training of municipal officials, where appropriate?
- Are there professional incentives (e.g., faster advancement) available for staff who complete disaster risk reduction training?

Guiding Principles for Building Capacity, Competencies and Training

- Commitment to establish minimal level training provision in order to offer mandatory regulatory commitments at the very least, including budgetary resourcing.
- Minimum capacity requirement to have training allocated as a key responsibility among management of Municipal Councils.
- Training responsibility incorporated into any dedicated and formal DRM or Emergency Response Plan of the respective Municipality as a key principle so that training is part of integrated municipal disaster planning and management.
- Establishment of budgetary resources to facilitate emergency management training as regular activity for municipal staff.
- Recognition of principle of meeting the training needs of all staff, including permanent, temporary and subcontracted staff
- Reviews of Training commitment and provision formally on an ongoing basis.

Assessment Criteria

5.1.1 Identification of priorities, capacities and needs for Disaster Risk Management (DRM) training.

Additional Information:

A capacity and training needs assessment is designed to assess individual capacity gaps of municipal officials dealing with Disaster Risk Management so training and development plans can then be prepared to address them. A capacity gap can be defined as a significant disparity between the Municipal Council's goals and objectives for strengthening its Disaster Risk Management capacities and its actual or potential ability to achieve its DRM objectives (as expressed in local Disaster Risk Management Plan). The assessment results of the DRMI can be used to as an initial capacity and needs assessment for where the existing capacity gaps exist (e.g. emergency response planning, land-use planning, social assistance, risk assessments, etc.).

	Level 1	Not at all
	Level 2	General understanding of training needs but no full training needs assessment
	Level 3	Detailed training needs assessment will be completed within a year
	Level 4	Detailed training needs assessment has been completed but does not address all DRM areas (mitigation, preparedness, response and recovery)
	Level 5	Detailed training needs assessment has been completed and covers all DRM areas (mitigation, preparedness, response and recovery)

5.1.2 Extent to which municipal officers have completed DRM training.

Additional Information:

The level of depth of training and relevance of the training program to the identified capacity gaps and priorities should be used to guide the rating of this criteria. Evidence from the validation of the DRMI was also apparent encapsulating a preference that a minimum level of staff training on Disaster Risk Management concepts should be embedded 'horizontally' across the entire staff base of hotels and resorts, as well as 'vertically' across the hierarchy of management structures of respective Municipal Councils.

	Level 1	Not at all
	Level 2	Municipal officers will be trained within a year
	Level 3	Some municipal officers trained
	Level 4	Most municipal officers have received general training with some evidence of improved staff capacity
	Level 5	Most municipal officers have received in-depth training with substantial evidence of improved staff capacity

5.1.3 Status of briefing of non-emergency management staff (e.g. planners, engineers, architects, lawyers, etc.) on their potential role and contribution to a disaster response.

●	Level 1	Not at all
●	Level 2	No, but plans in place to brief all relevant non-emergency management staff within a year
●	Level 3	Non-emergency management staff are briefed on their emergency roles, but this is done in an informal way
●	Level 4	Non-emergency management staff are briefed on their emergency roles, through a formal process, but limited in detail or in departments involved
●	Level 5	Non-emergency management staff are briefed on their emergency roles, through a formal process that outlines specific details and covers a wide range of departments

5.1.4 Availability of funding for disaster risk reduction training.

Additional Information:

Are there professional incentives available for staff who complete disaster risk reduction training? Some key training incentives to consider include:

- Career ladder advancement;
- Offering degree courses or certifications;
- Linking DRM training to local or professional priorities since disasters are typically not a high-priority concern; connecting DRM to skills which are in high demand;
- Encouraging innovation - combining specialist disaster management knowledge with softer skills training will facilitate innovative disaster management at times of crisis.

●	Level 1	No incentives in place
●	Level 2	Incentives are being established within a year
●	Level 3	Incentives are not worth the time and effort to complete training
●	Level 4	Incentives have proven to be somewhat effective in promoting training
●	Level 5	Incentives have proven to be very effective in promoting training

5.1.5 Availability of funding for disaster risk reduction training.

●	Level 1	No funding
●	Level 2	Funding exists, but covers less than 25% of our disaster risk reduction training needs
●	Level 3	Funding exists, but only covers 25 - 50% of our disaster risk reduction training needs
●	Level 4	Funding exists, which covers 50 - 75% of our disaster risk reduction training needs
●	Level 5	Funding exists, which covers 75 - 100% of our disaster risk reduction training needs

Key activities and evidence

5.1 Availability of Training

Municipal DRM Training Plan: Develop a DRM training plan which is based on a training needs assessment that prioritizes DRM training in high-priority capacity gaps (5.1.1) and measures the reach and effectiveness of existing training programs (5.1.2 and 5.1.3). The DRM training plan should also document a strategy on various training incentives, as appropriate (5.1.4) and resource needs (financial, human resources, etc.) for implementation of training program.

5.2 Drills and Response Simulations

Disaster response plans need to be tested through drills and simulations. Such exercises may range from paper-based tabletop scenarios to a full-scale multi-agency functional response. Scenarios may focus on a specific hazard, multiple hazards or cascading disaster event. The objective of drills and simulations are to:

- Familiarize participants with their disaster response roles and functions
- Practice and assess response plans, policies and procedures
- Confirm response plan assumptions
- Test individual and overall response capacity and performance
- Identify resource gaps and disaster planning, preparedness and response needs

Assessment Criteria

5.2.1 Implementation of regular disaster preparedness and response simulation exercises in the municipality.

●	Level 1	Disaster simulation exercises are not conducted
●	Level 2	Disaster exercises will be conducted within a year
●	Level 3	Disaster exercises are conducted but are ineffective at improving capacity
●	Level 4	Effective disaster exercises are implemented on a regular basis, but do not address all relevant hazards or are limited in their ability to target vulnerable populations
●	Level 5	Effective disaster exercises are implemented on a regular basis for all relevant hazards and targeting a wide range of vulnerable populations

5.2.2 Level of participation of government, emergency services, civil society and the public in disaster preparedness and response simulation exercises.

●	Level 1	Disaster simulation exercises are not conducted
●	Level 2	Stakeholders take part in exercises but not in an effective way
●	Level 3	Some stakeholders regularly take part in exercises
●	Level 4	All relevant stakeholders regularly take part in annual suite of drills, and the drills are broadly thought to be realistic
●	Level 5	All relevant stakeholders regularly take part in annual suite of drills, validated by professionals to be realistic representation of “most severe” and “most probable” scenarios

5.2.3 Effectiveness of disaster exercises in improving emergency staff skills and strengthening disaster plans.

●	Level 1	Disaster exercises are not conducted
●	Level 2	Disaster exercises are conducted but do not result in an observable improvement to skills or disaster plans
●	Level 3	Disaster exercises are conducted but skills of staff and improvement to disaster plans are not documented and evaluated
●	Level 4	Disaster exercises are conducted, skills of some participants are improved, and disaster plans have been strengthened in some areas
●	Level 5	Disaster exercises are conducted, skills of nearly all participants are improved and disaster plans have been strengthened throughout

Key activities and evidence

5.2 Drills and Response Simulation

- 5.2.1- Implementation of Training, Education and Drills program in the municipality to
5.2.3 improve emergency staff skills, strengthen disaster contingency plans and includes participation of government, emergency services, civil society and the public in disaster preparedness and response simulation exercises.

