Ethiopian Disaster Risk Management Commission

Training Needs Assessment and Institutional Mapping on Disaster Risk Management and Climate Change Adaptation

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Addis Ababa, Ethiopia

Preface

Given the evolving disaster scenario in Ethiopia, disaster preparedness has shifted over the past 50 years. With a previous focus on drought and emergency response, the paradigm has since shifted to providing holistic, proactive, multi-sectoral, and multi-hazard disaster risk management (DRM). The Ethiopian Disaster Risk Management Commission (EDRMC) is the country's coordinating body with an institutional mandate to ensure adequate training, infrastructure, and resources that are allocated equitably for a sustainable and effective DRM system. It seeks to incorporate and integrate a knowledge-driven approach to foster disaster risk reduction (DRR) policies, plans, strategies and practices.

The EDRMC has established a Study, Research and Training Directorate to prioritize knowledge management. This initiative seeks to support evidence-based programming and capacity building needs and to make the best use of research and training outcomes of various institutions. To this end, EDRMC and Asian Disaster Preparedness Center (ADPC) commissioned a team of consultants to carry out a systematic training needs assessment and develop a strategy and roadmap for its implementation. The purpose of this multi-sectoral Training Needs Assessment (TNA) is to identify needs-based, tailored, and effective training and associated strategies needed to support Ethiopia's DRM goals. The specific objectives of the TNA are to analyze existing capacity and gaps for DRR and climate change adaptation (CCA), identify priority research and training areas as well as map stakeholder institutions to advance knowledge and skills for a productive, efficient, and innovative approach to DRM in Ethiopia.

The TNA gathered information from a wide range of institutions. At the Federal level, the study covered 22 agencies including EDRMC, sector ministries, national and international institutions. At the sub-national level, 4 regional states namely Afar, Somali, Oromia, and Amhara, 12 zones, 12 woredas, Addis Ababa City Administrations, and 2 urban woredas were part of the study. Additionally, an extensive literature review was conducted at the national, regional, and international levels to further support this research initiative. The latest and most accurate DRM information has been incorporated and contextualized to the specific considerations of Ethiopia.

A consultative workshop brought approximately 70 experienced professionals representing sector ministries, regional government, academic and research institutions, international and national partner organizations, and EDRMC directorates to enrich and finalize the TNA findings.

EDRMC aims to utilize the multi-sectorial TNA for the development of training curricula and courses for DRM technical capacity building. The DRM web portal and digital library developed by EDRMC will also serve as knowledge and information management tools for concerned stakeholders in Ethiopia. Overall, these actions are expected to contribute to the 'Disaster Risk Management Research and Training Strategy' for organizational improvement in disaster mitigation, preparedness, response, and recovery of Ethiopia.

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Acronyms

AA	Addis Ababa
ACDRM	African Center for Disaster Risk Management
ADPC	Asian Disaster Preparedness Center
BDU-IDRMFS	Bahir Dar University-Institute of Disaster Risk Management and Food Security
BPR	Business Processing Re-Engineering
CBDRR	Community Based Disaster Risk Reduction
CCA	Climate Change Adaptation
CCRDA	Consortium of Christian Relief and Development Association
COVID	Corona Virus Disease
CRED	Center for Research on the Epidemiology of Disasters
CRGE	Climate Resilient Green Economy
CRS	Catholic Relief Services
CSOs	Civil Society Organizations
DiMP	Disaster Mitigation for Sustainable Livelihood Program
DMISA	Disaster Management Institute of Southern Africa
DPPA	Disaster Prevention and Preparedness Agency
DPPC	Disaster Prevention and Preparedness Commission
DRM	Disaster Risk Management
DRMFSS	Disaster Risk Management and Food Security Sector
DRR	Disaster Risk Reduction
EOC	Emergency Operation Center
EIA	Environmental Impact Assessment
EPHI	Ethiopian Public Health Institute
EDRMC	Ethiopia Disaster Risk Management Commission
EU	European Union
EWI	Early Warning Information
FEWS NET	Famine Early Warning Systems Network
FGD	Focus Group Discussion
GIS	Geographical Information System
GHG-MRV	Green House Gas - Measurement, Reporting and Verification
GO	Government Organization
GRID	Global Report on Internal Displacement
GTP	Growth and Transformation Plan
ICDM	Intergovernmental Committee on Disaster Management
ICS	Incident Command System
ICT	Information Communication Technology
IDMC	Internal Displacement Monitoring Center

IDPs	Internally Displaced Persons
IGAD	Intergovernmental Authority on Development
ILO	International Labor Organization
IPCC	Intergovernmental Panel on Climate Change
KII	Key Informant Interview
KSA	Knowledge, Skills and Attitude
LEAP	Livelihood Early Assessment and Protection
MAC	Multi-Agency Cooperation
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NDVI	Normalized Difference Vegetation Index
NGOs	Non-Governmental Organizations
NIMS	National Incident Management System
NPDPM	National Policy and Strategy on Disaster Prevention and Management
RRC	Relief and Rehabilitation Commission
SAR	Search and Rescue
SCI	Save the Children International
SDGs	Sustainable Development Goals
SIPERE	Strengthening Institutional Capacity & Preparedness for Emergency Response in Ethiopia
SPIF	Strategic Programming and Investment Framework
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
TNA	Training Needs Assessment
TTB	Technical Training Board
USAID	United States of America for International Development
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UN	United Nations
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WASH	Water, Sanitation, and Hygiene

Executive Summary

Drought preparedness, response, and disaster risk management in Ethiopia have evolved over the past 50 years. The 1970s and 1980s were the formative years during which mobilizing and delivering food to drought-affected populations was extremely challenging. The first policy on disaster preparedness and prevention was published in 1993 followed by the first targeting guidelines in 2000 (revised in 2011). The National Disaster Risk Management Policy and Strategy came into force in 2013. Informed by the Hyogo Framework for Action (2005-2015), the policy represented a paradigm shift in DRM approaches; a shift from drought and emergency response to a holistic, proactive, multi-sectoral and, multi-hazard DRM approach.

This paradigm shift requires a change in the mindset of all personnel involved in DRM from the ground upwards, including communities, DRM experts at the woreda, region and federal levels, and policy makers. Training is a vital component of building institutional capacity for DRM across all sectors. EDRMC, as a coordinating body, has an institutional mandate to ensure adequate training is provided, training infrastructures are strengthened (both traditional and digital), skills are shared, attitudes and mindsets shift, and knowledge management on DRR and CCA is established. It also ensures sustainable funding and resources are secured and allocated equitably among regions.

Decisions regarding all these aspects of capacity development and knowledge management must be based on evidence. To this end, EDRMC, in cooperation with ADPC, initiated a process for identifying training needs of EDRMC and other stakeholders working on DRM and CCA via the training and needs assessment (TNA) outlined in this report.

The overall objective was to complete a TNA and institutional mapping on DRM and CCA at both the federal and regional levels. At the federal level, EDRMC and relevant ministries included. Four regional states, namely Afar, Somali, Oromia and Amhara were also included in the needs assessment. The Addis Ababa City Government, representing the urban situation, was also part of the study.

Sample woredas and institutions were selected to collect primary and secondary data using focus group discussions (FGD), key informant interviews (KII) and structured questionnaires. Secondary data were collected from policies, strategies, guidelines, manuals, reports, and previous training documents related to DRM and CCA. A review of international best practices also informed the TNA process.

The results of the TNA indicated that EDRMC staff and its stakeholders are receiving various DRM and CCA related trainings at different levels (i.e., federal, regional, zonal and woreda). However, there is little or no evaluation of the training outcomes to determine whether trainees have gained new knowledge, skills, a shift in attitudes, or enhanced their ability to properly implement the national DRM policy and strategy on the ground. Both the qualitative (e.g., FGDs and KIIs) and quantitative survey results found that the knowledge, skills and attitudes of stakeholders is rated average or below average. Furthermore, the training materials and even the themes of the trainings have not been documented properly, indicating a gap in the knowledge management system.

The main reasons for low attention to knowledge management are limited basic knowledge, experience, and skills in DRM and CCA; high staff turnover, lack of DRR and CCA mainstreaming in relevant sectors, weak systems and coordination mechanisms, limited and uncoordinated refreshment trainings, poor training documentation and transfer of training skills, absence of self-standing organizational set up, poor utilization of training outputs, and logistics.

Based on the analysis of the training gaps in the areas of DRM and CCA, 26 training themes were identified and prioritized by the stakeholders and accordingly training curricula have been prepared for the identified and prioritized training themes. Whereas most of the training needs could be addressed locally, some area specializations have been identified for potential overseas training.

The training gaps shall be addressed through in-house training, online platforms, South-South Cooperation and knowledge sharing through closely working with research and academic institutions. The TNA was conducted at each level of administration in the selected regions, zones and woredas and generated a comprehensive view of training needs, institutional mapping and documentation of the DRM and CCA trainings that could form the basis for a training and research strategy. It is recommended to implement the prioritized training themes and enhance the capacity of stakeholders through in-house and online trainings, creating an accessible web portal, and establishing South-South Cooperation with developing countries that have excelled in DRM and CCA practices.

1. BACKGROUND

1.1 Rising Disaster Risks and Impacts: Global Perspectives

Globally, the frequency and severity of natural and human-induced disasters have increased. Over the past four decades in particular, hazards such as earthquakes, volcanic eruptions, landslides, tsunamis, tropical cyclones, and other severestorms have been on the rise. Tornados and high winds, river and coastal flooding, wildfires and associated haze, drought, sand/dust storms, pest infestations, and conflict-induced disasters have dramatically increased and have caused loss of human lives and livelihoods, destruction of economic and social infrastructure, and environmental damage.

According to the Annual Disaster Statistics Report (2019), the annual average death over a ten-year period (2005 to 2015) was nearly 70,000 people with 564.4 million people affected by disasters. In 2018, the world experienced 315 disasters with 11,804 deaths and over 68 million people affected.

Due to the complex nature of climate change, associated adverse consequences are yet to be explained in full. Notably, the years from 2015–2019 were recorded as the warmest years on record and climate change-induced disasters, namely drought, flood, cyclones, and wildfires have been more intense and frequent.

In developing countries in particular, climate-induced disasters are becoming more severe and frequent resulting in increased life and economic loss. In the years between 1998 and 2017, climate change and geophysical-induced disasters have claimed the lives of 1.1 million people and left 4.4 million people injured, homeless, and displaced (UNISDR, 2018).

Conflict-induced disasters are also occurring in many countries particularly in low-income countries. These conflicts have caused displacement of people from their residences, and loss of lives and livelihoods. According to GRID (2019), 28 million new displacements associated with conflicts were recorded in 2018 across 148 countries. Ethiopia, Democratic Republic of Congo (DRC), and Syria accounted for more than half of the global internally displaced persons (IDP) figure. Protracted crises, ethnic violence over scarce resources and land shortages, and lack of good governance are driving factors behind the growing IDP crisis.

There are several indicators for measuring impacts of disasters. For this work, the economic and social impacts are highlighted. In 2018 alone, the economic impacts of natural disasters were calculated at $165 billion. Developed and developing countries experienced unequal losses with the highest economic impacts being incurred in developed countries while the risk of exposure, death and some other non-economic expenses is by far highest in developing countries (CRED, 2019; Global Risk Reports, 2020).

Unbalanced economic losses have been witnessed in developing countries for numerous reasons, including but not limited to minimal capacity to respond to disasters, low level of development, fragile infrastructure (e.g., poorly constructed houses and roads), vulnerability of income generating activities, low capacity of political and social organizations, and the limited capacity of early warning systems leave theme extremely vulnerable to climate induced disasters. The adverse impacts of disasters in developed countries have been reduced due to their capacity to prevent and/or mitigate and respond in terms of rebuilding and rehabilitation of socio-economic loss due to disasters.

Migration and internal displacements are the most important social indicators of disasters. In the years 2008 to 2016, more than 20 million people have migrated annually due to disasters associated with floods, storms, wildfires, and warmer temperatures. Climate change has led to rising tensions between neighboring countries that may have already been in a fragile state due to unsettled boundaries. For example, conflicts over water as a vital resource have taken place in 45 countries (e.g., clashes between upstream and downstream areas) in 2017. In addition, the transitions of many

countries to decentralized renewable energy economies is also expected to impact geopolitical positions of states, which may lead to new disaster risk susceptibilities for some states and regions.

In summary, conflict is the principal cause of internal displacement of people from their residence, and about 28 million new displacements associated with conflicts wererecorded in 2018 across 148 countries (GRID, 2019).

1.2 Context of Disasters and Preparedness in Africa

In recent years, drought has been one of the most catastrophic disasters, followed by flood in the African continent. Drought has been affecting millions of lives and livelihoods and most affected were South Africa, Ethiopia, and Niger. In South Africa, 15 million were affected in 2003 and 12.6 million in 2004. In Ethiopia, 14 million (2003) and 10.2 million (2015); in Niger 7.9 million people (2009). These figures are likely to increase in the years to come as the Africa's share of global population rises from 13% in 2000 to 26% by 2050. It is projected that Africa's population will reach 2.5 billion people in 2050, of which up to 50% will be in urban areas. This drastic increase in population and urbanization will increase areas and people vulnerable to disaster risks. East African countries like Kenya, Sudan, Ethiopia, and Somalia are known for their high vulnerability and risk of drought-induced famine and associated shortage of food (CRED, 2009).

As part of the Agenda 2063, the Africa Union Commission has prepared the African Regional Strategy for DRR (2006-2015) and its successor, the Sendai Framework for DRR (2015-2030). The plan of action recognizes the prior significance of DRR in realizing Goal 7 of the Agenda 2063 stated as environmentally sustainable climate-resilient economies and communities as an effort to create a "prosperous Africa by way of inclusive growth and sustainable development."

As a result of armed conflicts and human right violations, large numbers of people are displaced across the continent. To ameliorate the challenges of conflict-induced disasters and associated adverse impacts, the African Union developed a framework to prevent and respond to displacements. This framework of action, the African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa, known widely as the "Kampala Convention" was adopted in 2009 and began implementation in 2012 to defend the rights of displaced people (The Kampala Convention, 2015).

As part of the African, Caribbean and Pacific-European Union (ACP-EU) Cooperation Program, the "Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities," was developed in 2013. The objective of the program is to strengthen the resilience of countries and communities in sub-Saharan Africa to the impacts of human and natural hazard-induced disasters. It is an all-inclusive DRR program that brings together numerous organizations with different mandates and capabilities (UNISDR, 2018). The 2015 third UN conference on DRR and the 2017 Global Platform for DRR have upheld the African priority agenda and basic development concerns from the implementation of the Sendai Framework for DRR (2015-2030).

1.3 The Evolution of Disaster Risk Management in Ethiopia

Ethiopia is the 2nd most populous country in Africa after Nigeria with a population of over 112 million (50% female) with an estimated life expectancy and age dependency ratio of 66.3 and 78.10, respectively (The Borgen Project[1], World Bank, 2019). The country accounts for 1.47% of the world population and ranks 12th among the world's most populous countries.[2]

[1] https://borgenproject.org/10-facts-about-life-expectancy-in-ethiopia/#:~:text=10%20Facts%20About%20Life%20Expectancy%20in%20Ethiopia%20Ethiopia,United%20States%2C%20the%20average%20life%20expectancy%20is%2079.

[2] https://www.worldometers.info/world-population/ethiopia-population/ retrieved on 13 March 2021.

Ethiopia is prone to a wide range of natural and human-induced disasters, which mainly include droughts, floods, human and livestock epidemics, crop pests (including desert locust), landslide, erosion, desertification, and conflict. However, drought remains the country's leading hazard, while flood is the second major hazard. In recent years, climate change and associated risks, particularly flood-induced disasters, have increased in magnitude and type, area coverage and frequency.

As many countries of the world are experiencing, COVID-19 has become a key disaster risk in Ethiopia. At the start of the pandemic, it was estimated that 15 million people would need food assistance due to COVID-19-induced acute food insecurity. Together with the 8 million Productive Safety Net Program and estimated 4.5 million drought emergency, the total number emergency assistance could reach 30 million. The conflict at the time of writing this report has exacerbated the situation.

In 1973, the Ethiopian government established a formal institution for disaster response called the Relief and Rehabilitation Commission (RRC). Its objective was to mobilize and distribute relief resources (primarily food) to drought-affected people in Northern Ethiopia. RRC was effective in saving the lives of people affected, but its role was not significant in reducing vulnerabilities to disaster risks and poverty.

In 1978, RRC was re-organized and merged with the Settlement and Awash Valley Development Authority with responsibilities of relief, rehabilitation, and re-settlement. In 1995, the name of the institution changed to the Disaster Prevention and Preparedness Commission (DPPC) with the responsibility of providing emergency supplies and disaster prevention by linking relief to development. In 2004, it was modified to Disaster Prevention and Preparedness Agency (DPPA) with a mandate of emergency response.

Ethiopia developed its first National Policy and Strategy on Disaster Prevention and Management (NPDPM) in 1993. Though it was a reactive relief and emergency support-oriented policy, it was instrumental in familiarizing the concepts of disaster, early warning, and preparedness at the federal, regional, and woreda levels. In 2013, the national DRM policy and strategy was developed. The policy is regarded as representing a "paradigm shift" because it shifted the focus from drought to multi-hazard and multi-sectoral approaches.