5.3 Knowledge-Sharing

The variety of stakeholders responsible for DRM in the different municipalities can become critical resources for capacity building. Mechanisms are required to collect and foster expert knowledge, experience and skills, and share it among different municipalities.

Assessment Criteria

5.3.1 Frequency of sharing DRM knowledge and experience with other municipalities.

- | | | |
|---|---------|--|
|  | Level 1 | No activities are being carried out to promote mutual learning of DRM information |
|  | Level 2 | Only informal activities are being undertaken to promote mutual learning |
|  | Level 3 | Some formal activities to promote mutual learning but limited success in enhancing knowledge |
|  | Level 4 | Some formal activities to promote mutual learning with proven success in enhancing knowledge |
|  | Level 5 | Many formal activities to promote mutual learning with proven success in enhancing knowledge |

5.3.2 Inclusion of a wide range of municipal staff and service areas in mutual learning activities within your municipality (i.e., exchange of lessons learned, good practices and information).

- | | | |
|---|---------|---|
|  | Level 1 | No or no activities undertaken |
|  | Level 2 | Range of stakeholders will be included in mutual learning activities in the next year |
|  | Level 3 | Different stakeholders are sometimes included but there are no mechanisms to ensure participation |
|  | Level 4 | Mechanisms in place to encourage a wide range of staff and service areas to participate in lessons learned activities, but participation is often low |
|  | Level 5 | Mechanisms in place to ensure a wide range of staff and service areas participate in lessons learned activities, with typically high participation |

5.3.3 Effectiveness of cooperation of municipal council with research institutions or other agencies to improve skills or knowledge in DRM.

●	Level 1	No cooperation programs in place
●	Level 2	Cooperation programs will be established within a year
●	Level 3	Cooperation programs are in place but do not effectively improve capacity in DRM
●	Level 4	Cooperation programs are in place and have somewhat improved capacity in DRM
●	Level 5	Cooperation programs are in place and have greatly improved capacity in DRM

Key activities and evidence

5.3 Knowledge-Sharing

- 5.3.1 Develop and implement DRM knowledge sharing program and activities with other municipalities.
- 5.3.2 Promote DRM knowledge sharing program and activities to include a wide range of municipal staff and service areas in mutual learning activities
- 5.3.3 Establish cooperation with research institutions or other agencies to improve skills or knowledge in DRM.

5.4 Advocacy

Advocacy involves persuading individuals to act in a certain way. The goal of public advocacy programs in DRM is to empower the public with DRM knowledge so that they will make better decisions when preparing for or responding to potential hazard.

Assessment Criteria

5.4.1 Effectiveness of advocacy programs at raising awareness of disaster risks among the general public.

●	Level 1	No advocacy programs in place
●	Level 2	Advocacy programs will be established within a year
●	Level 3	Programs are in place, but they are ineffective in raising awareness
●	Level 4	Advocacy programs have proven effective for only some hazards or target groups
●	Level 5	Effective advocacy programs exist for all relevant disaster risks (including flood, drought, earthquake and climate change) and reach all target populations (including at-risk/vulnerable populations)

5.4.2 Effectiveness of advocacy programs at raising awareness of disaster preparedness and response activities among the general public.

-  Level 1 No advocacy programs in place
-  Level 2 Advocacy programs will be established within a year
-  Level 3 Programs are in place, but they are ineffective in raising awareness
-  Level 4 Advocacy programs have proven effective for only some hazards or target groups
-  Level 5 Effective advocacy programs exist for all relevant disaster risks (including flood, drought, earthquake and climate change) and reach all target populations (including at-risk/vulnerable populations)

Key activities and evidence

5.4 Advocacy

- 5.4.1** Establishing and promotion of advocacy programs to raise awareness of disaster risks and disaster preparedness and response activities among the general public.

5.5 Public Capacity

The public can be incorporated into DRM activities through volunteer programs such as volunteer fire, search and rescue, and medical support. Public volunteers may have functional skills (first aid, search and rescue, logistical support etc.) or professional qualifications (doctor, nurse, engineer etc.) that can support and enhance a disaster response. Since volunteers are typically drawn from the surrounding community, their local knowledge and understanding of community issues can also be an asset to the response team.

Assessment Criteria

- 5.5.1** Levels of public participation in volunteer programs sufficient to enhance DRM activities.

-  Level 1 No programs in place
-  Level 2 There is no tracking of volunteer participation numbers
-  Level 3 Participation in volunteer programs is low
-  Level 4 Participation in volunteer programs is high and programs have somewhat enhanced DRM activities
-  Level 5 Participation in volunteer programs is high and has significantly enhanced DRM activities

5.5.2 Effectiveness of capacity building programs that empower local communities, including through appropriate resources, incentives and responsibilities, to reduce risks.

	Level 1	No capacity building programs to empower local communities to reduce risks in place
	Level 2	Capacity building programs to empower local communities to reduce risks will be established within a year
	Level 3	Capacity building programs are in place but do not effectively improve capacity of local communities to reduce risks
	Level 4	Capacity building programs are in place and have somewhat improved capacity of local communities to reduce risks
	Level 5	Capacity building programs are in place and have greatly improved capacity of local communities to reduce risks

Key activities and evidence

5.5 Public Capacity

5.5.1 Establishing and promotion of advocacy program to increase the levels of public participation in volunteer DRM activities.

5.6 Information and Communication

Improving the capacity of the DRM communication system has many benefits, including:

- Dissemination of early warnings, evacuation, response and recovery information
- Overall DRM coordination of activities
- Cooperation among stakeholders
- More efficient use of resources

A commitment to securing and improving communication technology and strategy is required. A resilient DRM communication system needs to incorporate reliable, redundant and widely compatible technology. Feedback mechanisms are also required to regularly monitor effectiveness.

Assessment Criteria

5.6.1 Level of investment of the municipal government in resources to improve information and communication technologies (ICT) used in DRM activities.

	Level 1	Improving ICT is not seen as a priority
	Level 2	Major improvements to ICT will occur within a year
	Level 3	Some investments have occurred, but ICT is greatly lagging behind industry standards
	Level 4	Investments have resulted in state-of-the-art ICT being utilized for some DRM activities
	Level 5	Investments have resulted in state-of-the-art ICT being utilized throughout nearly all DRM activities

5.6.2 Status of the emergency communication network (e.g. DarMAERT communication network).

	Level 1	Not operational
	Level 2	Will be operational within a year
	Level 3	Operational but limited in functionality (coverage, reliability)
	Level 4	Fully-operational, full coverage, but maintenance and testing of equipment is not carried out on a regular basis
	Level 5	Fully-operational, full coverage, and reliable with maintenance and testing of equipment conducted regularly

5.6.3 Utilization of the municipal government of different media (TV, radio, newspapers, internet, social media) to communicate disaster risks to the public, including adherence to guidelines.

	Level 1	There is no strategy to utilize multiple forms of media to communicate disaster risks to the public
	Level 2	Only limited forms of media are used to communicate disaster risks to the public
	Level 3	A variety of media (TV, radio, print, internet and social media) are often used to communicate disaster risks to the public, but there are no communication guidelines
	Level 4	A variety of media (TV, radio, print, internet and social media) are often used to communicate disaster risks to the public, with some communication guidelines in place
	Level 5	A variety of media (TV, radio, print, internet and social media) are used to communicate disaster risks to the public, with clear communication guidelines in place

5.6.4 Level of engagement of media in public education and awareness in disaster risk reduction.

	Level 1	There is little to no media engagement
	Level 2	There is insufficient media engagement, but awareness of the need for media engagement is growing
	Level 3	Media communicates disaster risk information to the public, but still has limited capacity
	Level 4	Media communicates some disaster risk information to the public under an official mandate
	Level 5	Media are key partners for the government to communicate a substantial amount of disaster risk information to the public

- 5.6.5** Existence of mechanisms for engaging stakeholders (e.g., NGOs, civil society and at-risk/ vulnerable communities) to follow up, periodically assess and publicly report on progress and impact of DRM activities.