Prior to the development of the policy, a major civil service reform was introduced in 2008. A management tool known as Business Processing Re-Engineering (BPR) was used to redefine and streamline roles, responsibilities, and structures of many organizations. As a result, the DPPA was re-named as Disaster Risk Management and Food Security Sector (DRMFSS), with the incorporation of a food security component from the ministry of Agriculture. As of 2015, the food security component again shifted back under the the Ministry of Agriculture and the disaster risk management component was re-organized and named as Ethiopia Disaster Risk Management Commission (EDRMC), with the mandate to coordinate all disaster response efforts. Changes at the federal level have almost always resulted in corresponding changes at regional levels.

The country has also developed the DRM Strategic Programming and Investment Framework (DRM-SPIF) in 2014 that articulated the roles of various developments and humanitarian partners as well as the government institutions in DRM. Furthermore, it has developed and implemented climate change adaptation and mitigation strategies such as the Climate Change National Adaptation Program of Action and the Climate Resilient Green Economy (CRGE).

Early warning is a strategic component of DRM that relies on weekly and monthly data collected from all districts and the database has been maintained since 1993. These data are fed into computer-based tools developed by the Government of Ethiopia in collaboration with humanitarian partners. These are the Early Assessment and Protection (LEAP) tool developed in 2008 by the Government of Ethiopia (GoE) and the World Food Programme (WFP), as well as the Livelihood Impact Analysis Sheet (LIAS) developed in 2008 by the GoE and USAID. Other early warning systems

such as USAID's Famine Early Warning Systems Network (FEWS-NET) and WFP's Vulnerability Analysis and Monitoring (VAM) are also contributing to the national early warning and response system.

To realize the implementation of the national DRM policy and strategy, an information management system was developed based on the new DRM approach and strengthened with skilled human resources. Risk profiles have been developed for nearly all the woredas based on the information collected from communities, households, and other DRM actors.

In recent years, conflict-induced internal displacements in many parts of Ethiopia are growing concerns related to human-induced disasters. The 2019 Global Report on Internal Displacement revealed that Ethiopia had hosted 2.9 million new displacements in 2018. Moreover, disease outbreaks and desert locust infestations have also been critical development challenges affecting the health and livelihoods of the population in Ethiopia.

Ethiopia is a signatory to several Global Climate Change Initiatives including the Paris Agreement on Climate Change, the Sendai Framework for DRR, the Global Framework for Climate Services - Innovation and Adaptation, the Geneva Convention on Long-Range Trans-Boundary Air Pollution, and the United Nations Framework Convention on Climate Change.

In 2015, EDRMC was re-organized into two sectors and seventeen directorates, with two deputy commissioners. The first sector is Disaster Risk Reduction with the directorates of DRR and rehabilitation; Early Warning and Emergency Response; DRM Study, Research and Training; and Partnership Cooperation and Resource Mobilization. The DRM Study, Research and Training Directorate is the focal unit for the implementation of recommendations of this TNA and the ensuing training and research strategy. The second is the Strategic Logistic Management Sector that has the directorates of Civil Engineering; Quality Control and Management; Strategic Food and Non-Food Storage Administration; and Logistic Operation Management. There are also nine additional directorates directly accountable to the commissioner (Figure 1).

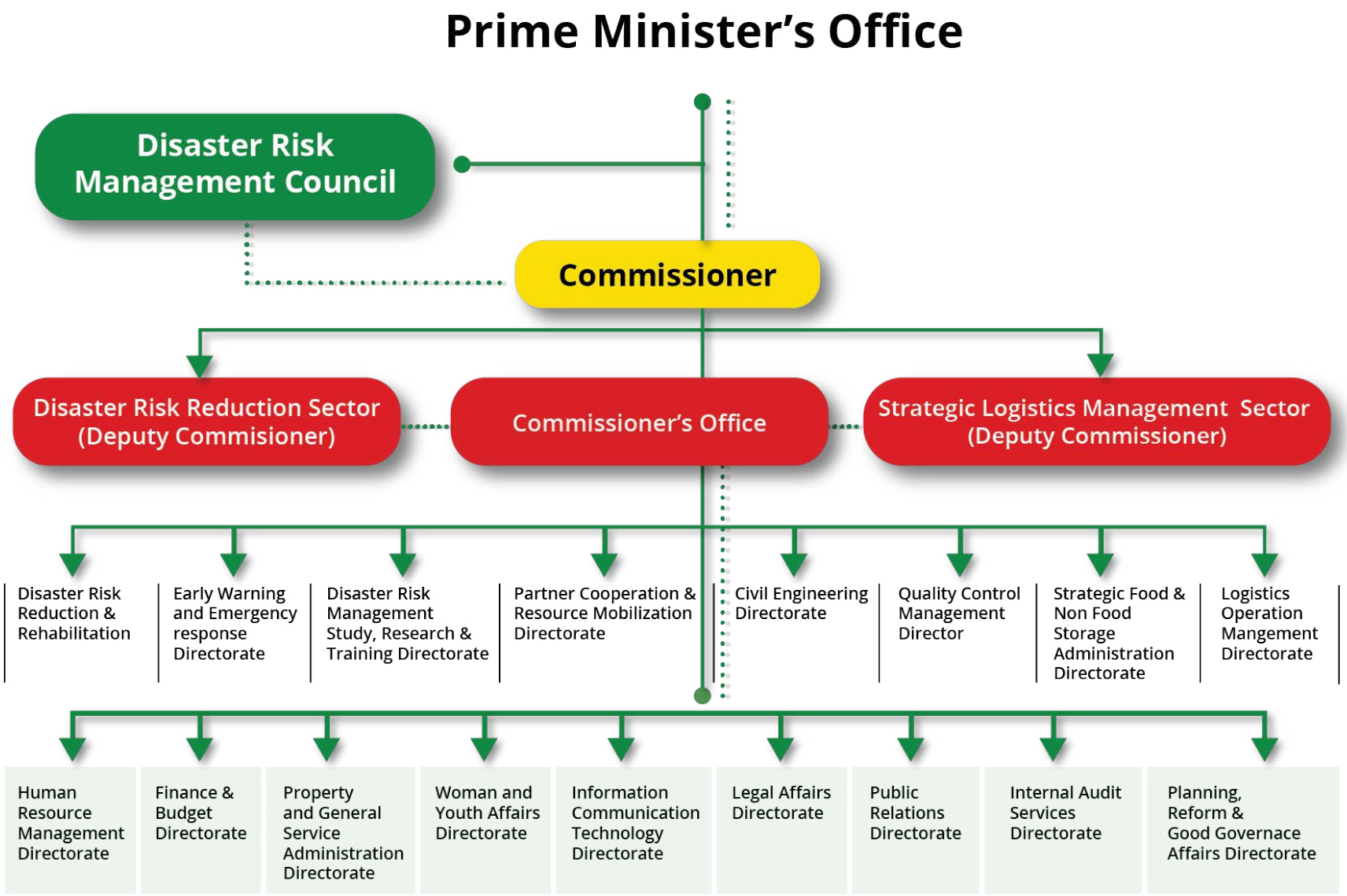

Figure 1: EDRMC's Organizational Structure

Source: DRM-SPIF, 2015

Apart from short-term and ad hoc training offered by NGOs, DRM as a subject of training and research is relatively recent in Ethiopia. Bahir Dar University is a pioneer higher learning institute to introduce formal education in DRM. In 2006, it established a fully-fledged Institute of Disaster Risk Management and Food security (BDU-IDRMFS). It presently offers undergraduate, postgraduate, and PhD-level research and training programs.

The stakeholder mapping in Section 3.5 shows that most regions have at least one university teaching and researching DRM and CCA with varying degrees of depth: These are Samara University (Afar), Jigjiga (Somali), Gambella (Gambella), Ambo (Oromia), Arsi (Oromia), Haramaya (Oromia), Dire Dawa (Dire Dawa Administration), Arba Minch (SNNPR), Mekelle (Tigray), and Addis Ababa University. Other training and research institutes working on DRM and CCA include the Ethiopian Public Health Institute (EPHI), Forestry, Bio-diversity, and East Africa Desert Locust Prevention and Control center.

1.4 Overview and objective of SIPERE Program

EDRMC and the Asian Disaster Preparedness Center (ADPC) are jointly implementing the Strengthening Institutional Capacity & Preparedness for Emergency Response in Ethiopia (SIPERE) in selected regions of Ethiopia with funding from the Bill and Melinda Gates Foundation (BMGF). The project strengthened emergency coordination mechanisms and addressed the early recovery needs of flood affected communities. It worked through existing government mechanisms and organizational structures from the national to community levels. Hence, the implementation of the program has brought opportunities for EDRMC to test and improve the effectiveness of response systems and draw lessons that could enhance the institutional capacity and manage similar emergencies interventions.

The overall aim of the project is to improve the institutional and technical capabilities of EDRMC and key sector ministries including the Ministry of Agriculture, and Ministry of Health to prepare for, respond to and recover from disasters. In order to meet its objectives, the project is implemented at federal, regional state and woreda levels and works with stakeholders who have been involved in humanitarian response and risk reduction activities in the country. In general, the program has created opportunities for capacity development, provision of technical inputs and tools for preparedness, emergency response, and recovery planning.

2. RATIONALE AND OBJECTIVES OF THE TRAINING NEEDS ASSESSMENT

2.1 Rationale

The current working environment for disaster risk management is influx. This is mainly due to the interplay of complex and dynamic factors such as climate change, conflict, and equity issues. There is an urgent need for organizations working on and coordinating disaster risk management activities to establish robust systems and structures and to provide regular capacity development for all staff and partners.Appropriate training will lead to higher quality performance, enhancement in the capacity of employees, and enable them to easily adapt to the ever-changing demands of DRM and CCA.

To enhance the capacity of DRM staff, the EDRMC underwent a re-structuring in 2015 and established a DRM Study, Research and Training directorate. It is expected that the establishment of this directorate will have paramount significance for the achievements of EDRMC mandates in the national DRM policy and strategy.

Therefore, EDRMC aims to strengthen the newly established directorate and eventually become center of excellence for DRM training and research. However, a systematically and rigorously identified DRM and CCA training and research needs are lacking.

To reap the most benefit out of capacity building efforts, trainings must be systematically identified and professionally designed and implemented. Institutions that are currently providing DRM and CCA training and conducting research must also be mapped. This is the rationale for initiating this TNA exercise, which enables EDRMC and relevant sectors to (i) understand the problems faced by the DRM sector and identify capacity building and training gaps; (ii) prioritize the contents of the trainings and map expectations of key stakeholders and the community; (iii) enable EDRMC and its stakeholders to prepare detailed training manuals and guidelines on DRM and CCA, and design and develop courses; (iv) design policies and strategies; and (v) implement and Evaluation.

2.2 Objectives of the Training Needs Assessment

Needs-based, tailored, and adequately designed trainings and associated strategies are at the core of DRM and CCA capacity development endeavors. A TNA identifies the specific knowledge, skills and attitudes of employees needed to increase productivity, efficiency, and innovation in their jobs. The TNA, institutional mapping, and training documentations on DRM and CCA will provide a roadmap that can be used as a guideline for designing and implementing DRM and CCA capacity building activities and realize the expected Centre of Excellence for Disaster Risk Management knowledge, practice, and innovation. Improving the performance of employees based on the identified needs and gaps will contribute to the organizational strategic goals and objectives including the establishment and strengthening of DRM research and training centers.

The specific objectives of the TNA are to:

- Identify and prioritize relevant training and research needs;
- Map institutions that are providing training and conducting research in DRM and CCA;
- Recommend capacity building activities including the development of training curricula, courses, contents, and tools for DRM and CCA; and
- Document existing DRM and CCA-related training and make them available on EDRMC's DRM virtual platform.

The results of the TNA have been used to develop the DRM research and training and roadmap for the newly established DRM Study, Research, and Training Directorate of EDRMC.

2.3 Scope of the Training Needs Assessment

The TNA on DRM and CCA was conducted in four regional states, namely Afar, Somali, Oromia and Amhara, and Addis Ababa City Government. These regional states were selected as target study areas systematically considering agro-ecology and livelihoods, with the goal of selection regions in which the data collected may be representative of other regions for the following reasons:

- ADPC is supporting EDRMC through SIPERE pilot program in Afar, Somali, Amhara and Oromia regional states. Thus, ADPC and EDRMC have the interest to concentrate on the already piloted program areas for this assessment.
- The wider geographical boundary extensions of the selected regions to non-targeted regional states were assumed to represent the DRM and CCA situation in Ethiopia. The common geographical boundary shared with non-targeted regions indicates that the DRM and CCA characteristics are also shared.
- Addis Ababa City Government was selected as a targeted study area to represent the urban DRM and CCA of the country.

In each of the targeted regional states and city government, respective zones and woredas were selected on the bases of agro-ecological zones, and EDRMC's humanitarian response cluster hot spot classification ranking system updated in June 2020. Accordingly, three zones and woredas were selected from Amhara and Oromia regions considering one woreda from each agro-ecology (i.e., lowland, midland, and highland) and DRM hot spot classification ranking (i.e., priority rank number 1-3); and two zones/sub-cities and woredas were selected from Afar and Somali regions, and Addis Ababa City Government. In Afar and Somali regions, hot spot classification rank number one and two were selected whereas in Addis Ababa City Government, two sub-cities and woredas were selected on the basis of the major purposes of the sub-cities and woredas: residential and industrial zones (Table 1).

Furthermore, a sample of federal institutes, NGOs, and UN agencies were selected to represent the overall DRM and CCA training conditions of the targeted regions, City Government and non-targeted regions as well. To address the general and specific objectives of the assessment, the study focused at three different levels. At federal level, EDRMC and line ministries working on DRM and CCA were consulted. At the regional level, the corresponding bureaus of disaster risk management and line bureaus, commissions, and agencies in Amhara, Oromia, Afar, and Somali regions were consulted. Similarly, relevant government structures at zonal and woreda levels provided the necessary input for the assessment. International and national NGOs and UN agencies and research and academic institutes were also among key informants.

2.4 Analytical Framework of the Assessment

The theoretical rational of the TNA and institutional mapping is that investing in training on DRM and CCA in comprehensive manner will significantly improve individual and institutional capacities, there by reducing the impacts of disaster risks, other things being constant. The DRM-SPIF, whose key goal is to reduce disaster risks and the impact of disasters through establishment of a comprehensive and integrated disaster risk management system, forms the basis of the proposed analytical framework. The assessment used a practical, needs-based, outcome-focused "framework for thinking" to identify the in-house existing capacity, the current needs, as well as the gaps and roadmap of how to meet those needs. The conceptual framework for the TNA and institutional mapping is based on:

- An assessment of in-house capacities of EDRMC and its stakeholders, as well as a context analysis forms the bases for identifying gaps and the subsequent training requirements.
- The training strategy embraces a systematic approach to training and ensures that training are designed and delivered on the basis of clearly identified training needs.
- Institutional spaces in sectoral offices at various levels remain key aspects for training planning, implementation and monitoring for DRR and CCA in the context of the wider disaster risk management.
- Investing in training on DRR and CCA in a comprehensive manner will significantly improve individual and institutional capacities, thereby reducing the impacts of disaster risks.
- A strategic approach to managing DRM training is guided by a collective, comprehensive, and context-specific strategic roadmap that remains flexible to emerging and changing priorities and needs. The roadmap aims to address all dimensions of capacity development including training and research-related factors.

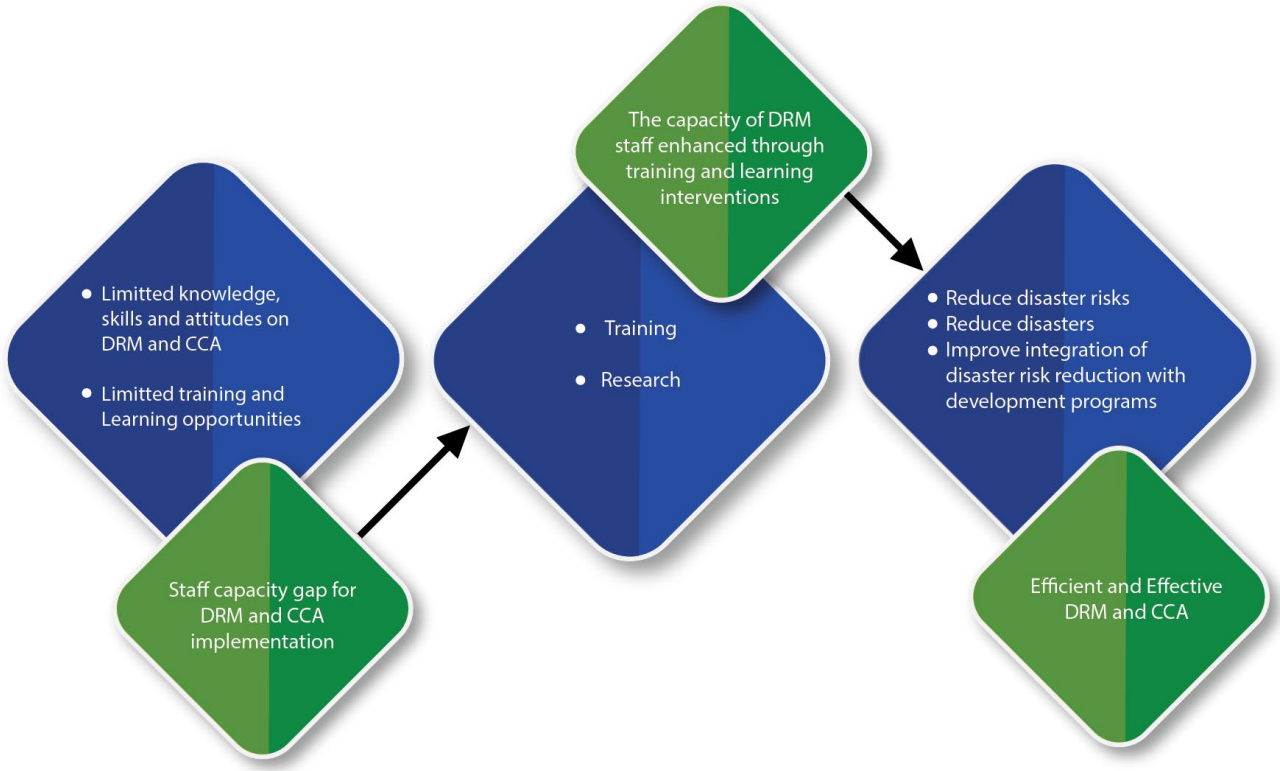

Figure 2: Conceptual Framework of the TNA

Source: Adopted from Lalita Kumari et. al.,2017

2.5 TNA Methodology

2.5.1 Assessment Procedures and Data Quality Assurance Mechanisms

As stated in the scope of the assessment, the TNA was conducted at federal, regional, zonal and woreda levels. During assessment, the following study development steps were followed: initial meetings with EDRMC and ADPC staff members, context review, inception report presentation and amendment, pre-test of tools, refinement of methodology and tools and ongoing progress reports via virtual means and face-to-face communication.

2.5.2 Target Areas Selection

To address the needs and interests of each region, representative zones and woredas in each of the regional states were selected for the assessment based on agro-ecological zones and identified humanitarian response hot spot ranked areas.[3]

Of the targeted regional states, Amhara and Oromia regions have three agro-ecological zones (i.e., highlands, midlands and lowlands) and based on EDRMC's humanitarian response clusters hot spot classifications system (ranked from 1-3), three woredas were selected from each region. The hot spot classification ranking system took into consideration the status of each woreda in terms of nutrition, health, agriculture, education, water, market, and protection access as of June 2020. Thus, in each of the two regional states (i.e., Amhara and Oromia), three woredas that ranked from 1-3 without compromising the agro-ecological bases were selected for the assessment. The other two regions, namely Afar and Somali, have similar lowland agro-ecological zones and hot spot ranks across the regions; thus, two representative woredas from each of the two regions were selected. At the Addis Ababa City Government level, two sub-cities were selected based on the historical experiences of disaster risks and the geographical advantages and disadvantages; and finally, two woredas (woreda 09 from Akaki Kality and woreda 15 from Bole Sub-cities) were selected as study sites (Table 1).

Among the higher institutes providing DRM and CCA trainings, BDU, Samara, Jigjiga and Ambo universities were taken as samples for the TNA study as they belong to the TNA selected sample regional states. Within the selected study sites, key informant interviewees, focus group discussants and survey respondents were purposively selected based on the adequacy of information they have on the issue under consideration.

2.5.3 Data Types and Collection Methods

2.5.3.1 Secondary Data Collection Methods and Sources

The document review component of the assessment was carried out with the goal of understanding the socio-economic context of the target regions and woredas to assess previously provided and ongoing training in the country by various sectors, organizations, and institutes. To this effect, the following internal and external documents of both published and unpublished were thoroughly reviewed in the TNA process:

- Research institute and university produced reports and curricula
- Reports produced by EDRMC
- Reports in the areas of Training and Research (from all stakeholders)
- Reports on lessons learned from study documents in line with DRM and CCA
- Guideline for Mainstreaming DRM into Investment Decision in Ethiopia
- Baseline Study for Strengthening Institutional Capacity and Preparedness for Emergency Response in Ethiopia
- Reports from National Meteorological Agency of Ethiopia
- Reports from the Intergovernmental Panel on Climate Change (IPCC)
- Reports from United Nations Framework Convention on Climate Change (UNFCCC)
- National Disaster Risk Management (DRM) Policy and Strategy
- DRM Strategic Program and Investment Framework (DRM-SPIF)

[3] The humanitarian response clusters hot spot classification ranking system was updated in June 2020. In Amhara and Oromia regions, three woredas from each were selected: one representative woreda from each ranked 1st, 2nd and 3rd, was targeted. In Afar and Somali regions, due to the uniform agro-ecological setting and hot spot classification ranking (majority 1st and 2nd), two woredas from the 1st and 2nd hot spot ranked woredas were targeted.

- Woreda Disaster Risk Profiling Document/Risk Mitigation/Adaptation Planning Guidelines
- Climate Resilient Green Economy (CRGE) Strategy Document
- GTP II (Growth and Transformation Plan II) of EDRMC performance reports
- Sustainable Development Goals (SDGs)
- Sendai Framework for DRR
- Climate and Disaster Risk Governance Situation and Capacity Assessment Report
- African Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction in Africa
- Human resource policy, procedures, and manuals of the target institutions

2.5.3.2 Primary Data Collection Methods and Study Design

Although there are distinct benefits of quantitative and qualitative research methods depending on the nature of the research question, there is also a growing acceptance of the need for integrating the two approaches. In this assessment, both qualitative and quantitative methods were applied. Primary data were collected from experts and community representatives through Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) in the selected regions, zones, and woredas to gather insights on the training needs of DRM employees at all levels. Due to the COVID-19 pandemic, the study was carried out utilizing electronic-based trainings and data collection approaches using telephone, e-mail, Skype, zoom meetings and Microsoft teams, despite the limited IT skills of the assessment participants and the intermittent networks particularly at the woreda level. The mix of data collection approaches enabled the team to use available media and accomplish the data collection tasks within a reasonable amount of time. The data collection tools employed depended on the availability of the technology and the skills, knowledge, and comfort level of the respondents.

2.5.4 Stakeholders Participation

The primary stakeholders participated in this study included EDRMC, Regional, Zonal and Woreda offices who provided information on the various aspects of TNA ranging from the planning and designing processes to the final reports.

Equally important was the data collected (both primary and secondary) from various other stakeholders such as research and academic institutions, ministries and line offices, UN agencies and NGOs/CSOs, as represented by their offices concerning each component of the TNA. They were contacted and reflected their views and opinions with respect to the existing training and research gaps and their respective contributions for addressing training needs of experts in EDRMC and their stakeholders at various levels.

2.6 Data Analysis Approach

2.6.1 Qualitative Approach

Utilizing a qualitative approach allowed for an in-depth study of selected issues and provided critical insights into interviewee perspectives, understanding the value system, norms, and attitudes of respondents towards the issues being studied. It also afforded the ability to study processes that may have affected outcomes and the context of certain situations.

The qualitative data collection instruments used in this study included document review, KII guideline and FGD guideline4. In the assessment process, various published and unpublished documents were critically reviewed. DRM and CCA issues were discussed with KII and FGD

[4] FGDs were conducted in the federal, regional, city government and woreda levels. The zonal level FGD was skipped as some of the regional targeted offices have limited (one to two) office representatives/focal persons in the zonal level and the data were captured by those limited Zonal KIIs.

participants, including previous trainings offered and research themes explored, the relevance and effectiveness of the trainings, training and research gaps, organizational setup, capacity gaps, training and research needs, horizontal and vertical communication and collaboration among DRM sectors, learning platforms and knowledge management practices, and availability of professional and experienced staff.

Table 1: Summary of KIIs and FGDs at the Federal, Regional, Zonal and Woreda Levels[5]

Level of Admin. / Category	Federal	Regional	Zonal	Woreda	Reserch & Training Institutes	UN Agencies & NGOs/ CSOs	Total
KIIs	20	65	132	132	7	7	363
FGDs	1	5	-	12	-	-	18

Lessons and Best Practices: Lessons and best practices are positive activities or systems that could be scaled up for use in similar situations in a context-specific manner. Effective integration and making use of tested practices, lessons and best practices into policies, procedures and strategies can help organizations remain effective in their programming.

Therefore, lessons and best practices on the development and implementation of DRM trainings and research from Thailand, South Africa, China, and the Philippines were reviewed and assessed. These countries have sophisticated DRM training centers that can serve as a means of learning and strengthening South-South Cooperation. The DRM training experiences of these countries is imperative and hence it is advised that EDRMC build networks with these training institutions to access relevant courses for its staff using blended approaches (i.e., online or face-to-face trainings). A comprehensive summary of the list of training courses is presented in the TNA finding sections of this document.

Institutional mapping: This process allows practitioners in the field of DRM to identify key actors relevant to the subject and to map their interactions, interests, and sources of power. Thus, the mapping exercise provides visual representation of institutions working in similar complementary areas, but with different development policies and areas of specializations in the community.

Strength, weakness, opportunity, and threats (SWOT) analysis: SWOT was employed to identify the capacity of DRM and CCA affiliated organizations included in the assessment.

2.6.2 Quantitative Approach

Quantitative data were collected using a survey with the staff to measure knowledge, skills, and attitudes. The purpose was to triangulate the data and information obtained through the qualitative assessment process. Secondary sources such as previous studies, reports and sectoral plans were also used to enrich the survey.

Survey Instrument and Individual Capacity Measures: A survey was developed based on the objectives of the TNA. The survey and other data collection instruments (KIIs and FGDs) were translated into local languages of the respective regions to ease communication and increase accurate understanding of the contents of questionnaire.

Sample Size Determination: The sample size was determined based on several factors. These included the level of aggregation for reporting survey results, total cost of the survey implementation, level of precision, logistical feasibility, and time. Taking these factors into account, all staff members of the targeted government sectors working in the DRM and CCA departments/teams were selected for the survey. The sample size was determined as per the availability of staff members working in the areas related to DRR and CCA in each of the targeted woredas, federal, regional,

[5] See annex 1 for details

and zonal levels. It was estimated that the sample size would be large enough to provide adequate representation of the population under consideration. A total of 107 respondents were selected from all levels of administration (federal to woreda) and the sampled experts filled the survey.

2.7 Data Entry and Analysis

2.7.1 Data Entry

The qualitative data included audio recordings, which were transcribed and translated. The quantitative data collected using a structured individual survey was manually cleaned and responses to close-ended questions were coded. Then, the data were entered into Microsoft Excel for data analysis.

2.7.2 Data Analysis

Content Analysis: This is the process of organizing information into categories related to the central questions of the assessment. Content analysis in research is using categorization and classification of speeches, written texts, interviews, discussions, images, or other forms of communication. It was applied to the KII and FGD data, and sought to identify individuals' or groups' similarities and differences, by noting major themes that emerged from interviews and discussion notes.

Narratives: Narrative inquiry is concerned with the production, interpretation and representation of experiences and documents related to the existing and desired DRM and CCA training. The collected data was narrated with descriptive and analytic data analysis processes.

SWOT Analysis: SWOT analysis is a strategic planning technique used to help an organization identify strengths, weaknesses, opportunities, and threats related to its capability and competition to achieve its purpose. The SWOT analysis technique was employed in this TNA to identify the existing conditions of organizations working in the areas of DRM and CCA both from the internal (strengths and weaknesses) and external (opportunities and threats) environments point of view. It also helped to assess the internal situation of the targeted organizations and the external enabling environments and deterring factors for strengthening the training and research capacities of DRM and CCA focused sectors. Through the SWOT analysis, the four dimensions (SWOT) of the organization in terms of training needs were traced clearly with the participation of EDRMC staff and its stakeholders at all levels and possible strategy was designed accordingly. The analysis of strengths will result in findings to support building upon strong performances of organizations, whereas the analysis of weaknesses will provide insights about the gaps and indicate possible interventions. Similarly, the analysis of threats will help to design appropriate risk reduction and mitigation strategies. Finally, the analysis of opportunities will provide the advantage of usingpotential opportunities and enabling environments to improve the performances of the targeted sectors for sustainable training and knowledge management.

Document Analysis: This analysis method was employed to seek convergence and corroboration using different documentary data sources such as DRM and CCA training manuals, policies, strategies, legal and regulatory guidelines, frameworks, plans, programs, and other related documents. This data analysis method is appropriate for addressing the second objective of the assessment "Documentation of existing DRM and CCA related trainings and making them available at the EDRMC's virtual platform." Both the primary and secondary data collected from the field were clustered and categorized based on major thematic areas and analyzed carefully to clearly articulate the TNA discussions and results section. This could lead to valuable recommendations for future training packages by clients and its partners.

3. KEY FINDINGS OF DRM AND CCA TRAINING NEEDS ASSESSMENT

3.1 Profile of the TNA survey respondents

Three indicators were used to document respondent's profile – sex and age distribution, and number of years working in DRM.

The survey respondents were 107 DRM and CCA experts and directors of whom 84.1% and 15.9% were male and female participants, respectively. The sex distribution of the survey participants indicates that the DRM and CCA field of study is dominated by men, which is probably true in most fields except commercial streams.

The age distributions of the survey respondents showed that 65.4% are 35-54 years old, which are the economically active group. From a capacity building perspective, this means they have experience and would require training to upgrade their knowledge, skills and attitudes as long as they stay in the DRM sector. The second largest group is the 20-34 age range which accounts for 34.6%, and again indicates the presence of economically active members working on DRM and CCA tasks. Figure 3 shows the absolute number of respondents by age.

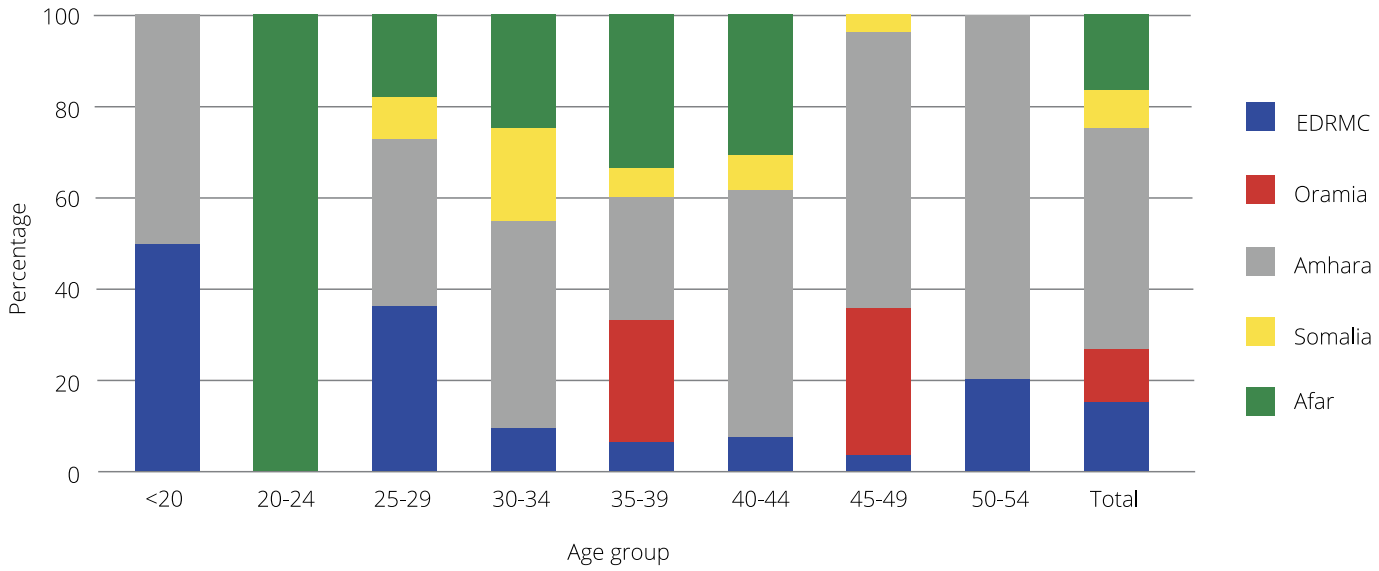

Figure 3: Age Distributions of Survey Respondents (n=107)

Source: Field Survey, 2020

Educational qualifications of survey participants' show that nearly 58% hold a BA/BSc degree followed by MA/MSc degrees' holders (36.6%), and less than 1% hold third degrees. The dominance of first degree holders is a major concern since the delivery quality training and research requires higher degrees and experience. Figure 4 shows the educational qualifications of the respondents.