	Level 1	No mechanisms for engaging stakeholders
	Level 2	Mechanisms for engaging stakeholders will be established within a year
	Level 3	Engagement of stakeholders occurs but is limited in scope or ability to measure progress or impact
	Level 4	Engagement of some key stakeholders occurs on a regular basis and collects valuable information for measuring progress or impact
	Level 5	Engagement of all key stakeholders occurs on a regular basis and collects valuable information for measuring progress or impact

Key activities and evidence

5.6 Information and Communication

- 5.6.1 Facilitate investments and allocate dedicated resources to improve information and communication technologies (ICT) used in DRM activities.
- 5.6.2 Establish a reliable emergency communication network in the municipality with maintenance and testing of equipment conducted regularly
- 5.6.3 Establish plans, protocols and procedures for coordinating and utilizing different media to communicate disaster risks to the public.
- 5.6.5 Establish plans, protocols and procedures for engaging multiple stakeholders in the municipal council to follow up, periodically assess and publicly report on progress and impact of DRM activities.

Tools and Resources

Introduction to Disaster Risk Management (self-paced) (GFDRR)

This introductory course familiarizes development practitioners with contemporary concepts and practices in disaster management and discusses the paradigm shift from re-active to pro-active approaches in this cross-cutting field of development.

Safe and Resilient Cities (self-paced) (GFDRR)

The course exposes city officials and practitioners to cutting edge tools on vulnerability assessments, policies and programs, stock-taking and gaps analysis, and financial access.

Introduction to Damage, Loss and Needs Assessment (DaLA) (GFDRR)

Introductory Damage Loss and Needs Assessment course is a six modules course which reviews the conceptual framework of DaLA as well as the sectoral aspects of conducting an assessment.

Introduction to the Open Data for Resilience Initiative (GFDRR)

This short course provides an overview of the approach and toolset developed by the Open Data for Resilience Initiative, including tools for sharing geospatial data, community mapping, and more.

Understanding Risk (GFDRR)

This e-learning course will explain how risk characteristics are identified, how this information is used to assess overall risk, and how this information is used to address risk.

Post-Disaster Needs Assessment (PDNA) Online Training (GFDRR)

The Post-Disaster Needs Assessment (PDNA) is an internationally accepted methodology for determining the physical damages, economic losses, and costs of meeting recovery needs after a natural disaster through a government-led process. This compelling, interactive and sequential online e-Learning on PDNA consist of four modules.

Disaster Management Recovery and Reconstruction (Free Online Course)

Developed by the Humanitarian Learning Centre, this new online course explains how we can use Disaster Risk Reduction and Management to understand risk and vulnerability, prevent a hazard from becoming a disaster and mitigate its impact by making communities more resilient.

Public Health Principles in Disaster and Medical Humanitarian Response (Free Online Course)

The “Public Health Principles in Disaster and Medical Humanitarian Response” online course was developed by Centre for Oxford University and CUHK for Disaster and Medical Humanitarian Response (CCOUC) in an attempt to make lessons learnt from previous disasters available and comprehensible to key stakeholders in disaster risk mitigation and the civil society.

Appendix 1: Terminology

Hazard	<i>A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.</i>
Vulnerability	<i>The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.</i>
Disaster	<i>A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.</i>
Risk	<i>The combination of the probability of an event and its negative consequences.</i>
Mitigation	<i>The lessening or minimizing of the adverse impacts of a hazardous event.</i>
Building codes	<i>A set of ordinances or regulations and associated standards intended to regulate aspects of the design, construction, materials, alteration and occupancy of structures which are necessary to ensure human safety and welfare, including resistance to collapse and damage.</i>
Contingency plan	<i>This analyses disaster risks and establishes arrangements in advance to enable timely, effective and appropriate responses.</i>
Critical infrastructure	<i>The physical structures, facilities, networks and other assets which provide services that are essential to the social and economic functioning of a community or society</i>
Adaptation	<i>The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.</i>
Disaster Risk	<i>The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.</i>

Disaster Risk Management	<i>Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.</i>
Early Warning Systems	<i>An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.</i>
Public facilities	<i>Public facilities refers to key government buildings and infrastructure for communication, water and medical services.</i>
Unplanned settlements	<i>Also referred to as informal settlements are homes typically constructed on land which occupants have no proof of owning. Such housing is typically not in compliance with current planning and building regulations.</i>
Resilience	<i>The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.</i>
Incident Command System	<i>It provides a standardized approach to the command, control, and coordination of emergency response, and a common hierarchy within which responders from multiple agencies can be effective. It is considered globally as a best practice model to handle Emergency Operations Center activations. It establishes a common and scalable structure that can flex and demobilize to meet activation requirements. It also uses forms, guides and other publications that guide operations.</i>
Emergency Response Plan (ERP)	<i>Describes the management and coordination procedures for mobilizing staff and resources in a combined (multi-agency) response to a major emergency (generic)</i>
Climate Change	<i>A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period.</i>
Institutional Capacity	<i>Capability of an institution to set and achieve social and economic goals, through knowledge, skills, systems, and institutions</i>

Sustainability	<i>It is the process of people maintaining change in a balanced environment, in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.</i>
Sustainable Development	<i>Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.</i>
Risk Transfer	<i>The process of formally or informally shifting the financial consequences of particular risks from one party to another, whereby a household, community, enterprise or State authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.</i>
Emergency Management	<i>is also used, sometimes interchangeably, with the term disaster management, particularly in the context of biological and technological hazards and for health emergencies. While there is a large degree of overlap, an emergency can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.</i>
Recovery	<i>The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disasteraffected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.</i>
Disaster Risk Governance	<i>The system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy.</i>
Web-based Platform	<i>A web-based platform allows data sharing ranging from bilateral communications with colleagues to providing free, unrestricted access to the public. The data sharing referred to means making data available to people other than those who have generated them.</i>
Prevention	<i>Activities and measures to avoid existing and new disaster risks.</i>

Response	<i>Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.</i>
Reconstruction	<i>The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.</i>
Rehabilitation	<i>The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.</i>
Preparedness	<i>The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.</i>
Training	<i>Organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill.</i>
Table-top Exercises	<i>A tabletop exercise (TTX) is a disaster preparedness activity that takes participants through the process of dealing with a simulated disaster scenario. A TTX is discussion-based and not only helps participants familiarize themselves with the response process, but enables administrators to gauge the effectiveness of the organization's emergency response practices.</i>
Drill	<i>A hypothetical disaster drill is used to perfect your organization's response to a particular emergency situation, such as extreme weather, bomb threat or lockdown. An effective disaster drill should be realistic, interactive and moderately stressful for the participants.</i>
Capacity-building	<i>It refers to building capacity in situations where there is no or little capacity [...] to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environment potentials and limits and of needs perceived by the people of the country concerned. It encompasses the country's human, scientific, technological, organizational, institutional, and resource capabilities.</i>

Participatory Process	<i>Involves all stakeholders in the decisionmaking that affects their lives.</i>
DRMI Toolkit	
Monitoring	<i>Monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives.</i>
Evaluation	<i>Evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making. Evaluations, like monitoring, can apply to many things, including an activity, project, programme, strategy, policy, topic, theme, sector or organization.</i> <i>Evaluations are done independently to provide managers and staff with an objective assessment of whether or not they are on track. They are also more rigorous in their procedures, design and methodology, and generally involve more extensive analysis. However, the aims of both monitoring and evaluation are very similar: to provide information that can help inform decisions, improve performance and achieve planned results.</i>
Exposure	<i>The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.</i>
Public Awareness	<i>The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.</i>
Public Awareness Program	<i>A program that provides generic information to the broader public to raise awareness about emergency management and suggests ways to reduce the risk of loss of life and property damage in the event of an emergency.</i>
Stakeholders	<i>Any entity with a declared or conceivable interest or stake in a policy concern. They can be individuals, organizations, or unorganized groups, falling into one or more of the following categories: international actors (e.g. donors), national or political actors (e.g. legislators, governors), public sector agencies (e.g. MDAs), interest groups (e.g. unions, medical associations), commercial/private for-profit, nonprofit organizations (NGOs, foundations), civil society members, and users/consumers.</i>

Disaster Risk Management Plan	<i>Disaster risk management plans set out the goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives. They should be guided by the Sendai Framework for Disaster Risk Reduction 2015-2030 and considered and coordinated within relevant development plans, resource allocations and programme activities. National-level plans need to be specific to each level of administrative responsibility and adapted to the different social and geographical circumstances that are present. The time frame and responsibilities for implementation and the sources of funding should be specified in the plan. Linkages to sustainable development and climate change adaptation plans should be made where possible.</i>
Risk Assessment	<i>A qualitative or quantitative approach to determine the nature and extent of disaster risk by analysing potential hazards and evaluating existing conditions of exposure and vulnerability that together could harm people, property, services, livelihoods and the environment on which they depend.</i>
Risk-Sensitive Land Use Planning	<i>Risk-sensitive land use planning (RSLUP) is planning that integrates risk reduction, to allow communities to find the right mix of both development and risk reduction, in other words, accepting some risk for economic gain and vice versa.</i>
Informal Settlements	<i>Residential areas where inhabitants are deemed by the authorities to have no legal claim to the land they occupy and the system of occupation ranges from squatting to informal rental housing. In most cases, the housing is insecure and poor quality and does not comply with current planning and building regulations. Informal settlements are also often situated in the most precarious urban areas where basic services and infrastructure including public or green space are limited.</i>
Unplanned Settlements	<i>Unplanned settlements are defined by the lack of a secure housing system, lack of adequate mobility, access to clean water or inadequate sanitation, and the absence of secure tenure status.</i>
Urbanization	<i>Urbanization is process of global scale changing the social and environmental landscape on every continent. Urbanization is a result of population migration from rural areas in addition to natural urban demographic growth.</i>

Security of Tenure	<i>Legal protection afforded to (1) tenants of dwelling houses (usually under a rent act) against arbitrary rent increases and landlord's attempts to repossess the property through eviction, or (2) employees in certain professions (such as teaching) against summary dismissal without just cause.</i> <i>It is understood as a set of relationships with respect to housing and land, established through statutory or customary law or informal or hybrid arrangements, that enables one to live in one's home in security, peace and dignity. It is an integral part of the right to adequate housing and a necessary ingredient for the enjoyment of many other civil, cultural, economic, political and social rights. All persons should possess a degree of security of tenure that guarantees legal protection against forced eviction, harassment and other threats.</i>
Regulation	<i>Government activity designed to monitor and guide private economic competition specific actions (characterized as economic regulation) have included placing limits on producers' prices and practices, and promoting commerce through grants or subsidies. Other actions emerging more recently (termed social regulation) have included regulating conditions under which goods and services are produced and attempting to minimize product hazards and risks to consumers</i>
Relocation	<i>A process whereby a community's housing, assets, and public infrastructure are rebuilt in another location. It is also the permanent (or long-term) movement of a community (or a significant part of it) from one location to another, in which important characteristics of the original community, including its social structures, legal and political systems, cultural characteristics and worldviews are retained: the community stays together at the destination in a social form that is similar to the community of origin.</i>

Risk-Informed Decision-Making	<i>An approach to regulatory decisionmaking, in which insights from probabilistic risk assessment are considered with other engineering insights. It is an integrated approach that combines the insights provided by the deterministic approach and those from the probabilistic approach with any other requirements in making decisions on a safety issue or in deciding on the priorities for the activities to be carried out by the regulatory body. When this integrated process is applied to making decisions about safety issues in safety-critical systems, this is sometimes referred to as Risk Informed Decision Making (RIDM). When it is applied to making decisions about the way in which a regulatory body carries out its activities, this is sometimes referred to as Risk informed Regulation.</i>
Property Rights	<i>A property right is the exclusive authority to determine how a resource is used, whether that resource is owned by government or by individuals. It governs various forms of ownership over property which can take the form of tangible assets such as land or items, or immovable or personal property such as bank accounts. A property right refers to ownership of title to that property.</i>
Building Stock	<i>Housing stock (or dwelling stock) is a term used commonly to refer to the total number of dwellings (houses, bungalows, flats, maisonettes and bedsits) in an area, region or country that are valued as domestic or mixed for the purposes of rating.</i>
Policy	<i>General principles that guide a government in its management of public affairs. It is a course or principle of action adopted or proposed by an organization or individual.</i>
Disaster-resilient construction techniques	<i>Earthquake-resistant construction, the fabrication of a building or structure that is able to withstand the sudden ground shaking that is characteristic of earthquakes, thereby minimizing structural damage and human deaths and injuries. Suitable construction methods are required to ensure that proper design objectives for earthquake-resistance are met. Construction methods can vary dramatically throughout the world, so one must be aware of local construction methods and resource availability before concluding whether a particular earthquake-resistant design will be practical and realistic for the region.</i>

Coping Capacities	<i>It is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during disasters or adverse conditions. Coping capacities contribute to the reduction of disaster risks.</i>
Disaster Risk Financing	<i>Disaster risk financing aims to transfer risks and strengthen the ability to manage economic and fiscal stresses when disasters strike. There is no one-size-fits-all approach to disaster risk financing and a wide array of financial protection policies and instruments exists, including risk insurance programs (or other risk transfer instruments), reserve funds (or ex-ante budget allocation), line of contingent credit, emergency ex-post budget allocation, and ex-post sovereign borrowing, and social protection programs.</i>
Inclusivity	<i>In planning recognizes that every person has the right to participate in shaping the built environment and to benefit from urban development. It places particular focus on the most marginalized and vulnerable groups of society by promoting participation in planning processes and also diversity in representation. Inclusive cities enable everyone access to services, jobs and opportunities and to be part of city civic and political life.</i>
Shelter and Mass Care	<i>Shelter and Mass Care involves the necessary tasks for the assembly and operation of temporary shelter for people who had to be evacuated from the disaster area. It also entails family reunification and provision of emergency relief materials, food and psychosocial support.</i>
Evacuation	<i>Moving people and assets temporarily to safer places before, during or after the occurrence of a hazardous event in order to protect them. It deals with movement of people affected by the emergency and of those whose lives are potentially threatened by it, from the emergency area to a safer place.</i>
Health and Medical Services	<i>Health and Medical Services involves mobilization and management of health and medical services during the emergency. It involves providing treatment, stabilization and care for those injured at the scene (pre-hospital care), as well as hospital care after their transfer to the health facilities. Likewise, it entails medical transfer and referral services, psychosocial support, epidemiological observation, and transport of medical staff, resources and equipment.</i>