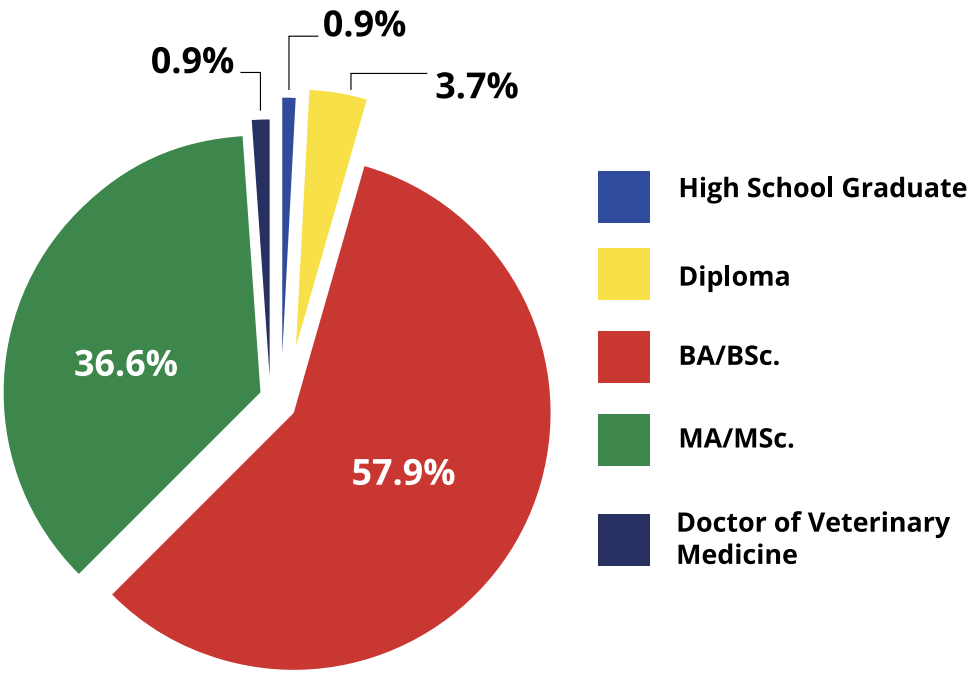

Figure 4: Education Level of Survey Participants

Source: Field Survey, 2020

Over two-thirds of the respondents (69.2%) have DRM and CCA related experience, ranging from 5 to 20 years. About 25% have less than 5 years of experience in DRM and CCA. It was also found that 5.6% have no experience in the area of DRM and CCA though they are working in the sector directly or indirectly.

Table 2: Work Experiences of Survey Participants in DRM and CCA (n=107)

Experience in Years	Survey Areas (%)					Total (%)
	Federal	Oromia	Amhara	Somali	Afar	
0	0.0	0.0	12.0	0.0	0.0	5.6
1-4	17.6	0.0	28.0	12.5	50.0	25.2
5-9	11.8	0.0	32	25.0	38.9	25.2
10-14	11.8	0.0	12.0	37.5	11.1	12.2
15-19	52.9	42.8	8.0	25.0	-	19.6
20+	5.9	57.2	8.0	0.0	0.0	12.2
Total	**15.9**	**13.1**	**46.7**	**7.5**	**16.8**	**100.0**

Source: Field Survey, 2020

3.2 DRM Capacity Gap Analysis

The capacity gap analysis aimed to assess the awareness, knowledge, and skills of key DRM experts and relevant sectors at federal, regional, zonal, and woreda offices. These key areas were assessed with reference to evidence-based planning, implementation, budgeting, monitoring and evaluation, coordination and collaboration, and training and capacity-building dimensions. Only staff members directly responsible for and involved in DRM and CCA program implementation were assessed.

The assessment identified that the level of reported knowledge was not always matched at the same level as the required skills and capacities to perform the roles and responsibilities associated with each functional area. FGD and KII participants identified major capacity gaps of stakeholders working in DRM and CCA, which are summarized below:

1) **Limited knowledge, experience, and skills:** The implementation of multi-hazard, multi-sectoral DRM policy and strategy (2013) requires in-depth knowledge, experience, and skill of various aspects of DRM and CCA. Furthermore, most leaders assigned to the sector do not have a DRM background nor experience to successfully achieve the vision and mission set out in the DRM policy CCA strategy. The profile of DRM workers presented above indicated that nearly 70% of them have 5 to 20 years of experience in DRM. This is by no means contradictory as people always need more experience and training or feel they need more experience and training.

2) **Lack of refresher training:** The FGDs and KIIs across the regions indicated that there are limited, or no refresher trainings provided to DRM employees, especially at the zone and woreda levels. Refresher training refers to re-training staff already qualified or previously assessed as competent in a field with the intention of updating skills and/or knowledge to a changed standard. A case in point is the paradigm shift from disaster focused system to multi-hazard risk management system.

3) **Limitation of documentation, knowledge and skills transfer:** The limited numbers of trainings provided mainly to the EDRMC and regional officers are not properly documented and the knowledge gained has not been properly transferred to other untrained or new staff members. There is no systematized culture of training materials documentation in DRM organizations. When trained experts are leaving offices, the training documents in the form of soft and/or hard copies are not formally transferred to other experts of the office for future use. There is less experience on knowledge management and cascading down ward to the organization structure. These knowledge management gaps require the sector to design clearly defined knowledge management strategies so as to use the existing knowledge for effective and efficient disaster risk management. The knowledge management practice should include documentation of trainings in soft and hardcopy that are easily accessible for all staffs of the EDRMC at all levels, cascading of trainings and workshops, identify and disseminate/share experiences, lessons and learning and document appropriately and apply for DRM.

4) **Poor utilization of training outputs:** Employees of DRM and non-DRM line ministries rarely practice what they learned on the ground mainly due to lack of or shortage of budget to knowledge management to the untrained staff, lack of decision makers' willingness to disseminate the trainings, and lack of commitment of the trained staff to share the knowledge and skills gained from the training. The practice of monitoring training outputs and outcomes after trainings by higher authorities is also limited.

5) **High staff turnover:** This issue is the most frequently mentioned across the civil service, and the DRM sector is no exception. The main reasons include both "push" and "pull" factors. The low salary scale of the Ethiopian Civil Servants is often cited as among the "push" factors. Alternative employment with local NGOs, INGOs, and UN agencies and more recently the private sector are among the "pull" factors. These organizations offer not only better salaries but also benefits6. In this day and age, "knowledge retention," and not "person retention," should be the focus. With the development of a well-functioning knowledge management system, staff

[6] Experience from some organizations (e.g., universities, the military) suggest that if they have invested in a certain staff by way of shot and long-term training, these staffs are required to sign an agreement to serve for a minimum period of time.

turnover will have little or no impact on its operation. With a minimum induction and pre-training of new staff the institution can function relatively smoothly.

6) **Inadequate DRM/CCA mainstreaming and coordination:** Mainstreaming is a process of fully incorporating CCA and DRR into development policy and practices across sectors. The DRM sector is unique in that all administrative units and executive organs of the government have the duty to make sure all their development programs and projects benefit sections of society vulnerable to manmade and natural disasters (Box 1).

Box 1: Legal obligations to mainstream natural and manmade disasters

Constitutional provisions: Article 89 (sub-article 3): Regional states, zones and woredas should undertake activities to avert natural and manmade disasters and produce effective response measures to alleviate the suffering of communities affected by a disaster.

Proclamation No 1097/2018: Responsibilities common to all ministries: (i) ensure the policies, laws, development programs and projects they formulate benefit women, children and youth; and (ii) create within the purview of their authorities, conditions whereby persons with disabilities, the elderly, and segments of society vulnerable to social and economic problems benefit from equal opportunities and full participation.

Source: cited in Alinea Intentional, 2021

The respondents also noted that higher officials, decision makers, as well as technical experts are members of steering committees, technical committees, and taskforces. Despite these legal and institutional provisions, the KII and FGD participants indicated that DRM and CCA are not mainstreamed across line ministries. The respondents went further to emphasize the lack of systematized, comprehensive, and functional coordination systems to support DRM officers and officials to make the respected line ministries responsible and accountable if they do not discharge the DRM and CCA roles and responsibilities. This limits the efficiency and effectiveness of DRM policy and SPIF. As documented in Box 1 above, there are legal provisions to mainstream and collaborate on DRM and CCA issues. These legal provisions should part and parcel of the training on DRM/CCA.

7) **Weak logistics:** The availability of logistic services plays an important role for the effective coordination and response of DRR and CCA interventions. Despite the importance, the KII and FGD participants expressed that the logistics requirements are not as expected, particularly at zonal and woreda levels. Early Warning and Response Offices and teams are expected to work with the local community but they often do not have the required logistics in place, particularly transportation. This may be attributed to the placement of the Early Warning and Response Team under the Agricultural Development Office which has limited logistics resources. In addition, limited attention is given from the higher officials and cabinet members to the DRM sector, especially at the woreda level. The organizational structure is also not as per the national DRM policy and strategy at these lower levels. It is important that the EDRMC and its partners understand the vital role of logistics plays in determining effective DRM implementations.

8) **Limited sources of finance:** The budget allocated to disaster risk management is lower than any work processes or teams of the sectors to accomplish the expected tasks of DRM and CCA, especially at zone and woreda levels, Hence, the DRM and CCA sectors are constrained by shortage of financial resources to conduct capacity building trainings (e.g., drills and simulation exercises) and share lessons and best practices at the grassroots level and to support the woreda and kebele level experts and the community.

A combination of these factors put the DRM and CCA sector in a vicious circle of little training, poor utilization of training outputs, staff turnover, and others.

3.3 Conceptual Understanding on DRM and CCA

In reference to the global conceptual understanding and implications of DRM and CCA, survey respondents were asked how they understand these two concepts. The presentation below is subjective self-reported "understanding." The respondents were not subjected to any systematic test of their understanding of DRM and CCA concept.

The results demonstrated that federal EDRMC, NGOs, UN agencies, regional, zonal and woreda DRM office experts and officials self-reported high levels of understanding on DRM and CCA. As to be expected, the first three targeted organizations have well established and comprehensive understanding on the terminologies and implications of DRR and CCA.

Furthermore, the regional, zonal, and woreda DRM staff members have better understanding than those in other equivalent sectors. This is also to be expected as DRM staff are the front-line respondents to disasters and are the coordinators of the DRM technical committee at their respective levels of administration. Even so, the TNA result indicated that the survey participants understanding is not to the level they are expected to have as front-line respondents to DRM and CCA issues.

The Federal Early Warning and Response and Disaster Risk Reduction and Recovery Directorates have a better understanding of the concepts of DRR and CCA than the experts' understandings at the regional, zonal, and woreda levels. This is again to be expected as the federal level experts have better access to learning resources including interaction with knowledge institutions.

The heads and subordinates working in DRR and CCA have sufficient knowledge about DRR and CCA. Respondents at this level mentioned the causes and consequences of climate change-related problems but were not able to create a comprehensive framework that causes the change in climate in the globe. Hence, they were partially able to identify the similarities and differences among climate change and DRR. The regional and federal respondents had similar understanding of the concepts. At the woreda level, the general understanding on the terms and concepts of DRR and CCA was found to be weaker than the level of understanding of employees at the federal and regional levels[7]. Again this is to be expected and it is not necessary that DRM/CCA staff at all levels have the same level of understanding of all issues. However, they all must have a common understanding on basic DRM/CCA concepts and issues. A training program should identify these basic issues and concepts, and narrow the disparity observed at federal, regional and woreda experts through continuous trainings and capacity development.

Adapting to climate change is about reducing vulnerability to current and projected climate risks. Vulnerability to climate change is determined in large part by people's adaptive capacity. A particular climate hazard, such as drought, does not affect all people within a community or even the same household equally because some people have greater capacity than others to manage disasters and disaster risks. The inequitable distribution of rights, resources and power as well as repressive cultural rules and norms constrain many people's ability to take actions on climate changes. Therefore, understanding the concepts of DRR and CCA is imperative to the experts working in the respective areas.

[7] The occurrence of recent drought and untimely flood and disease outbreaks including locust infestations in the pastoral areas of Ethiopia are stark reminders of how poverty reduction, food security, and pastoral livelihood strategies are still largely dependent on the climate system and vulnerable to seasonal variability and long-term changes. Progressive

3.4 Knowledge[8], Skills[9] and Attitudes[10]

Respondents were asked about their knowledge, skills, and attitudes (KSA) towards DRM and CCA. As can be seen in Figure 5, 21.5% of the respondents stated that they do not have knowledge, experiences, and skills and hence require immediate training interventions; 35.5% have little awareness but not detailed knowledge and skills and hence need trainings soon; nearly 2.0% know nothing about DRM and CCA; 46.7% do have sufficient knowledge but lack practical skills that necessitate practical advanced training; and only 6.5% of them have sufficient knowledge, skills, and attitudes and hence do not require training interventions. Thus, the one-way frequency percentage distribution over the survey respondents clearly showed that systematic and tailored DRM and CCA training is paramount to enhance the KSA of experts and officials working in the areas of DRM and CCA across various sectors and levels of administration. Besides the knowledge and skill gaps, the main observed gap is on the application of existing knowledge and skills for disaster risk management activities.

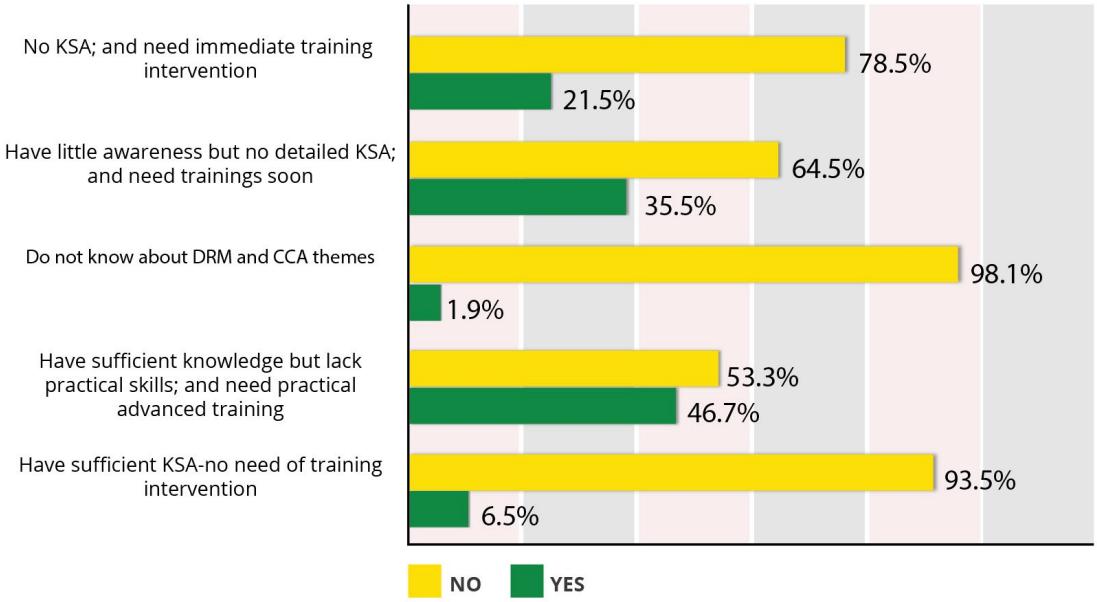

Figure 5: Knowledge, Skills and Attitudes towards DRM and CCA (n=107)

Source: Field Survey, 2020

3.5 Institutional Arrangements, Operational Mapping and Analysis

As discussed in the introductory section of this report, the organizational set up of the DRM sector has changed perhaps more frequently than other executive organs of the government. Changes at federal level are reflected at regional, zone (where it exists) and woreda levels. The mapping showed that offices, especially in the zonal, woreda, and kebele levels are not consistent with the regional and federal level structures, which makes the chain of command and communication difficult. At the time of mapping, the DRM offices were embedded within the office of Agriculture and/or Food Security, where this arrangement has diminished their leading role in

[8] Knowledge in DRM and CCA is the conceptual understanding of DRM staff on DRM and CCA concepts, conventions, policies, and strategies (e.g., DRM-SPIF, GTPII, Climate resilient green economy, DRM mainstreaming guidelines, disaster risk profiling document) and its implications and indicators. It also includes the understanding of climate and weather forecasting models and tools and training themes.
[9] Skills are acquired by DRM staff which are manifested by the application of DRM and CCA knowledge in disaster risk management activities to mitigate and reduce disaster risks, implementation of policies and procedures; and mainstreaming of DRM in sectoral plans.
[10] Attitude is the perception of DRM staff on DRM and CCA on its importance in saving lives and livelihoods and its contribution for socio-economic development as well as environmental sustainability.

the overall DRM coordination and leadership. Table 3 shows the diverse arrangements between federal, regional, and woreda levels.

For example, in the Amhara region, the regional office is organized in the name of Disaster Prevention, Food Security Program, and Areas in Need of Special Support Coordination Commission, and the structure at the zonal level is as Disaster Prevention and Food Security Representative Office with two teams: Early Warning and Response, and Food Security Coordination Program Teams. At the woreda level, it is structured as Early Warning and Response Team within the Office of Agriculture mainly because the system is predominantly focused on crop and livestock monitoring. The autonomy of regional states in formulating regional policies and restructuring government sectors resulted in some DRM structure variations.

In all the regional states and at the federal levels, DRM works are usually decided by the steering committee and the technical implementation team is nominated from different sectors and performs its roles and responsibilities with the supervision of each sector. Nevertheless, the committee members engage on DRM activities, if they are willing and hence the system does not have legal accountability, transparency, and linkage and coordination mechanisms among the stakeholders and concerned sectors. Therefore, the coordination roles of the DRM offices at various levels without proper structuring and absence of legal support and law enforcement policy is one of the prominent factors that hinder the enabling environment for smooth leadership, coordination and implementation of DRR and CCA projects and programs in a multi-stakeholder approach.

Table 3: DRM Organizational Setup in Ethiopia[11]

Administrative Level					
Federal	**Disaster Risk Management Commission**				
Regions and Addis Ababa	**Amhara**	**Oromia**	**Somali**	**Afar**	**Addis Ababa**
Region	Disaster Prevention, Food Security Programs, & Areas in Need of Special Support Coordination Commission	Disaster Risk Management Commission	Disaster Risk Management Bureau	Disaster Prevention & Food Security Program Coordination Office	Fire & Disaster Risk Management Commission
Zone	Disaster Prevention, Food Security Program Representative Office	Disaster Risk Management Office	No formal DRM structure except a focal person assigned by the bureau	No formal DRM structure except a focal person assigned by the bureau	Fire and Disaster Risk Management Branch Office
Woreda	Early Warning & Response Team	Disaster Risk Management Office	Disaster Risk Management Office	Early Warning, Rapid Response & Food Security Office	

Source: Field Survey, 2020

[11] At the federal level, the DRM organizational set up is named as Ethiopia Disaster Risk Management Commission (EDRMC)

3.6 Stakeholders Mapping

3.6.1 Mapping Higher Education and Research Institutes

Higher Education Institutes are primarily responsible for capacity development of the DRM workforce in the country. They provide both short- and long-term trainings; the former often on a request basis. When sector offices and organizations request training and research support, higher education institutions assign experts/professionals from a pool of talent based on the needs and interests of the requesting sectors. Selected higher education institutions offering DRM/CCA courses are presented below:

African Center for Disaster Risk Management (ACDRM) was established by the Government of Ethiopia in collaboration with UNDP, Cordaid, EDRMC and Addis Ababa University (AAU), and the College of Natural Sciences (host institution) to provide training and research support to EDRMC. The center has been engaged in both trainings and research since its establishment. Specifically, the center has:

- Prepared and delivered training modules on assorted topics related to DRM/DRR, CCA, Green House Gas-Measurement, Reporting and verification (GHG-MRV), data and research in DRM;
- Deployed both the back and front-end platform for online and blended learning; and
- Established veritable brain trust of expertise which can be called up on by EDRMC to prepare training modules and deliver trainings upon demand and as requested.

While AAU may not have a dedicated college or institute for DRM/CCA, several of its existing colleges teach and conduct research in DRM, climate change, and environment related topics. These include the Center for Environment and Development (the College of Development Studies); Climate Science (the College of Natural Sciences); and the Center for Earth Science (working mainly on earthquakes and other geological events under its Geological Survey Department).

Bahir Dar University located in Amhara region, established the Institute of Disaster Risk Management and Food Security (BDU-IDRMFS) in 2006 and is widely regarded as the pioneer of DRM institutes in Ethiopia. It has undergraduate and postgraduate training programs and has developed short-term training wings. Their major tasks include:

- Running both undergraduate and postgraduate programs;
- Conducting basic, applied, evidence-based and action research in the areas of DRR and CCA;
- Offering short-term DRM and CCA courses and training to enhance capacity building among disaster risk management and development practitioners and professionals;
- Leading community outreach services; organizing disaster risk management and food security-related national, regional and international seminars, symposiums, workshops and policy dialogues; and strengthening academic links, cooperation, and exchanges between universities and research institutes of different countries;
- Establishing a database and information management center specifically working on early warning, risk mapping, vulnerability mapping, and responsible to release evidence-based forecasting and prediction on the principal basis of GIS and Remote Sensing. The DRM and CCA related information has been disseminated and shared to end users through workshops, websites, publications and the media; and
- Offering advisory and consultancy services in the form of community services to government sectors and the community in DRM and climate change.

In addition to the Institute of Disaster Risk Management and Food Security Studies, and the Department of Disaster Risk Management and Sustainable Development works on the modules of Disaster Risk Management, Disaster and Development, Climate Change and Development, Research Tools and Methodology, and on cross-cutting issues.

Samara University located in the Afar region runs postgraduate degree program on Disaster Risk Management and Pastoral Development. It offers short-term training courses on climate change, GIS, and conflict sensitive development issues to the regional DRM office and other sector offices upon request.

Other universities working in DRM and CCA include Jigjiga (Somali), Gambella, Ambo (Oromia), Arsi (Oromia), Haramaya (Oromia, Dire Dawa, Arba Minch (SNNPR) and Mekelle (Tigray). Although these universities are in regional states, they are under the jurisdiction of the Federal Ministry of Education.

The Ethiopian Public Health Institute (EPHI), Forestry, Bio-diversity, and Agriculture-related research and training institutes and the East Africa Desert Locust Prevention and Control are among non-higher education institutes providing short term training on disasters and risks in their area of expertise and provide technical support to regional and federal level experts.

Most of the third generation universities such as Samara University lack qualified and experienced staff compared to the long standing universities such as Bahir Dar University. Collaborative research and teaching between universities could contribute to building their human capital in addition to long term staff trainings.

This brief mapping of higher education institutions and other research institutes shows there are potential training partners for EDRMC as it embarks on establishing itself as Centre of Excellence on DRM/CCA training and research.

3.6.2 Mapping Ministries and Line Departments

The “paradigm shift” in disaster risk management has brought to light the role of other sectors in managing risks in their areas of operation. As underlined earlier, these provisions are enshrined in the Constitution and in the powers and duties of executive organs.

The mapping has established that there are large numbers of institutions working in the areas of DRM and CCA directly or indirectly; some are already key stakeholders to EDRMC as members of steering, technical committees, and taskforces. Table 4 presents key stakeholders in DRM/CCA and their areas of specialization.

Table 4: Key Stakeholders and Major Areas of Training Specializations

S.N	Names of Agency	Major Training Specialization Areas and Roles
1	EDRMC	▪ Coordination of multi-hazard and multi-sectoral approaches of DRM (both natural and human-made hazards and disaster risks) ▪ Works on hazards, disaster risks, emergency response, and recovery in collaboration with other sectors, NGOs, and UN agencies ▪ Mainstreaming disaster risk management in relevant line ministries ▪ Provide capacity building support and coordinate regional states to strengthen and enhance the effectiveness of DRM and CCA
2	Ministry of Agriculture	▪ Animal disease ▪ Pest infestation ▪ Flood prevention/mitigation ▪ Drought prevention/mitigation ▪ Climate change adaptations ▪ Agriculture-related insurance schemes ▪ Monitoring of weather patterns and adaptation of crop patterns ▪ Agro-meteorology advisory services ▪ Watershed management and hillside protection
3	Ministry of Health	▪ Human disease prevention/mitigation ▪ Nutrition ▪ Public health emergencies training, including COVID-19 ▪ Coordination of health emergency and response management ▪ Prepare public health surveillance and preparedness planning
4	Ministry of Education	▪ Awareness creation on DRR & CCA through school safety measures ▪ Awareness on school buildings to resist adverse disaster risks ▪ Inclusion of DRM and CCA to school curricula
5	Ministry of Water and Energy	▪ Early warning dissemination using traditional and modern methods ▪ Water-related vulnerability assessment ▪ Coordination of emergency WASH and flood preparedness and response management ▪ Water purification, sanitation, and water filtration ▪ Arrangement of alternative emergency drinking water supply ▪ Protection of riverbanks and passages
6	Ministry of Irrigation and Lowlands	▪ Planning, construction & management of irrigation dams as well as lowland research & development activities ▪ Design and construction of irrigation infrastructure ▪ Environmental impact assessment ▪ Dam Operation and Administration

S.N	Names of Agency	Major Training Specialization Areas and Roles
7	Ministry of Peace	▪ Conflict resolution and management ▪ Run conflict EWS and preparedness and response coordination ▪ Promotion of peaceful co-existence ▪ Community consensus and collaboration
8	Ministry of Defense (Police and Military)	▪ Conflict prevention and civil protection ▪ Life-saving intervention ▪ Risk management simulation exercise (e.g., flood, fire, landslide) ▪ Lead search and rescue operations in fast onset disasters
9	Ministry of Finance	▪ Funding principles and mechanisms ▪ Facilitation of international and national procurement of emergency relief resources and equipment ▪ Fund raising and resource mobilization ▪ Financial management in DRM and CCA projects
10	Ministry of Plan and Development	▪ Sensitization of the 10-year national perspective plan focusing on DRM and CCA ▪ National adaptation plan with a comprehensive option to enhance resilience in development ▪ Provide guidance and technical support for integration of DRM in the sector plans and cross sectoral plan synergy
11	Environment, Protection Authority	▪ Environmental protection ▪ Greening the environment ▪ Climate change adaptation and mitigation ▪ Concepts and implementations of CRGE ▪ Climate change conventions and frameworks ▪ Green House Gases-Measuring, Reporting and Verification Systems ▪ Forest fire monitoring and control
12	Ministry of Women and Social Affairs	▪ Protection of vulnerable community groups through the implementation of social safety net programs ▪ Immigrant safety and migrant returnees' re-integration and repatriation ▪ Facilitate entrepreneurship trainings ▪ Industrial peace, employees' health and safety ▪ Safe working conditions and environment ▪ Sensitization on policy and legal instruments (social welfare and protection, labor market, occupational safety, international conventions on disability & ILO)

S.N	Names of Agency	Major Training Specialization Areas and Roles
13	Ministry of Transport and Logistics	▪ Road traffic accidents ▪ Awareness creation on the prevention of road accidents at the local level ▪ Safe transportation rules and regulations ▪ Environmental risk sensitive road construction ▪ Transportation of chemical and hazardous materials ▪ Water transportation
14	Ethiopia Meteorology Institute	▪ Weather forecasting ▪ Climate change modeling ▪ Meteorologically forecasted information manipulation and provide advisory support to the various user groups
15	Ministry of Urban and Infrastructure Development	▪ Building code of conduct ▪ Construction safety measures and controls ▪ Awareness raising programs on safety measures (safe evacuation at local level, development of tools/strategy to ensure better coordination)
16	Universities and Research Institute	▪ Share research works/thesis, dissertation, proceedings to EDRMC's digital library
17	Media	▪ Building community awareness on safety measures/various evacuation routes/early warning dissemination, (i) Sharing success stories for motivating community towards adoption of good practices, (ii) Raising community's need for additional/ external support, and (iii) Disseminating information about ongoing DRR and CCA approaches.
18	Ethiopian Red Cross Society	▪ Emergency response mechanisms ▪ Awareness raising program on safety measures/safe evacuation at local level ▪ Development of tools/strategies to ensure better coordination ▪ Search and rescue ▪ First aid at local level ▪ DRM/DRR training

Source: Field Survey, 2020

3.6.3 Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT)

The SWOT analysis is the analysis of the internal environment (strengths and weaknesses) and the external environment (opportunities and threats or challenges) with respect DRM and CCA activities of stakeholders. The assessment also indicated the parts to be capitalized and improved in the TNA implementation process. In addition, the analysis of the opportunities and threats are very important in strategizing program interventions to effectively utilize existing and potential opportunities and minimizing potential risks that deters the capacity development functioning of EDRMC and other line offices. Table 5 summarizes these analyses.

Table 5: SWOT Analysis of Institutions Working on DRM and CCA

Strength	Weakness
▪ Presence of qualified and experienced experts in DRM and CCA ▪ Presence of organizational set up from the woreda to the federal level ▪ Availability of disaster risk profiling information in almost all woredas ▪ Well-structured management especially in the federal level ▪ Establishment of study, research, and training directorate ▪ Presence of higher institutes and research centers working on DRM and CCA ▪ Presence of formal steering and technical committee ▪ Experience gained from the complex and persistent disaster response and availability of translated training materials ▪ The establishment of ICT directorate with growing capacity to serve the research and training purpose	▪ Limited awareness and understandings on the DRM and CCA issues across stakeholders and sectors ▪ Shortage of budget for training and research ▪ Lack of basic and refresher trainings ▪ Lack of trained and experienced manpower ▪ Shortage of communication materials ▪ Poor DRM mainstreaming practices due to limited attention from higher officials of the sectors ▪ Low level of attention by decision makers to human resource development and professional development ▪ Weak coordination among steering and technical committee members due to lack of legal accountability ▪ High staff turnover of the trained and experienced DRM professionals due to the absence of employees' retention incentives and benefits ▪ Most leaders and experts being assigned for the DRM and CCA sectors do not have DRM educational backgrounds ▪ The DRM institutional setup is not a stand-alone and self-standing in some regions ▪ Inconsistent organizational setup in some regions ▪ Weak accountability among DRM technical and steering committee members at different levels of government structure ▪ Lack of documentation (training documents, policies, strategies, and assessment results) ▪ Limited access to and use of ICT at woreda level ▪ Absence of formal cooperation and collaboration with academia and research institutes ▪ Each DRM and CCA tasks are not in place as per the DRM strategic plan ▪ Limited learning opportunities for the staff
Opportunities	**Threats**
▪ Presence of key stakeholders (GOs, NGOs and UN agencies) working on DRM and CCA ▪ Presence of proactive DRM policy and strategy, and frameworks at the national and international levels ▪ Presence of higher learning institutions working on DRM research and training ▪ Culture of collaborative research and community service with higher institutions ▪ Growing expansion of technologies (Internet and communication tools) particularly at federal, regional, and zonal level DRM and other sectors ▪ Presence of humanitarian organizations and donors support in DRM ▪ The presence of south-south networking and cooperation	▪ Conflict and instability as well as recurrent drought and engagement on emergency response instead of research and training ▪ Prevalence of disasters and catastrophes ▪ Disease outbreaks like COVID-19 ▪ Economic slowdown and limited budget allocation for training and research ▪ Lack of skilled manpower in partner sectors ▪ Recurrent drought and conflict ▪ Recurrent conflict that results in deteriorating security conditions ▪ Declining local capacity due to competing priorities for emergency responses ▪ Climate change impacts, socio-economic dynamics, media, and political landscapes ▪ Limited documentation and information barriers among DRM stakeholders

Source: Field Survey, 2020

3.6.4 Documentation of Operational Policies, Procedures, and Systems

Proper documentation is one of the prerequisites for institutional capacity development. Survey participants were requested to evaluate their respective sectors in terms of how properly the operational policies, procedures and systems are documented. The findings indicated that from the total 107 survey respondents, 27.1% do not have documented operational policies and procedures; 31.8% documented only a few operational policies and procedures; 23.4% documented half of the operational policies and procedures; 11.2 % properly use almost all operational policies and procedures; and only 3.7% have documented and properly use all the operational policies and procedures. The documentation of such operational policies and strategies has direct implication on the knowledge, skills, and attitudes of the experts toward DRM and CCA and its transferability to new staff. The FGD and KII participants mentioned that they do not have documented DRM policies and strategies, SPIF, Sendai framework for DRR and other essential documents. This was especially true in the whole of the woreda sectors and partially in the zonal levels of all the targeted regions and city administration. The documentation practice was better in the regional and federal EDRMC offices. However, the documentation of these DRM policies and strategies is necessary but not a guarantee for the proper utilization of these documents as a reference for DRM activities. The documentation modality and the learning platform practices of DRM sectors need to be improved in a way that it could be accessible to all concerned bodies.

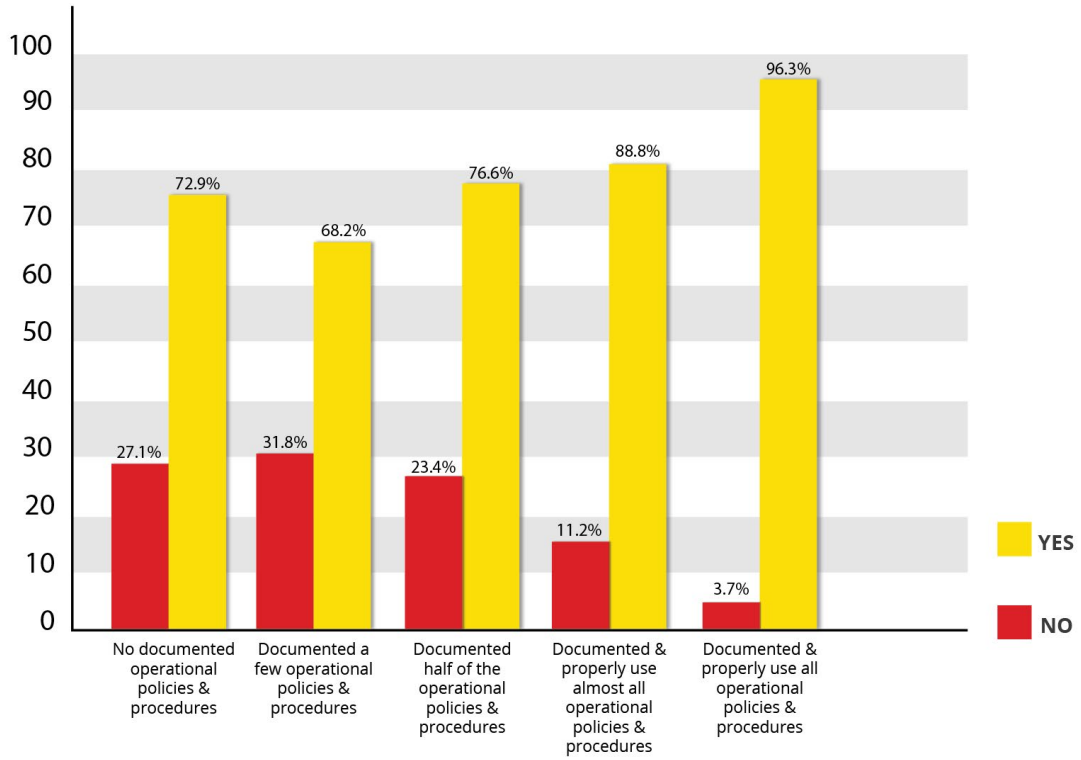

Figure 6: Documentation of Operational Policies, Procedures, and Systems (n=107)

Source, Field Survey, 2020

3.6.5 Perception of Staffing Levels of DRM/CCA and Related Organizations

The staffing level of the sample organizations was assessed based on perception of respondents. As shown in Table 6, nearly 41% of the respondents rated the availability of formal staffing plan for DRR and CCA as moderate and only one-third (27.1%) rated as high or very high. Other indicators of significance are (i) managerial and technical positions not filled with the right skills (moderate = 38%); system in place to fill positions quickly (moderate = 48%); and high rate of staff turnover (moderate = 39%).