Dead Bodies Management	<i>It refers to the management of dead people resulting from an emergency. This includes their identification, investigation on the reasons for the death and burial of bodies that could not be identified or pose a health risk; as well as the installation and management of mortuaries.</i>
Search and Rescue	<i>to locate, treat and remove persons trapped in collapsed structures.</i>
Emergency Communication	<i>This involves collecting, processing and disseminating official information about the emergency to have a coordinated and effective emergency response. Official information to be issued relates to the causes, effects and tasks performed while handling the emergency.</i>
Retrofitting	<i>Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.</i>
Disaster Risk Reduction	<i>Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.</i>
Environmental Impact Assessment	<i>Process by which the environmental consequences of a proposed project or programme are evaluated, undertaken as an integral part of planning and decisionmaking processes with a view to limiting or reducing the adverse impacts of the project or programme.</i>
Public-Private Partnerships	<i>Refers to all the formalized types of relations between the public and the private sectors which aim to ensure the realization of goals of general interest, as infrastructures and services, through the joint funding and the co-operating of public authorities and private bodies. Involvement of private enterprise (in the form of management expertise and/or monetary contributions) in the government projects aimed at public benefit.</i>
Peri-urban Zone	<i>Area between an urban settlement and its rural hinterland. Larger peri-urban zones can include towns and villages within an urban agglomeration. Such areas are often fast changing, with complex patterns of land use and landscape, fragmented between local or regional boundaries.</i>

<i>Institutional Arrangements</i>	<i>Institutional arrangements are the policies, systems, and processes that organizations use to legislate, plan and manage their activities efficiently and to effectively coordinate with others in order to fulfill their mandate. For example, countries can move from "brain drain" to "brain gain" by creating incentives to encourage skilled workers to remain, to return after university, or to come on a short-term basis to engage in specific projects. Such an effort could involve universities, public administration and the private sector, and could include supporting the development of merit-based recruitment criteria for civil service.</i>
<i>Social Protection Programs</i>	<i>Social protection is a set of interventions whose objective is to reduce social and economic risk and vulnerability, and to alleviate extreme poverty and deprivation. social protection is a set of interventions whose objective is to reduce social and economic risk and vulnerability, and to alleviate extreme poverty and deprivation.</i> <i>Social protection is a key aspect in a strategy for rural poverty reduction. Social protection includes three types of programmes:</i> <i>- social assistance: publically provided conditional or unconditional cash or in-kind transfers, or public works programmes;</i> <i>- social insurance: contributory programmes that cover designated contingencies affecting the welfare or income of households;</i> <i>- labour market protection: provides unemployment benefits, builds skills and trains workers.</i>
<i>Financing</i>	<i>Disaster Risk Financing helps minimize the cost and optimizes the timing of meeting post-disaster funding needs without compromising development goals, fiscal stability, or wellbeing. It promotes comprehensive financial protection strategies to ensure that governments, homeowners, small and medium-sized enterprises, agricultural producers, and the most vulnerable populations can meet post-disaster funding needs as they arrive.</i>

Temporary Employment Guarantee Scheme	Also called "emergency employment programmes." It involves a rights-based approach that ensures basic income security for persons in active age unable to earn sufficient income. It can be an agent of transformation for: - Providing Employment (work for participants) - Social Protection (income/cash transfers for participants) - Public infrastructure and/or social goods and services - Green Works natural resources management, regeneration and rehabilitation, increased biodiversity
Interoperability	The ability of organizations and systems to exchange information, communicate effectively and work well together. This applies to technological and functional interoperability.
Knowledge Management	Knowledge management refers to how an organization gathers, organizes, produces, shares, and analyzes its knowledge in terms of resources, documents, and people skills. Strategies and processes designed to identify, capture, structure, value, leverage, and share an organization's intellectual assets to enhance its performance and competitiveness. It is based on two critical activities: (1) capture and documentation of individual explicit and tacit knowledge, and (2) its dissemination within the organization.
Climate Risk Management	The use of climate information to cope with the impact of climate on development and resource management. In many parts of the world, natural hazards such as floods and droughts contribute to increasing socioeconomic and ecological disturbances. Managing such risks is a major challenge, particularly for developing and least developed countries. This refers to a mechanism "to assist developing countries, especially those particularly vulnerable [or actors in these countries], in adapting to climate change by reducing climate-related risks (including in the form of flood, droughts and other extreme weather events, and their impacts) and transferring these risks where necessary through financial mechanisms, in accordance with their adaptation strategy."

Mainstreaming	To bring to the forefront an important issue that is not the concern or business of a particular sector but is the common concern of all sectors, or what is often characterized as “everybody’s business”. The core philosophy of mainstreaming is that by bringing the critical cross-cutting issue to the forefront, it becomes the core principle of governance that permeates all sectors and all levels. And it goes beyond the public sector to include the private sector, the corporate world, academia, media, civil society and communities. Mainstreaming has the dual purpose of ensuring that (1) development is protected from existing and future disaster risks and (2) development does not create any new risks of disasters or exacerbates the existing risks.
Capacity and Training Needs Assessment	Capacity assessment is the process by which the capacity of a group, organization or society is reviewed against desired goals, where existing capacities are identified for maintenance or strengthening and capacity gaps are identified for further action. Training Needs Assessment can be defined as identifying the training needs at individual, or organizational level, in order for the organization to perform effectively. It helps prioritize the contents of the training and is a process that culls out the training needs of the participants based on various categories, background, roles, and positions. The TNA generally results in a training design which address the capacity needs of the participants in an optimal manner.
Capacity Gap	Capacity gaps are identified for further action when existing capacities are identified for maintenance or strengthening, wherein the capacity of a group, organization or society is reviewed against desired goals, through a process called capacity assessment. Capacity gaps are categorized into the following: (a) gaps hindering the degree of availability of existing resources; (b) lack of sufficient quantities of major categories of resources; (c) lack of sufficient quantities of specific equipment or expertise; (d) lack of information on specific categories of equipment or expertise; (e) limited preparedness of major categories of response resources.