Table 6: Staffing Levels of Organizations[12]

S.N	Staffing Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	Formal staffing plan	10.7	21.4	40.8	21.4	57
2	Positions/vacancies that are documented	17.5	186	36.1	24.7	3.1
3	Management and technical positions filled, but not with the right skills	13.7	19.6	38.2	24.6	3.9
4	System in place to fill positions quickly	13.6	18.4	44.7	20.4	2.9
5	High rate of staff turnover	16.5	18.4	38.8	12.6	13.7
6	Retention incentives	26.2	28.2	32.0	11.7	1.9

Source: Field Survey, 2020

3.6.6 Perception of Budget Allocation for DRM/DRR and CCA Sectors

The KII and FGD participants have strengthened the responses replied by the survey respondents presented in Table 6. The documentation and systematic plans of staffing is lacking, especially at the zonal and woreda levels. The DRM sectors suffer from high staff turnover and losing experienced and trained experts due to the limited incentive packages.

One of the setbacks for the successful operation of DRM and CCA tasks was found to be budget allocation. The survey respondents were requested to rate the budget allocation trends and experiences from the set-up of their respective offices. As can be depicted in Table 7, over half of the respondents (52.4%) replied that the recurrent budget allocation to the DRM sector is poor and one-fourth of them (25.2%) replied as very low. Less than 1.0% said the budget allocation was high and none responded at the recurrent budget allocation being very high. The perception of capital or project budget allocation is similar to the recurrent budget; however, there were some respondents (2.7%) who indicated high project budget allocation, and less than 1.0% expressed that there was a very high allocation of project budget to perform DRM and CCA tasks.

The information obtained from KIIs revealed that there is a practice of budget planning by DRM sectors for DRM activities in a bottom-up approach. However, the budget allocation and approval by the woreda council or sector offices is not commensurate with the huge and complex DRM and CCA tasks. To mitigate the budget constraints, DRM offices follow multi-sectoral approach and work with various development partners and stakeholders.

[12] The inclusion of new DRM graduates' list and profile in the human resource development manual administered by Civil Service Commission requires strong advocacy effort to come to terms with the Commission. The human resource development manual is widely used by government sectors at each level of administration. So far, DRM as a field of study has not yet been clearly mentioned in the manual and hence employer sectors do not consider DRM graduates though the position directly invites them. That is the mere reason why other non-DRM gradates have filled all the positions and DRM graduates left aside.

Table 7: Budget Allocation for DRM/DRR and CCA Sectors (n=107)

S.N	Staffing Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	Recurrent budget allocation	25.2	52.4	21.5	0.9	0.00
2	Capital budget allocation	18.7	57.0	20.7	2.7	0.9

Source: Field Survey, 2020

The FGD and KII participants have also shared the survey respondents' view in terms of the weights given to budget allocation. The amount of budget allocated for the DRM sector every year is not proportionate to the tasks and activities expected to be implemented. The low budget allocated in both the recurrent and capital budget components is particularly severe at the woreda levels. The majority of the woreda DRM sector participants mentioned that the Early Warning and Response office budget is usually the last to be allocated after every sector budget allocation is complete[13]. This is an indication of the low level of attention given to the DRM sector mainly due to the low level of awareness about the essence of DRM.

3.6.7 Resource Mobilization for DRM and CCA

Six indicators were used to rate resource mobilization were rated as moderate and below moderate, and only insignificant percentage of the respondents rated as high while none of them responded with very high resource mobilization strategy. In fact, in connection to the presence of the systems to estimate the resource needs and the identification of sectoral resources persons/ focal points nearly half (48.6%) of the respondents and a little more than half of them (51.4%) replied moderate, on Estimation of future resource needs and Identification of sectoral resources persons/focal point respectively.

Table 8: Resource Mobilization (n=107)

S.N	Parameters	Response in Percent				
		V. Low	Low	Moderate	High	V. High
1	Presence of business plan/funding strategy	25.2	43.0	28.0	3.8	0.0
2	Estimation of future resource needs	9.4	33.6	48.6	8.1	0.0
3	Presence of a system to nurture in-house talent pool	20.5	47.7	31.8	0.00	0.0
4	Identification of sectoral resources persons/ focal points	9.4	35.5	318	3.7	0.0
5	Identification of additional funding resources or opportunities	15.9	42.1	35.5	6.5	0.0
6	Presence of communication strategy for resource mobilization	18.7	39.3	38.3	3.7	0.0

Source: Field Survey, 2020

[13] In some of the regions, woredas have an independent DRM office while instead have an Early Warning and Response team under the Agriculture office.

Besides the usual way of securing funding from NGOs, GOs, UN agencies, humanitarian and development based organizations, there may also be opportunities for EDRMC to mobilize funding from various sources with different approaches and modalities. Thus, DRM sectors can work closely with various financial institutions such as banks and insurances to strengthen the financial capacity of the sector for addressing the training needs of the DRM staff in a sustainable manner.

3.6.8 Knowledge Management and Cooperation

The knowledge management and cooperation views of survey respondents are presented with respect to four parameters as depicted in Table 9. The results indicated that the vast majority of the respondents' rate knowledge management and cooperation as moderate and below moderate, and it was only the annual planning process that was rated high (14.9%). This indicates that some sectors have the practice of integrating the training and research needs of the sectors' staff in their annual plan.

The FGD and KII participants also unanimously supported the survey respondents' view that knowledge management and cooperation are still undeveloped and hence experts need to exert efforts for potential better performances. For successful disaster risk management, the success that the sectors achieved in overcoming disasters and the challenges faced in the course of disaster management activity implementation should be properly documented and shared for future use by all DRM staff at all levels. DRM offices need to facilitate and organize different knowledge and experiences sharing sessions and workshops to learn, share, and update DRM related information. EDRMC and its line offices should establish a DRM knowledge repository that is accessible to all stakeholders; collect, store and share reports, assessments and other research outputs; and develop operational guidelines, manuals and related documents to be shared with staff, stakeholders, and other interested groups on DRM and CCA through various web based platforms and channels. In this way, the knowledge management practices will create a cycle of learning in which EDRMC can be a knowledge hub and Center of Excellence on DRM and CCA. In doing so, improved knowledge practices will enable the DRM sector to generate data for evidenced-based policy making and decisions.

Table 9: Knowledge Management and Cooperation

S.N	Staffing Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	Active links with appropriate organizations	14.9	32.7	49.6	2.8	0.0
2	Sharing technical expertise and experiences with staff and stakeholders	15.9	37.4	42.0	4.7	0.0
3	Applying best practices to programs, and sharing information with stakeholders and appropriate staff	13.1	41.1	42.1	3.7	0.0
4	Annual planning	8.4	29.0	47.7	14.9	0.0

Source: Field Survey, 2020

3.6.9 Stakeholders' Awareness on DRM/CCA Conventions, Policies and Strategies

The general awareness of stakeholders on DRM and CCA conventions, policies, procedures, and frameworks was presented to the survey respondents KII and FGD participants. The awareness of the stakeholders working on DRM and CCA is paramount to implementing the related tasks at the levels of administration. In this regard, the survey respondents' indicated that the vast majority of them have moderate and below levels of awareness on the existing national and international

conventions, policies, strategies, and frameworks, which are the bases of DRR and CCA works. Similarly, the FGD and KII participants, especially of the woreda and zonal experts explained that they do not know about the Ethiopian national DRM policy and strategy, let alone the various international conventions and frameworks of the same. The federal and regional experts do have better awareness on both the national and international parameters of DRM and CCA conventions, policies, and strategies though there are still observed gaps. Despite the presence of better awareness in the federal and regional experts, the KII and FGD findings revealed that there is also variation on the levels of awareness on DRM/CCA conventions, policies, and strategies within federal and regional sectors.

Table 10: Awareness on DRM/CCA Conventions, Policies, and Strategies

S.N	Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	Awareness about DRM and CCA conventions, protocols, policies, strategies and guidelines	23.4	30.8	35.5	9.4	0.9
2	DRM policy and strategy	23.4	23.4	36.4	13.1	3.7
3	DRM-SPIF	29.9	24.3	30.8	11.2	3.8
4	Growth and transformation II	28.0	28.0	32.7	6.6	4.7
5	Climate resilient green economy	33.6	22.4	35.5	6.6	1.9
6	Guideline for mainstreaming DRM into investment decision in Ethiopia	32.7	29.0	28.0	7.0	2.8
7	Disaster risk profiling document/ risk mitigation/adaptation planning guideline	27.1	18.7	29.0	17.8	7.4
8	Level of understanding about DRM and CCA operating manuals and procedures	25.2	22.4	42.1	8.4	1.9

Source: Field Survey, 2020

3.6.10 Understanding on DRR and CCA Implications and Indicators

The stakeholders working in the areas of DRM and CCA have serious blurred understandings and hence some common denominators and differences of DRM and CCA were set as points of inquiries and discussions. The majority of the respondents replied that there was moderate and below levels of awareness on the issues of DRM and CCA. However, in this case, there are also respondents who replied high and very high, indicating that there were few experts who understood the parameters very well despite the fact that the majority did not. He discussions with FGD and KII participants revealed that the federal and the regional experts have a better understanding than those at the woreda and zonal levels due to two reasons. The first is that the regional and federal experts' level of education and experience is better than the woreda and the zonal experts, and the second is the regional and federal level experts have better opportunities for short-term on-the-job training that enhance their levels of understanding on DRM and CCA. On the other hand, the woreda level FGD and KII participants attributed the low knowledge and awareness on DRM and CCA to the lack of top-down and bottom-up knowledge sharing practices, the shortage of internet and ICT infrastructure, and the resulting absence of online training platforms for knowledge and best practices sharing.

Table 11: Levels of Understanding on DRR & CCA Implications and Indicators

S.N	Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	Similarities and differences between DRR and CCA	25.2	27.1	25.2	13.1	9.4
2	DRR and CCA information and data manipulation	25.2	32.7	27.1	8.4	6.6
3	DRR and CCA information and data production	27.1	30.8	26.2	8.4	7.5
4	Socio-economic and environmental impacts of disaster risks	22.4	21.5	37.4	14.0	4.7
5	Disaster risk assessment	21.5	26.2	34.6	11.2	6.5
6	DRR and CCA data/information interpretation	28.0	29.9	24.3	12.2	5.6
7	Climate change and variability	21.5	30.8	30.8	9.4	7.5

Source: Field Survey, 2020

3.6.11 Awareness on Climate and Weather Forecasting Models and Tools

DRM and CCA stakeholders have come to take for granted the benefits of climate modeling and weather forecasting mechanisms to support effective and efficient DRR and CCA planning and implementation. Survey respondents were asked whether they are aware of the normalized difference vegetation index (NDVI), which is a simple graphical indicator that can be used to analyze remote sensing measurements, satellite imagery, Livelihoods, Early Assessment and Protection (LEAP), Famine Early Warning Systems Networks (FEWS-NET) and others. The findings indicated that the awareness level of the respondents on the majority of climate and weather forecasting models and tools is moderate and below. One can also see from Table 12 that the level of awareness for the majority of the parameters is very low.

Table 12: Awareness on Climate and Weather Forecasting Models and Tools

S.N	Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	NDVI	50.5	23.3	21.5	4.7	0.0
2	Satellite imagery	51.4	22.4	18.7	6.6	0.9
3	LEAP	47.7	20.5	22.4	9.4	0.0
4	FEWS NET	47.7	26.1	15.9	10.3	0.0
5	GIS and remote sensing	49.5	21.5	20.6	8.4	0.0
6	DRR and CCA information-based decision	26.2	37.4	23.4	9.3	3.7
7	Training quality of DRR and CCA	25.2	34.6	27.1	131	0.0
8	DRR and CCA information-based systems	26.2	37.4	224	13.1	0.9
9	Access to climate and weather Information	24.3	32.7	28.1	14.9	0.0

10	EWI communication	21.5	34.6	27.1	15.9	0.9

Source: Field Survey, 2020

3.6.12 Generic Levels of KSA on DRM and CCA Training Themes

The knowledge, skills, and awareness of stakeholders working on DRM and CCA play a significant role in designing potential trainings. Thus, both the key informants and the FGD discussants were asked how much they are well-aware of the training themes proposed by the TNA and were requested to add more, if applicable. The training needs were identified based on a document review from existing literature, plans, reports, and strategic frameworks. There were approximately 26 training themes presented to the experts, and they were asked if they were well-aware of each. The results of the survey showed that most respondents are aware of the themes in an average and below levels. Only few stakeholders at all levels (from federal to woreda levels) know the training themes very well. Similarly, the key informants and the FGD discussants expressed that they are not very aware of the themes, but as usual, some of the federal and regional experts are well-aware of the training themes. The average and low levels of awareness on the training themes indicates a need to design training themes.

Table 13: Generic Levels of KSA on DRM and CCA Training Themes

S.N	Parameters	Response in Percent (n=107)				
		V. Low	Low	Moderate	High	V. High
1	DRM and CCA awareness	21.5	26.2	33.6	12.1	6.5
2	CCA strategy identification and development	21.5	31.8	32.7	9.3	4.7
3	Basic concepts of DRM/DRR	16.8	24.3	37.4	14.0	7.5
4	Disaster risk profiling	20.6	25.2	38.3	13.1	2.8
5	Disaster risk and vulnerability assessment	19.6	36.4	31.8	11.2	0.9
6	DRR and CCA and mitigation framework and adaptation strategies	18.7	39.3	28.0	12.1	1.9
7	Emergency planning strategies	26.2	26.2	30.8	10.3	6.5
8	Community-based DRR and CCA	23.4	30.8	29.9	12.1	3.7
9	Mainstreaming DRR and CCA	26.2	30.8	27.1	14.0	1.9
10	Multi-hazard and sectoral approaches	23.4	24.3	31.8	11.2	0.0
11	Flood forecasting and early warning systems	21.5	31.8	29.9	13.1	3.7
12	Drought forecasting and early warning systems	22.4	33.6	32.7	6.5	4.7
13	Climate change and urbanization	21.5	37.4	29.0	9.3	2.8
14	Climate change-related policy issues	24.3	32.7	31.8	11.2	0.0

15	CC and water resources monitoring	29.0	35.5	29.9	4.7	0.9
16	CC scenario analysis	34.6	31.8	25.2	4.7	3.7
17	Climate change forecasting/ projection	23.4	30.8	35.5	6.5	3.7
18	Environmental hygiene and sanitation	20.8	33.0	32.1	14.2	0.0
19	Environmental impact assessment	22.4	26.2	41.1	8.4	1.9
20	Awareness about GHGs reporting	34.6	31.8	23.4	6.5	3.7
21	Land cover, land use changes and diagnostics	26.2	35.5	28.0	7.5	2.8
22	Using various global mitigation scenarios	34.6	34.6	25.2	4.7	0.9
23	Strengths of the research and training strategy	27.1	32.7	25.2	4.7	0.9
24	Monitoring & evaluation systems	15.9	29.0	43.9	10.3	0.0
25	Software technology utilization	29.9	42.1	23.4	3.7	0.9

Source: Field Survey, 2020

3.6.13 DRM and CCA Training Experiences of Organizations

Different organizations in different regions have diversified experiences of training themes and subject matters. Various on-the-job and in-house training were provided to experts and stakeholders working in the areas of DRM and CCA. However, poor documentation, knowledge management and staff turnover affected the knowledge and skills transfer practices of sectors. Table 14 depicts the summary of these training experiences of organizations at different levels of administration.

Table 14: Documentation of Training Experiences of Organizations

Amhara	Oromia	Somali	Afar	Addis Ababa	Federal
▪ Basics of DRM & CCA ▪ DRM policy & strategy ▪ DRR & information management ▪ Disaster risk assessment ▪ DRR & vulnerability ▪ EWS & applications ▪ LEAP ▪ Contingency planning ▪ Disaster risk profiling ▪ National incident management systems (NIMS) ▪ CC impacts& measures ▪ Beneficiaries targeting operation manual & guideline ▪ Household economic assessment ▪ Soil & water conservation ▪ Project cycle management ▪ Nutrition assessment ▪ Market monitoring ▪ Environmental impact assessment (EIA) ▪ Climate change modeling	▪ Basics of DRM & CCA ▪ DRM policy & strategy ▪ DRR & information management ▪ Disaster risk assessment ▪ DRR & vulnerability ▪ EWS & applications ▪ LEAP ▪ Contingency planning ▪ Disaster risk profiling ▪ National incident management systems (NIMS) ▪ CC impacts& measures ▪ Beneficiaries targeting operation manual & guideline ▪ Household economic assessment ▪ Soil & water conservation ▪ Project cycle management ▪ Nutrition assessment ▪ Market monitoring ▪ Environmental impact assessment (EIA) ▪ Climate change modeling	▪ DRM & livelihoods ▪ Community-centered Early Warnings System (EWS) ▪ National Incident Management System (NIMS) ▪ Familiarization on national DRM policy & strategies ▪ Warehouse management ▪ CCA measures ▪ Climate resilient livelihood strategies ▪ Food security & nutrition ▪ Participatory rangeland management ▪ Women's empowerment ▪ GIS & remote sensing	▪ DRM concepts ▪ Early Warnings System (EWS) ▪ DRR frameworks ▪ Multi-hazard & sectoral approaches to DRM & CCA ▪ DRM policy &strategy ▪ Integrated risk management ▪ Post-disaster durable solutions ▪ Climate smart agriculture ▪ Research data collection & analysis ▪ Software application	▪ Concepts of DRM ▪ Tactical and methodological approach in DRM ▪ Disaster prevention ▪ Basics & advanced fire fighting ▪ Basics of SAR ▪ DRR & vulnerability ▪ Community Based Disaster Risk Management (CBDRM) & voluntarism ▪ Post-disaster emergency response & victim's rehabilitation ▪ Fire & other disaster response machinery and logistics ▪ Pre-hospital emergency medication & paramedics ▪ Disaster response technology adoption & research	▪ CBDRM ▪ DRR and CCA ▪ DRR mitigation & adaptation plan ▪ DRR mainstreaming ▪ Disaster risk profiling ▪ Disaster risk assessment ▪ Post-disaster needs assessment ▪ NIMS ▪ Contingency planning ▪ Flood forecasting ▪ Drought forecasting ▪ National drought management plan ▪ Climate and weather information systems and models ▪ CC and variability ▪ First aid ▪ Cash learning partnership ▪ GIS & remote sensing

Source: Field Survey, 2020

3.6.14 Training Priorities

The FGDS, KIIs, and surveys were the basic sources of data regarding potential training needs and prioritizations. Discussants, key informants, and respondents prioritized the potential DRM and CCA training needs in accordance with their relevance to effectively achieve the DRM and CCA tasks of the respective strategic plan's mandate and mission of the organizations. Identification of the training needs was the first step followed before prioritization. Key training needs were identified through putting together a list of required skills, knowledge, and other training objectives from FGD, KII, and survey participants. The training need prioritization matrix revealed that different regions have different training priorities, which originate from the difference in DRM and CCA regional contexts.

Table 15: Prioritized Training Needs[14]

S.N.	Prioritized Training Themes	Order of Priority (Ranks)					
		Amhara	Oromia	Somali	Afar	Addis Ababa	Federal
1	Basics of DRM and CC Practices	1	1	1	1	1	5
2	DRM Policies and Strategies	2	-	-	3	-	1
3	DRR and CCA Linkage	3	-	-	-	-	-
4	CBDRM	12	-	8	-	9	6
5	Gender and DRM	-	-	4	7	-	8
6	Disaster and Logistics Management	-	-	5	-	-	-
7	Livelihoods and Food Security	-	3	3	-	-	-
8	Emergency Preparedness and Response	14	12	13	12	10	-
9	Conflict Management	4	6	6	4	6	3
10	Computer Basics	-	-	-	-	-	11
11	GIS and Remote Sensing	10	-	-	5	-	9
12	Software Application in DRR and CCA	8	-	-	6	-	7
13	Disaster Risk Assessment	7	9	11	-	2	-
14	Disaster Risk Profiling	-	8	-	-	3	12
15	Drought Management and Predictions	5	5	8	8	-	2
16	Flood Forecasting Systems and Models	6	7	10	9	-	4
17	Contingency Planning	9	-	-		4	13
18	Damage and Loss Assessment	-	-	-		5	-
19	EIA	11	10	-	10	8	10
20	Monitoring, Evaluation and Learning	13	11	12	11	7	14
21	Early Warning Systems	-	2	2	2	-	-
22	Disaster Risk Information Management	-	4	7	-	-	-
23	Search And Rescue (SAR)	-	-	-	-	-	-
24	DRM Fund Raising, Resource Mobilization and Advocacy	-	-	-	-	-	-

[14] Trainings needs indicated on number 24, 25, and 26 were recommended by consultative workshop participants.

25	Emergency Operation Management	-	-	-	-	-	-
26	Urban DRM	-	-	-	-	-	-

The identified DRM and CCA training themes focus on emergency response, prevention, and post disaster interventions, which complement each other and link to one another to improve DRM and CCA implementation in the country. Therefore, by addressing these training themes, trainees will develop strong know how on the humanitarian response mechanisms and long term development nexuses.

3.6.15 Analysis of Major Training Curriculum

i) Introduction to the Proposed Curricula

Training curriculum is a total package of learning activities designed to achieve the objectives of the intended training program. In a competency-based system, the objective, or desired end, is that trainees will acquire the specific knowledge and skills (competencies) they need to do their jobs. The major components of any training curriculum are:

- the content or information to be transmitted;
- the organization of the curriculum which includes structure, format, and sequencing; and
- the training methods used.

The training curricula proposed for EDRMC are prepared as per the needs of experts working in DRM/DRR and CCA from the federal to woreda levels of administration in the targeted regions. It focuses on the development of competencies of federal, regional, zonal and woreda level experts to effectively perform the expected tasks in their respective offices. Various TNA techniques, involving disaster risk management and other sector employees were employed to identify and come up with the specific training needs and competency standards for each employee of the sector.

The standards set in these training curricula are the minimum requirements that the accredited domestic and international training providers from higher institutes, sectors, NGOs, UN agencies, and private consultants include in their training programs. The training providers are expected to develop their own training modules and instructional materials from the standards prescribed herein. To ensure the minimum standard knowledge, skills, and attitudes that the trainees need to acquire, the accredited training provider must be diligent in implementing these standards. Since the urban vulnerability to disaster risk is increasing from time to time, urban focused disaster risk management themes are included in the curriculum. The proposed DRM/CCA training curricula are annexed to this report (Appendix 2).

ii) Local Collaboration

DRM and CC working sectors of the country at various levels shall work in collaboration with higher educational institutions and research centers. Ministries and line departments working in the areas of DRM and CCA can work in collaboration with higher educational institutions such as Bahir Dar, Samara, Jigjiga, and Ambo universities in the wider areas of DRM and food security trainings, research, and knowledge management to enhance the capacity of their staff members for the proper implementation of DRM and CCA tasks. The cooperation can be realized through MoUs stating the expected partnership roles and responsibilities of the parties for the successful implementation of the agreed DRM and CCA-focused capacity building and knowledge sharing activities. The potential areas of collaboration and partnership should also be extended overseas with noble training institutions that have long-standing experience in managing trainings. It is believed that the current collaboration between the NDRM and ADPC will provide opportunities for capitalizing on the positive outcomes gained so far, and widening the boundaries of collaboration, networking, and partnership for improved learning and enhanced capacity. Besides, EDRMC is expected to strengthen its networks and partnership with IGAD, UNISDR, World Bank, EU, UNDP, AU and Universities abroad like Arizona and Colombia in North America. These institutions are known with their global DRM and CCA experiences.

Individual and institutional capacity building in the form of trainings, research, and learning is a vital component of disaster risk reduction process and hence, creating adequate training opportunities to key stakeholders, strengthening training infrastructures, sharing of skills and knowledge on DRR and CCA, adequate funding and resource allocation and the need to consider their sustainability are essential activities to enhance the capacity of DRM staff. Planning for collaborative activities through joint conference, webinars, research, trainings, and reviews are also essential so as to cross fertilize existing knowledge and skills, and institutional mechanisms in DRM and CCA sectors.

iii) Complementing In-house Training with South-south Collaboration

In addition to the in-house training themes that decision makers and experts require, there are also opportunities to complete training courses from other developing countries that excel in DRM and CCA. There are some African and Asian countries that have strong experiences DRM systems, and online and face-to-face DRM and CCA training courses. In the assessment process, online and face-to-face DRM and CCA- focused training opportunities were explored in Africa (South Africa) and Asian Countries (China, the Philippines, and Thailand). The training courses available in these countries are comprehensive enough judged by the contents of the courses they are providing via face-to-face and virtual platforms. The experiences of two countries are highlighted below – **China** and **South Africa.**

The Chinese disaster risk management system has established one office and four committees: the Emergency Management Office of State Council at the national level and the corresponding organizations with regard to the four public security incidents, namely, the National Committee for Disaster Reduction to manage natural disasters, the National Committee for Work Safety to manage industry accidents, the National Committee for Patriotic Health to manage public health, and the National Committee for integrated management to manage public security. The four committees are made up of a vice president or a committeeman of the State Council of China as committee director, a minister or vice minister from the main related ministries as administrative vice director or vice director, and the vice ministers from the corresponding ministries as committee members. At the local levels, there are corresponding disaster risk management organizations. The local emergency management center and the committees for the four public security incidents management have been gradually established. The corresponding emergency management centers include the Chinese Center for Disease Control and Prevention (Ministry of Health), the National Disaster Reduction Center of China (Ministry of Civil Affairs), and the Chinese Supervision Center for Work Safety (State Administration of Work Safety). In addition, disaster risk governance in China is taken charge by different ministries or bureaus in terms of different kinds of natural hazards.

Table 16: Chinese Institutions Working on Risk Governances

S.N	Name of Institutions	Responsible Organization
1	China Earthquake Administration	Risk governance of earthquake disaster
2	China Meteorological Administration	Risk governance of meteorological disasters
3	Ministry of Water Resources	Risk governance of floods and droughts
4	Ministry of Land and Resources	Governance of land slide and debris flow
5	State Ocean Administration	Risk governance of ocean disaster

Source: Integrated Disaster Risk Management of China, 2007

To enhance risk governance of large-scale disasters, the State Council has set up several leading groups for natural disaster governance, such as the State Flood Control and Drought Relief Headquarters, and the State Earthquake Relief Headquarters. Correspondingly, each regional and local government has set up relevant departments. There are corresponding organizations in the local governments of all the levels in China. In other words, China adopts the natural disaster risk

governance system of combined vertical inter-government and inter-regional management mode where vertical sector management is prior to integrated regional management.

Furthermore, China has established the first professional organization for risk research, which has been named as the Risk Analysis Specialty Committee; many Chinese universities and research institutes have been doing research on natural disasters, engineering hazards, economic risk, crisis, and disaster risk management.

In **South Africa,** the National Disaster Management Centre (NDMC) is responsible for promoting integrated and coordinated national disaster risk management with a special emphasis on prevention and mitigation, by national, provincial, and municipal organs of state, statuary functionaries, other role players, and communities. NDMC is responsible for establishing effective institutional arrangements for the development and approval of integrated disaster risk management policy. One way of achieving this is through intergovernmental structures. Thus, the Intergovernmental Committee on Disaster Management (ICDM) was established including representatives from all spheres of government. The ICDM consists of Cabinet members involved in the management of disaster risks or the administration of other national legislation aimed at dealing with an occurrence defined as a disaster. Each Provincial and Local Government structures are responsible for risk assessment at national level through the NDMC.

One of the biggest lessons that could be learned from South Africa is the vulnerability assessment atlas projects at the national level. This atlas is a web-enabled, database-driven, interactive, vulnerability and risk assessment management system that enables all departments to capture data relating to vulnerabilities on one system for easy access. The atlas enables users to access" maps on the fly" (i.e., creating maps in real time using the most current data available), graphs, charts, drawings, and images relating to a variety of risks, hazards, and potential disastrous scenarios.[15]

NDMC aims to have all vulnerability data relating to floods, drought, extreme weather conditions, fires, landslides, hazardous material spills and pollution, and other human-made disasters included in the atlas. The main aim of the atlas is to provide all relevant role-players with a one-stop website that provides all the data and information required. This project will further ensure better coordination and help to prevent duplication of efforts.

Universities, NGOs, and private sector companies are also developing systems to assist with risk and vulnerability assessment. An example is the Mandisa Project of the University of Cape Town's Disaster Mitigation for Sustainable Livelihood Program (DiMP). DiMP has developed a disaster risk information management system to track and represent small, medium, and large-scale disaster events in the Cape Town Metropolitan Area. The objective is to provide a system that could identify trends and vulnerabilities related to localized disaster incidents. The information gathered is available on a website that will enable users such as emergency medical services, fire and rescue, disaster management departments and city planning services to draw up reports.

Furthermore, the Disaster Management Institute of Southern Africa (DMISA)[16] is a professional body of disaster management practitioners within the southern Africa region that aims to promote disaster management practice in southern Africa and to establish disaster management as a professional field. Within DMISA, a Technical Training Board (TTB) has been established for the accreditation and registration of disaster management offerings and service providers. The TTB is also involved in community awareness and capacity building. It is responsible for administering the training policy of DMISA and for making recommendations regarding training to the executive committee.

Therefore, EDRMC and other line ministry officials and experts in Ethiopia may refer to those courses and communicate the respective countries' government bodies and pursue their training in either modality. The lists of online training courses are annexed.

[15] http://sandmc.pwv.gov.za

[16] www.disaster.co.za

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Conducting a TNA is an essential first step in the planning of an effective needs-based training and capacity development program. This TNA focused on determining current and desired skills, knowledge, and attitudes of the trainees towards DRM and CCA. Before specifying the training needs on an individual and organization level, it was necessary to carry out broader initial information gathering on the capacities of DRM offices and their respective environments. The analysis and identification of the previous training themes, key sectoral and academic institutes, current strengths, weaknesses, opportunities, and threats of the DRM sector was conducted to provide a solid base of information that can direct the focus of the potential training needs. Thus, the identification and prioritizations of the training themes were constructed on the bases of data collected from KIIs, FGDs, and surveys. Furthermore, by identifying strengths and opportunities of the organization, its employees, and environment, a more informed decision can be made on how training can strengthen capacity or if other approaches would be more effective. Accordingly, the TNA presented the details of gap analysis, courses available in-house and abroad, and the curricula of the desired training needs that EDRMC and other stakeholders working on DRM and CCA could follow.

Several capacity building and learning opportunities have been identified for the staff working in the DRM/CCA and related sectors, which could be addressed in collaboration with various DRM- and CCA-focused stakeholders, namely sectoral offices, academic and research institutes, national and international CSOs and UN agencies, which are available at the federal level and in the targeted study regions. The overall results of the TNA revealed that a variety of DRM and CCA trainings were provided to the DRMC and other stakeholders; however, the question of how much the training themes provided are implemented at the ground in order to execute the national DRM policy and strategy is still a serious concern. Therefore, refresher trainings, and in service novel and pre-service trainings should be provided as per the prioritized training themes for each region, city administrations and federal offices, knowing of the actual dynamic disaster risks.

4.2 Recommendations

This TNA has identified the specific knowledge and skills that employees need to acquire thereby to become more productive, efficient, and innovative in their jobs and to achieve the strategic goals set forth. It has also identified the already provided trainings and the potentially required training themes and learning strategies. Thus, the following major recommendations are drawn from the assessment:

- EDRMC's new Study, Research and Training Directorate should prioritize the management of currently available trainings. This includes who has taken the trainings, when, where and by whom. This information should be documented digitally to avoid duplication of efforts.
- Mechanisms by which trainees can train and/or share the themes of the trainings taken should be established in such a way that allows for lessons learned to be transferred to non-trained staff.
- A training outcome evaluation should be carried out to determine if the objectives of the currently available trainings have been met, and how the training process can be improved.
- To address cases in which inappropriate persons, sometimes supportive staffs, are assigned to attend professional trainings, appropriate experts should be invited to attend the trainings.

- Trainings should be well-coordinated and planned in collaboration with DRM and CCA affiliated organizations working in the country to thereby avoid duplication.
- The collaborations among EDRMC and DRM and CCA training institutes, higher education institutions, and sector offices should be strengthened through formal MoUs.
- EDRMC and line ministries should strengthen South-South Cooperation and take advantages of the training opportunities in either face-to-face and /or virtual modalities.
- Incentives and rewards are needed to retain staff and minimize the DRM and CCA staff turnover.
- Trainings suggested should be supported with practical exercises, field visits, and simulation exercises.
- Special attention should be given to pre and on-the-job trainings for DRM and CCA experts.
- Detailed training modules, timings, methodology, and targeting should be prepared in advance to carry out effective results-oriented training programs. Entire training programs should be pre-planned and well-designed. In addition, trainings should be conducted in local languages for easy communication and better understanding of the trainees' stakeholders.
- Each training program should have a proper virtual or manual digital feedback system. The suggestions quoted in the feedback should be accepted and implemented in the next training program for improvement.
- A knowledge management strategy should be prepared and realized at all levels of DRM offices to ensure sustainable learning on DRM and CCA.
- DRM can be more effective when implemented in a multi-sectoral approach through mainstreaming DRM in sectoral plans and programs. Hence, the DRM mainstreaming practices of sectors shall be strengthened through advocacy, collaboration, and networking.