Disaster Simulation Exercise	<i>A simulation exercise is a form of practice, training, monitoring or evaluation of capabilities involving the description or simulation of an emergency, to which a described or simulated response is made. Simulation exercises can help to develop, assess and test functional capabilities of emergency systems, procedures and mechanisms. Simulation exercises are training and quality assurance tools, which provide an evidence-based assessment for the monitoring, testing and strengthening of functional capacities to respond to outbreaks and public health emergencies. As a training tool, they allow participants to learn and practice emergency response procedures in a safe and controlled environment. As a quality assurance tool, exercises test and evaluate emergency policies, plans and procedures. Simulation exercises play a key role in the development and implementation of preparedness and response capacities at all levels (national, regional, community and global) and have been identified as a key component in the validation of core capacities under the IHR monitoring and evaluation framework (2015).</i> <i>A simulation exercise is more effective and efficient when a simulated scenario is used that is close to reality. The scenario is a pre-planned storyline that drives an exercise, as well as the stimuli used to achieve exercise objectives. The scenario is designed to stimulate exercise participants to respond to certain events and can be presented through various means, including through fake press articles, face to face through actors, audio/visual material including video clips, etc.</i>
Advocacy	<i>Advocacy is the deliberate process, based on demonstrated evidence, to directly and indirectly influence decision makers, stakeholders and relevant audiences to support and implement actions that contribute to the fulfilment of [...] rights. It involves awareness-raising, communications for media work, communications for behaviour change, developing partnerships, coalitions, and alliances, lobbying and negotiating, campaigning, research and publication, social mobilization, conferences and events</i>
Information and Communication Technologies (ICT)	<i>Integration of telecommunications, computers as well as the necessary software, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.</i>

Build Back Better	<i>The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies and the environment.</i>
Contingency Planning	<i>A management process that analyses disaster risks and establishes arrangements in advance to enable timely, effective and appropriate responses.</i>
Emergency	<i>Is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.</i>
Risk Information	<i>Disaster Risk Information refers to comprehensive information on all dimensions of disaster risk, including hazards, exposure, vulnerability and capacity, related to persons, communities, organizations and countries and their assets.</i>
Disaster Risk Reduction Strategies and Policies	<i>Disaster risk reduction strategies and policies define goals and objectives across different timescales and with concrete targets, indicators and time frames. In line with the Sendai Framework for Disaster Risk Reduction 2015-2030, these should be aimed at preventing the creation of disaster risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience.</i> <i>A global, agreed policy of disaster risk reduction is set out in the United Nations endorsed Sendai Framework for Disaster Risk Reduction 2015-2030, adopted in March 2015, whose expected outcome over the next 15 years is: "The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries".</i>
Multi-hazard	<i>Multi-hazard means (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects.</i>

Structural and Non-Structural Measures	Structural measures are any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems. Non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.
Land Use Planning	The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses. It is also the systematic assessment of land and water potential, alternatives for land use and economic and social conditions in order to select and adopt the best land use options. Its purpose is to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future.
Best Practice	A procedure that has been shown by research and experience to produce optimal results and that is established or proposed as a standard suitable for widespread adoption
Non-Government Organization	Often applied exclusively to community groups and not-forprofit organizations but also includes businesses and business associations. It is an entity with a common interest or focus that is not created by a government, but may work cooperatively with governments.
Protocol	Protocol is defined as the rules and customs of a group or a standard procedure.
Social Capital	Social capital refers to the institutions, relationships and norms that shape the quality and quantity of a society's social interactions. Social capital is not just the sum of the institutions that underpin a society; it is the glue that holds them together.
Transparency	Transparency refers to unfettered access by the public to timely and reliable information on decisions and performance in the public sector, as well as on governmental political and economic activities, procedures and decisions.

Capacity	<i>The ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner. There are three levels at which capacity should be developed: Individual (experience, knowledge, technical level), Organizational (organizational systems and procedures), and Systemic or related to the enabling environment (policies, legislation, social norms, etc.).</i>
Local Authority	<i>This is a government institution that oversees the welfare, security, taxation and administers public services within a particular geopolitical boundary. This can be in the form of a city or municipal government. The governance structure and mandate of a local authority are generally specified in the laws and acts of the country pertaining to local governments.</i>
Critical Infrastructure	<i>The primary physical structures, technical facilities and systems whose disruption, failure or destruction have a serious impact on the functioning of society, the economy or the state within a natural hazard induced disaster context.</i>
Zoning	<i>Zoning is a form of regulatory implementation of planning which involves the division of the community into districts, or zones, within which regulations apply to the use of land or buildings, the intensity of that use as well as the height and bulk, or extent of that use. To achieve economic and social development sustainably and efficiently, cities focus on planning through zoning to divide cities for housing construction, sanitation improvements, and access to recreation among other things.</i>
Migrants	<i>Migrants are defined as:</i> <i>• Persons who are outside the territory of the State of which they are nationals or citizens, are not subject to its legal protection and are in the territory of another State;</i> <i>• Persons who do not enjoy the general legal recognition of rights which is inherent in the granting by the host State of the status of refugee, naturalized person or of similar status;</i> <i>• Persons who do not enjoy either general legal protection of their fundamental rights by virtue of diplomatic agreements, visas or other agreements.</i>
Damage Assessment	<i>An appraisal or determination of the effects of a disaster on people, property, the environment, the economy and/or services.</i>

Exercise	<i>A simulated emergency in which players carry out actions, functions, and responsibilities that would be expected of them in a real emergency. Exercises can be used to validate plans and procedures, and to practice prevention, mitigation, preparedness, response, and recovery capabilities.</i>
Private Sector	<i>A business or industry not owned or managed by any level of government.</i>
Public Education	<i>It provides focused information to a target audience to educate about protective actions to reduce the risk of life and property damage, in the event of an emergency.</i>
Resources	<i>These are personnel and major items of equipment, supplies, and facilities available or potentially available for assignment to incident operations and for which status is maintained. Resources are described by kind and type and may be used in operational or support capacities.</i>

Appendix 2: Key Stakeholders

AGENCY	Institution	Name	Position	Email address	Contact number
DarMAERT	RAS	Dr. Christopher Mnzava	Dar es Salaam Regional Secretary/ DarMAERT Coordinator	mnzavachris60@gmail.com	255713327399
	NGO	Lawrence Mtui	DRM expert	lawrenceanton@gmail.com	784302334
	RAS	Masalida Zephania	Social Welfare Officer & DRM expert	lida.zeph@yahoo.com	717261320
	RAS	Salum Hamidu	GIS Officer - Land Planning	salym407@gmail.com	717351395
	Tanzania Red Cross Society	Grace Mawalla	Dar es Salaam Regional Coordinator	gmmawalla@yahoo.com; grace.mawalla@trcs.or.tz	0715364835
Local Authority - Kinondoni	Kinondoni Municipal Council	Pendo Fred Mwaisaka	Municipal Disaster Coordinator - Kinondoni	pendofredmwaisaka@gmail.com	0713493246/ 0684493240
		Nuru Kitara	Community Development Officer	nurukitara@gmail.com	716209210
		John Kijumbe			
		Clopa E. Soi	Education Officer	cleopaso@gmail.com	0753388006
			HRO	cornyp31@yahoo.com	0789619790
Local Authority - Ilala	Ilala Municipal Council	Magdalena Msaki	Municipal Disaster Coordinator - Ilala	magemsaki@yahoo.com	754887000
		Leah Chimile	Social Welfare Officer-IMC	leahchimile79@gmail.com	692034866
		Steven Mkude			713302868
		Francis Gowe			655117837
			Economist Ilala Municipal	lissakayombo@yahoo.com	784457573

Local Authority- Ubungo	Ubungo Municipal Council	Ndeshimuni Emmanuel	Municipal Disaster Coordinator -Ubungo		713530692
		Juliana Renatus Kibonde	Focal Person Ubungo MC	jkebonde@gmail.com	620214649
		Arkedius Haule	Town Planner UMC	britotiem70@gmail.com	0652070170
		Nice Vahaye			
			Emergency	dramartz@yahoo.com	0655226626
Local Authority- Temeke	Temeke Municipal Council	Sweetbertha Castor	Municipal Disaster Coordinator - Temeke	sweetcastor1999@yahoo.com	0715946958 / 0784946958
		Shamila Hasan Nuru	CDO	hassaushamila@gmail.com	0712773280
		Dr. Laurent Chipatta	HMUS/ Emergency Disaster Coordinator	chipatta2020@gmail.com	765961750
		Motongori Chacha Albert	Emergency Officer and Assistant Disaster Coordinator	motogorichaha@gmail.com	767444250
		Tumwamini Mbene	STPO	tuwaminiabeod@yahoo.com	754607526
Local Authority- Kigamboni	Kigamboni Municipal Council	Suzan Philemon Swai	Municipal Disaster Coordinator- Kigamboni	susankoku@gmail.com	622038202
		Eddah Gweba	Community Development Officer	gwebaedda@yahoo.com	752318098
		Jocelyne Tutundiga	Environmental Officer Management (EMO)	jocelynetutindaga@gmail.com	0654200954
		Maximillian Manyuka	Economist Risk Coordinator	tenyelemu@gmail.com	713388880
		Charles Mtambo	Town Planner	cmntambo11@gmail.com	768526171
	Disaster Management Department	Charles Msangi	Disaster Management Coordinator	cmsangi@yahoo.com Charles.msangi@pmo.go.tz	753777771

Appendix 3: DRMI Worksheet

Name of Municipality	
Year of Assessment	
Date of Completion	
Name of Auditors	

Component 1: Risk Information

1.1 Risk Awareness

1.1.1	Level of awareness of municipal officials of potential impacts of natural hazards (floods, drought, earthquakes) to their municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.1.2	Level of awareness of municipal officials of potential impacts of climate change to their municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.1.3	Effectiveness of existing mechanisms and advocacy programs and products (e.g. workshops, meetings, risk reports/newsletters dissemination, awareness raising activities) to ensure that relevant stakeholders are informed of disaster risks, as well as prevention and mitigation strategies.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

1.2 Data Collection

1.2.1	Status of municipality's efforts to collect data on disaster losses.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.2.2	Status of municipality's efforts to systematically access and utilize a wide variety of infrastructure maps such as drainage networks, health care services, solid waste dumpsites, sanitation lines and water sources, and level of access to this information to key stakeholders, as appropriate;	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.2.3	Availability and utilization of disaster risk data that is disaggregated by income, sex, age, race, ethnicity, migration status, disability, geographic location and other characteristics.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

1.3 Risk and Information Studies

1.3.1	Effectiveness of monitoring and early warning systems for multiple hazards.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.3.2	Status of risk studies (by ARU, UDSM, UDOM, GST or others) for multiple hazards in your municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.3.3	Ability of hazard warnings to reach at-risk populations in time for them to enact an effective response.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.3.4	The extent to which the outputs of vulnerability and risk studies are being used by municipal officials within their regular functions.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.3.5	The extent to which vulnerability and risk studies inform/influence investment in disaster risk reduction measures.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

1.4 Knowledge Management

1.4.1	Capacity of the municipal government to influence or participate in disaster risk management research.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.4.2	Effectiveness of existing mechanisms (e.g. information sharing platforms, reporting/feedback structures, emergency services workshops/forums, case studies/best practices/report dissemination etc.) to ensure that disaster risk management knowledge is retained, strengthened, shared and utilized within the municipal government.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
1.4.3	Effectiveness of roles and responsibilities for implementing disaster risk management activities in the existing laws, rules and regulations at the municipal level.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

Component 2: Risk Governance

2.1 Roles and Responsibilities

2.1.1	Effectiveness of roles and responsibilities for implementing disaster risk management activities in the existing laws, rules and regulations at the municipal level.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.1.2	Clarity among municipal officials / departments on who is responsible for what, and who should make decisions.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.1.3	Extent to which women occupy local government positions equally as men and are represented in decision-making capacity in the fields of DRM and urban resilience.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.2 Laws and Regulations at the Local Level

2.2.1	Effectiveness of the legal system to ensure local action by the municipal government on disaster risk management issues.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.2.2	Impact of municipal government disaster risk management activities	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.2.3	Extent to which legislation or regulations mandate that municipal government prepare adequate disaster risk management plans	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.2.4	Extent to which legislation or regulations mandate that municipal authorities carry out surveys and develop local disaster risk assessments and maps, including climate change scenarios.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.3 Cooperation at the Local Level

2.3.1	Effectiveness of cooperation between neighbouring municipal councils on disaster management issues.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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2.3.2	Effectiveness of cooperation between municipal councils and the regional government on disaster risk management issues.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.3.3	Effectiveness of municipal councils in coordinating disaster management activities with the private sector, non-government organizations, and community/ social organizations.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.3.4	Level of inclusion of vulnerable groups (women, youth, elderly, migrants, low-income, people with disabilities and/or ethnic minorities) in DRM issues.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.4 Risk Sensitive Land-use Planning

2.4.1	Availability of formal plans (land use plans / zoning regulations) that incorporate hazard maps or related means that identify areas where construction is not permitted due to natural hazards.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.4.2	Availability of policies and guidelines for risk mitigation of public facilities.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.5 Unplanned Settlements

2.5.1	Availability of strategies / policies / projects to reduce the vulnerability of unplanned settlements (e.g. housing improvement, formalizing property rights, relocation).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.5.2	Level of coordination between developers and local authorities during the planning and construction process. unplanned settlements (e.g. housing improvement, formalizing property rights, relocation).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.5.3	Availability of policies to improve access to adequate, safe and secure housing.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.5.4	Availability of policies to improve access to adequate, safe and secure housing.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.6 Building Regulation

2.6.1	Incorporation of disaster resilient construction techniques in building regulations / codes.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.6.2	Updating of building codes with the latest hazard and risk studies.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.6.3	Availability of laws and regulations which enable the licensing / certification of construction professionals (e.g. building inspectors, fire officials, architects, planners, engineers, builders, trades, contractors, third-party reviewer).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.6.4	Availability of laws and regulations which enable the certification / testing / quality control of building materials and system.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.6.5	General level of safety of buildings from major hazards, including floods and earthquake	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.7 Investments and Resource Allocation

2.7.1	Level of budget allocation for municipal government to implement disaster risk management activities.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.7.2	Authority of the municipality to allocate resources for disaster risk management activities (including personnel, finances, material and logistics)	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.7.3	Access of the municipality to funds to support vulnerable populations to strengthen community coping capacities before a disaster.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
2.7.4	Access of the municipality to funds to acquire missing resources for emergency response, shelter provision and relief distribution.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5



2.7.5	Access of the municipality to funds to strengthen public assets and critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities).				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.8 Financial Protection

2.8.1	Level of insurance coverage and risk transfer strategies (insurance/reinsurance, risk titles, bonds, etc.) for public assets and critical infrastructure.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

2.8.2

Level of regulation to ensure fair and reliable access to home and property insurance.

☐ Level 1

☐ Level 2

☐ Level 3

☐ Level 4

☐ Level 5

2.8.3

Level of support for a business environment (including investments, innovations, and entrepreneurship) integrated with disaster risk reduction, urban resilience, environmental ability, climate change mitigation and adaptation, and inclusivity.

☐ Level 1

☐ Level 2

☐ Level 3

☐ Level 4

☐ Level 5

Component 3: Emergency Management

3.1 Emergency Response Plan

3.1.1	Awareness of municipal officials of the content and strategy of the municipality's Emergency Response Plan (e.g., DarMAERT ERP).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.1.2	Availability of a system for inter-institutional coordination (e.g. Emergency Support Function system) in the municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.1.3	Utilization of the Incident Command System (ICS) for emergency response by municipal officials in Dar es Salaam.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.1.4	Availability of sufficient resources (including personnel, equipment, technology) supporting the Emergency Operations Center (EOC) that serves the municipality to coordinate a large-scale disaster response.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.2 Plan Testing and Review

3.2.1	Existence of training programs to build capacity to implement the municipality's emergency response plan (e.g. DarMAERT ERP).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.2.2	Testing with the relevant stakeholders of the municipal council contingency plans.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.3 Administration and Logistics

3.3.1	Existence of Extent to which the municipality has the technical, financial and administrative capacity to implement the emergency response plan (e.g. DarMAERT ERP).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.3.2	Availability of agreements (i.e., mutual-aid agreements), policies or procedures to utilize the resources of the public and private sector to improve preparedness and response activities (e.g., prepositioning of goods, disaster communication, search and rescue, emergency services and management of temporary shelters) in the municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.3.3	Availability of inventory of the potential resources from the public and private sector that could be used in preparation or response to a disaster.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.4 Emergency Response Functions

3.4.1	Awareness of the municipal officials of their primary and secondary roles and responsibilities during emergency response (these roles are as outlined in the 15 Emergency Response Functions contained within the DarMAERT Emergency Response Plan).				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.5 Communication

3.5.1	Effectiveness in disseminating official warning instructions to the public through available communication means.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.6 Shelter and Mass Care

3.6.1	Establishment of safe shelter facilities and preventive health services including control of communicable diseases in the shelters in the municipality.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.6.2	Existence of plan to quickly establish mass care facilities to provide shelter, food, water and sanitation and handle logistics of relief items				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.6.3	Consideration of safety, security, and physical and mental health of women and children, as well as other vulnerable groups (e.g. health issues, disabled, elderly, migrants) in the mass care facilities (including evacuation centers).				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.7 Evacuation

3.7.1	Effectiveness of evacuations implemented by the municipality in past disaster events.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.7.2	Effectiveness of evacuation plans and procedures to meet the needs of vulnerable populations.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.8 Health and Medical Services

3.8.1	Effectiveness of the primary agencies for deployment of Health and Medical Services agencies (Hospitals and Ambulance Services) in your municipality during a disaster.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.8.2	Effectiveness in coordinating deployment of health/medical personnel, drugs, equipment, and supplies at the disaster site, and/or retaining them at the hospital for incoming patients.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
3.8.3	Availability of standard operating procedures for consolidating information on deaths, locating and notifying relatives, establishing temporary mortuary and conducting burial at a designated site for caring of human remains.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

3.9 Utilities

3.9.1	Availability of contingency plans of key service providers in Dar es Salaam (transport, water, power, communication, health, education, etc.) for continued service delivery during and/or after major disasters such as floods?	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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Component 4: Infrastructure and Services

4.1 Critical Infrastructure Assessment

4.1.1	Sufficiency of data on critical infrastructure.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.1.2	Access to critical services (water, healthcare, sanitation, transportation, education, telecommunications) following a major disaster such as a flood or earthquake.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.1.3	Identification of potential disaster impacts to critical infrastructure, such as physical damage, service disruptions and recovery time.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

4.2 Critical Infrastructure Plan

4.2.1	Capacity of municipal government to carry out large scale damage and needs assessments following a major flood or a potential earthquake with focus on the needs of vulnerable populations (isolated or injured individuals, persons with disabilities, women, children, elderly, marginalized groups).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.2.2	Ability of municipality to acquire, store and distribute food, water and medical supplies immediately after a major disaster.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.2.3	Availability of a detailed plan for the operation and maintenance of infrastructure assets.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.2.4	Level of understanding of the municipal government and utility providers' operational capabilities and resources available to restore infrastructure after disruption.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

4.3 Critical Infrastructure Strengthening

4.3.1	Status of improvement of critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities) to better withstand hazards (i.e., flooding and earthquakes) impacts.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.3.2	Existence of flood control measures (drainage upgrades, river training, water retention, coastal protection, erosion management, reforestation) in municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.3.3	Existence of seismic strengthening measures for buildings and infrastructure.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
4.3.4	Extent to which new housing development projects and existing housing improvement projects incorporate DRM strategies to better withstand hazard impacts.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

4.4 Critical Infrastructure Strengthening

4.4.1	Status of improvement of critical infrastructure (transportation, communication, healthcare, water, sanitation, and key facilities) to better withstand hazards (i.e., flooding and earthquakes) impacts.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

4.5 Social Protection Programs

4.5.1	Social development policies and social protection programs are being implemented for poor and vulnerable communities to provide access to basic needs such as food, water, shelter and healthcare in your municipality.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

4.5.2	Social protection programs are being implemented for poor and vulnerable populations to ensure access to financing.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

4.5.3	Social development policies and social protection programs are being implemented for poor and vulnerable communities to provide access to basic needs such as food, water, shelter and healthcare in your municipality.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

Component 5: Training and Capacity Building

5.1 Availability of Training

5.1.1	Identification of priorities, capacities and needs for Disaster Risk Management (DRM) training.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

5.1.2	Extent to which municipal officers have completed DRM training.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

5.1.3	Availability of incentives (e.g., recognition, faster advancement, admin support) for municipal staff to complete disaster risk management training.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

5.1.4	Status of briefing of non-emergency management staff (e.g. planners, engineers, architects, lawyers, etc.) on their potential role and contribution to a disaster response.
	☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5

5.1.5	Availability of funding for disaster risk reduction training.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.2 Drills and Response Simulations

5.2.1	Implementation of regular disaster preparedness and response simulation exercises in the municipality.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.2.2	Level of participation of government, emergency services, civil society and the public in disaster preparedness and response simulation exercises.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.2.3	Effectiveness of disaster exercises in improving emergency staff skills and strengthening disaster plans.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.3 Knowledge-Sharing

5.3.1	Frequency of sharing DRM knowledge and experience with other municipalities.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.3.2	Inclusion of a wide range of municipal staff and service areas in mutual learning activities within your municipality (i.e., exchange of lessons learned, good practices and information).	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.3.3	Effectiveness of cooperation of municipal council with research institutions or other agencies to improve skills or knowledge in DRM.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.4 Advocacy

5.4.1	Effectiveness of advocacy programs at raising awareness of disaster risks among the general public.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.4.2	Effectiveness of advocacy programs at raising awareness of disaster preparedness and response activities among the general public.	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
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5.5 Public Capacity

5.5.1	Extent to which public participation in volunteer programs is sufficient to perform roles in local disaster management.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.5.2	Effectiveness of capacity building programs that empower local communities, including through appropriate resources, incentives and responsibilities, to reduce risks.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5

5.6 Information and Communication

5.6.1	Level of investment of the municipal government in resources to improve information and communication technologies (ICT) used in DRM activities.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.6.2	Status of the emergency communication network (e.g. DarMAERT communication network).				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.6.3	Utilization of the municipal government of different media (TV, radio, newspapers, internet, social media) to communicate disaster risks to the public, including adherence to guidelines.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.6.4	Effectiveness of capacity building programs that empower local communities, including through appropriate resources, incentives and responsibilities, to reduce risks.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.6.5	Level of engagement of media in public education and awareness in disaster risk reduction.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5
5.6.6	Effectiveness of capacity building programs that empower local communities, including through appropriate resources, incentives and responsibilities, to reduce risks.				
	☐ Level 1	☐ Level 2	☐ Level 3	☐ Level 4	☐ Level 5



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TANZANIA
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Earthquakes and
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