Appendixes

1. Higher Institutions and Training Centers Working on DRM Training Programs

Addis Ababa University			
S.N	**Program's Name**	**Level**	**Training Themes**
1	African Center for Disaster Risk Management (ACDRM)	Certificate	▪ Disaster Risk Management ▪ Disaster Risk Reduction and Climate Change Adaptation and Mitigation ▪ Green House Gases-Measuring, Reporting and Verification (GHG-MRV) ▪ Research methods in disaster risk management ▪ Community and school managed DRR ▪ Environmental management system ▪ Environmental impact assessment ▪ GIS and disaster risk management ▪ Community-based resilience
2	USAID	Short term certificate level	▪ Resilience building to shocks and crises
3	UNDP	Short term certificate level	▪ Conflict resolution mechanisms and post conflict reconstruction
4	Catholic Relief Service (CRS)	Short term certificate level	▪ Community-led DRM
5	Internal Displacement Monitoring Center (IDMC)	Short term certificate level	▪ Generates data and research findings on internal displacement with the following focus areas: ▪ COVID-19,impacts of internal displacement, urban displacement, displacement in a changing climate, disaster displacement risk, internal to cross-border displacement e.t.c
6	PCPN Holland	Short term certificate level	▪ Meteorological data and information
7	IGAD	Short term certificate level	▪ DRM and resource mobilization ▪ ICT based learning platforms
8	East African Desert Locust Prevention and Control Office	Short term certificate level	▪ Locust infestation prevention and control

Ambo University			
S.N	**Program's Name**	**Level**	**Training Modules**
1	Disaster Risk Management & Sustainable Development	BSc.	▪ Basic English skills ▪ Information & Communication Technology ▪ Introduction to Civics and Ethics ▪ General Concepts & Tools in Natural Resource Management ▪ Natural Resources & Sustainable Agriculture ▪ Social Development ▪ Conceptual Understanding of Disaster Risk Management I ▪ Conceptual Understanding of Disaster Risk Management II ▪ Disaster Risk Reduction I ▪ Disaster Risk Reduction II ▪ Disaster Risk & Development ▪ Disaster & Development I ▪ Disaster & Development II ▪ Emergency Management ▪ Research Methods & Tools I ▪ Research Methods & Tools II

Bahir Dar University (BDU)			
S.N	**Program's Name**	**Level**	**Modules**
1	Disaster Risk Management & Sustainable Development	BSc.	▪ DRM & development ▪ Research methods and tools ▪ PhD dissertation research
2	Livelihoods and Food Security	M.Sc.	▪ Fundamentals of livelihoods and food security ▪ Development perspectives of livelihoods and food security ▪ Research methods & tools ▪ Livelihoods and food security research applicatio
3	Disaster Risk Management & Sustainable Development	M.Sc.	▪ Fundamentals of disaster and its management ▪ Applications &perspectives of development ▪ Livelihoods and policy frameworks ▪ Research methods & tools ▪ DRM research application

Bahir Dar University (BDU)			
S.N	**Program's Name**	**Level**	**Modules**
4	Climate Change & Development	M.Sc.	▪ Climate basics ▪ Climate change adaptation & mitigation ▪ Climate, development & disaster risk management planning ▪ Climate change governance
5	Disaster Risk Management & Sustainable Development	B.Sc.	▪ Common courses ▪ Supportive courses ▪ Fundamentals of disaster management ▪ Subject-specific disaster risk management ▪ Disaster & sustainable development ▪ Cross-cutting issues in disaster risk management ▪ Research methods and tools in disaster risk management
6	Fire Risk Management	Certificate	▪ Basics of fire risk management ▪ Fire risk trends, chemistry and behavior ▪ Basics of fire risk management ▪ Advanced fire risk management ▪ Safety during fire incident ▪ Forest fire management
7	Occupational health and safety	Certificate	▪ Introduction to occupational hygiene ▪ Legal framework in occupational health and safety ▪ Occupational safety ▪ Occupational safety and health management
8	Emergency Management System	Certificate	▪ Introduction to national incident management ▪ Multi-agency coordination system ▪ Emergency coordination centre ▪ Incident command system ▪ All hazard incident management teams ▪ Emergency operation plan and simulation exercise

Ethiopian Red Cross Society			
S.N	**Program's Name**	**Level**	**Training Modules**
1	Disaster Risk Reduction	Certificate	▪ Basic disaster risk management ▪ Community-based disaster risk management ▪ Community-based health & first aid training ▪ First aid training of trainers ▪ Basic food security & livelihoods ▪ Disaster response team Training ▪ Risk communication & community engagement

Jigjiga University			
S.N	**Program's Name**	**Level**	**Training Modules**
1	Disaster Risk Management &Sustainable Development	MA	▪ Fundamentals of disaster risk management ▪ Sustainable theories & applications ▪ Livelihoods & food security ▪ Climate change & disaster risk reduction ▪ Early warning systems ▪ Research methodology in DRM ▪ Policies, strategies & institutions in DRM ▪ Conflict management ▪ Gender, disaster & development ▪ GIS and remote sensing in DRM ▪ Community-based disaster risk management ▪ Pastoralism & disaster risk management ▪ Thesis writing

Samara University			
S.N	**Program's Name**	**Level**	**Training Modules**
1	Disaster Risk Management & Pastoral Development	MA	▪ Integrated risk management ▪ Pastoral livelihood & cross-cutting issues ▪ Natural & anthropogenic hazards ▪ Spatial data analysis & research methods
2	Short term training on GIS	Certificate	▪ GIS for DRM & conflict sensitive development

Source: Field Survey, 2020

2. Summary of Proposed Training Curriculum

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
1	Stakeholder and Mandate Analysis for DRM/CCA	Federal/ regional level experts	5 days	This training underlines the importance systematic stakeholder analysis and covers key steps for same	▪ Define key concepts such as stakeholder, mandate ▪ Introduce tools and steps for stakeholder analysis ▪ Take case of flagship programs and analyze how the stakeholders were identified	**Module 1: Basic concepts** **Module 2: Tools and steps of stakeholder analysis** **Module 3: Case study of programs**	▪ Participatory ▪ Group tasks and presentation ▪ Individual tasks and presentation ▪ Lecture	Pre- and post-training interview and questionnaire Peer evaluation
2	Basics of Disaster Risk Management	DRM staff from regional to woreda levels	7 days	This training covers the classical and contemporary concepts, practices, and implications in disaster risk management	▪ Define key DRM concepts and terminologies, including the DRM process ▪ Explain the use of hazard, vulnerability, capacity, and risk assessments in DRM	**Module 1: Introduction to DRM** ▪ DRM concepts and terminologies ▪ Historical development of DRM ▪ Current national and global approaches, frameworks, strategies, and policies on DRM	▪ Participant-centered adult learning approach ▪ Lecture ▪ Discussion and debate ▪ Individual work ▪ Group work ▪ Individual and group presentation	Pre- and post-training interview and questionnaire

[17] In general, the targets of the proposed trainings are DRM staff members working on DRM and CCA. However, staff members of specific departments can be targeted for different trainings depending on the type of the themes.

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Describe key components of disaster preparedness, emergency response and disaster recovery	▪ Introduction to DRM process **Module 2: Assessing Disaster Risks** ▪ Introduction to hazard, vulnerability, capacity, and risk assessments Module 3: Disaster Preparedness ▪ Introduction to disaster preparedness concepts and processes ▪ Planning for disaster preparedness ▪ Early Warning System development ▪ Contingency planning for disaster response **Module 4: Emergency Response** ▪ Emergency response management ▪ Emergency coordination centers		

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						Module 5: Disaster Recovery ▪ Damage and loss estimation ▪ Disaster recovery planning and implementation		
3	DRM and CCA Policy and Strategy Mainstreaming	Heads and experts at the federal, regional, zonal and woreda levels	5 days	This training focuses on how to mainstream DRM into national and sub-national development planning processes. It also explores how to ensure coherence between Ethiopia's DRM policies and strategies and international frameworks, conventions, and protocols.	▪ Describe Ethiopia's key DRM and CCA policies and strategies ▪ Describe international DRM and CCA frameworks, conventions, and protocols ▪ Explain how to mainstream DRM and CCA in national, sub-national and sectoral development planning processes ▪ Define the enabling environment required for effective DRM and CCA mainstreaming	**Module 1: Introduction to DRM and CCA Mainstreaming** ▪ Overview of global DRM and CCA strategies and frameworks ▪ Mainstreaming Ethiopia's key DRM and CCA policies and strategies, including DRM-SPIF (2015) and DRM Policy and Strategy of Ethiopia (2013) ▪ Linkages between disasters, climate change and development **Module 2: DRM and CCA Mainstreaming in the Development Planning Process** ▪ Framework for mainstreaming DRM and CCA	▪ Participant-centered adult learning approach ▪ Lecture ▪ Discussion ▪ Individual work ▪ Group work ▪ Case analysis ▪ Individual and group presentation	Pre- and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Approaches for DRM and CCA mainstreaming in relevant. sectors **Module 3: Enabling Environment for DRM and CCA Mainstreaming** ▪ Advocacy and lobbying for DRM and CCA mainstreaming ▪ Financing for DRM and CCA ▪ M&E. for DRM and CCA mainstreaming		
3	Disaster Risk Reduction and Climate Change Adaptation	Heads and experts including graduate trainees working on DRR and CCA at all levels	4 days	It includes study on DRR and climate change concepts, facts, international conventions, mitigation and adaptation strategies; and the harmonization of climate change adaptation and disaster risk reduction. This will equip trainees with knowledge and skills to identify the link between climate change and disaster risks.	▪ Define the basics of DRR and climate change ▪ Criticize climate change debates ▪ Identify variability, change, causes and effects of climate change ▪ Scrutinize climate change adaptation and mitigation strategies ▪ Compare and contrast the similarities and differences between CCA and DRR	**Module 1: Introduction to DRR and CCA** ▪ Disaster Risk Reduction (DRR) ▪ Climate Change Adaptation (CCA) ▪ Basics of climate change **Module 2: Nexus between DRR and CCA** ▪ Cause–effect relationship between DRR and CCA ▪ Linkage between CCA and DRR	▪ Power point presentation, panel discussion, debating, questioning & answering, and individual& group works with presentations and audio-visual documents presentation from other countries' practices	Pre-and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
				It will also enable training participants to understand the formulation and application of appropriate CCA and DRR policy framework by integrating disaster risk reduction and climate change adaptation strategies	▪ Analyze climate change- induced hazards	▪ Mainstreaming DRR and CCA at strategic and operational levels **Module 3: Global Frameworks in DRR and CCA** ▪ International and national frameworks, plans, strategies, conventions and protocols in CCA and DRM		
4	Community-Based Disaster Risk Management (CBDRM)	All officials and experts working in the areas of DRM and CCA	3 days	The training course under the theme of CBDRM is designed to enable the trainees to understand, appreciate and apply the active role and participation of the community in DRR and potential development endeavors	▪ Recognize the current development trends and its impact on communities and abilities to respond to natural- and human-induced disasters risks ▪ Differentiate CBDRM and its components ▪ Aware of the basic concepts and terminologies used in disaster management	**Module 1: Concepts of DRM** ▪ Introduction to DRM ▪ Disaster terminologies: basic terms and definitions ▪ DRM approaches **Module 2: Essence of CBDRM** ▪ Essences of CBDRM ▪ Community risk assessment tools ▪ Community-based/ managed disaster risk reduction planning and implementation	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Scenario exercises ▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Scenario exercises	Pre-post training interview & questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Appreciate the significance of community-centered approach to disaster risk management. ▪ Discuss CBDRM process and compare it with community development process ▪ Examine the link between disaster risk management and community development	**Module 3: Disaster and Development Nexus** ▪ DRR and Development ▪ Disaster - development matrix	▪ Community development works, field visit and report writing, and presentation	
5	Gender and Disaster	All staff members working on DRR and CCA at all levels of administration	4 days	This training theme provides trainees with knowledge and skill about the gender differences in terms of vulnerability, capacity, and the possible impacts of disasters. It also covers how gender relations shape the practices in disaster response, recovery, coping and adaptation mechanisms, as well as risk reduction planning.	▪ Realize the difference between sex and gender from the biological and socio-cultural perspectives ▪ Establish links of gender equality with disaster and DRR ▪ Conceptualize gender mainstreaming and its role on DRR	**Module 1: Basics of Gender and Disaster** ▪ The essence of gender ▪ Gender and related concepts, ▪ Gender-based inequalities and gender dimensions **Module 2: Gender Analysis Approaches** ▪ Gender analysis ▪ Gender analysis models and frameworks	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Debating, questioning & answering ▪ Individual &group works and presentations	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
				Existing policies regarding gender, disaster and development will also be discussed.	▪ Identify concepts and tools for gender analysis and mainstreaming frameworks	▪ Gender analysis results interpretation **Module 3: Gender and Disaster Nexus** ▪ Gender equality, disaster and DRR linkage ▪ Gender and emergency response ▪ Gender mainstreaming in DRM	▪ Audio-visual materials presentation	
6	Logistics and Disaster Management	All working on emergency management	5 days	This training course will include the concept of logistics management in the pre, during and aftermath of the disaster. The training theme highlights the logistics functions for Disaster and DRR that transits to sustainable development	▪ Describe the concept of logistics from different point of views, such as military, business, emergency, production, and other sectors ▪ Identify the importance of logistics management, warehousing, storage, transportation, and distribution as well as relief management at the time of disaster occurrence	**Module 1: Conceptual Understandings** ▪ The concepts of disaster and logistics management ▪ Scope of disaster and logistics arrangement ▪ Type of logistics ▪ Aim and function of logistics arrangement **Module 2: Administration and Strategy** ▪ Administration and logistics	▪ Participant-centered active adult learning approach will be followed	▪ Pre-and post-training interview & questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Examine the elements of logistics with in emergency setting including transportation and supply chain management ▪ Examine the quality assurance of the relief items to reduce cascade impacts of the disaster due to poor relief management	▪ Logistics strategy and planning ▪ Emergency logistics planning ▪ Supply chain and physical distribution management **Module 3: Warehousing and Transportation** ▪ Storage/ warehousing and handling systems ▪ Transportation and distribution ▪ Mode of transportation ▪ Forecasting logistics requirements in emergency management		
7	Livelihoods and Food Security	All levels of administration in EDRMC and sectoral offices working on livelihood and food security theme	5 days	The training theme will introduce the wider concept of livelihood and food security in relation to disaster risk management. It also aimed to introduce different approaches used in the analysis of livelihood including sustainable livelihoods frameworks and household economy analysis.	▪ Define the meaning of livelihood ▪ Scrutinize the components of livelihood ▪ Critique on sustainable livelihoods frameworks ▪ Analyze the major components of sustainable livelihood frameworks	**Module 1: Concepts of Livelihoods** ▪ The concepts and implications of livelihoods ▪ Components and dimensions of livelihoods ▪ Livelihoods frameworks ▪ Livelihoods diversification	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Group discussion and debates	Pre-and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Integrate the diverse concepts of food security and insecurity vis-a-vis livelihoods ▪ Identify the components of food security Identify the food security assessment methods and programming mechanisms ▪ Introduce food security analysis methods (IPC, LEAP)	**Module 2: Concepts and Approaches to Food Security** ▪ The concepts of food security ▪ Food security programming approaches and modalities ▪ Food security assessment and analysis ▪ Livelihoods and Food security nexus ▪ Coping and adaptive strategies for food security and livelihoods	▪ Individual assignment and presentation	
8	Emergency Preparedness and Response	Technical experts working in emergency preparedness and response	5 days	This course gives due emphasis to the concept of emergency preparedness and response; emergency plan and policy development, and plan validation and activation.	▪ Identify the concepts of disaster preparedness and response processes ▪ Develop skills in emergency preparedness and vulnerability reduction ▪ Describe the common principles, phases & stages of disaster preparedness & response plans	**Module 1: Introduction** ▪ Concepts of emergency preparedness and response ▪ Principles, phases and stages of disaster preparedness ▪ Emergency preparedness policy development	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Group discussion and presentation ▪ Individual assignment and presentation	Pre- and post-training interviews & questionnaires based-evaluation

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Get familiarized with the concepts of community-based emergency preparedness &response	**Module 2: Assessment and Planning** ▪ Vulnerability assessment techniques and practices ▪ Emergency planning ▪ Disaster response and rapid needs assessment ▪ Monitoring and evaluation		
9	Conflict Management Mechanisms and Approaches in DRM	All levels	5 days	This training theme provides both the theoretical and analytical tools for identifying the causes, consequences, and dynamics of conflict along with the various means of resolving conflict The training theme focuses on social and political conflict between groups, and between the state and groups of people, with an emphasis on large-scale violent conflict	▪ Identify the causes and consequences of conflict and its resolution ▪ Familiarized with the relevant conflict resolution mechanisms ▪ Analyze the conflict issues and suggest possible local-based solutions	**Module 1: Introduction to Conflict** ▪ Concepts and terminologies of conflict ▪ Causes and consequences of violent conflict **Module 2: Conflict Management** ▪ Conflict analysis frameworks ▪ Displacement monitoring and response management ▪ Conflict resolution mechanisms and approaches	▪ Power point presentation ▪ Scenario exercises on Ethiopian conflicts ▪ Group work and presentation	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Conflict resolution mechanisms in Ethiopia		
10	Computer Basics	Zone and woreda experts	5 days	This theme covers fundamental concepts of computer hardware and software, computer applications, including word processing, spreadsheets, databases, and multimedia presentations, Internet-based applications, working with email and learning how to browse the web	▪ Identify computer software, hardware, and peripheral devices ▪ Be familiar with software applications ▪ Operate file management ▪ Create basic documents, worksheets, presentations, and databases ▪ Work on Microsoft office, excel, access and power point ▪ Experience working with email and recognize email etiquette ▪ Explore the web and download documents and information/data ▪ Understand the roles of computers in DRM	**Module 1: Basics of Computer** ▪ Definitions and basic terminologies ▪ Historical developments of computers ▪ Classification of computers ▪ Characteristics and components of computers **Module 2: Computer Operating systems** ▪ MS word, MS excel. MS access and MS PowerPoint ▪ Module 3: Advanced Computer Applications ▪ Introduction to software applications ▪ Internet basics (web browsing and email) ▪ Roles of computers in DRM	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Laboratory-based practices and exercises ▪ Individual work	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
11	Geographical Information System (GIS) and Remote Sensing (RS) in DRM	Researchers and Data Analysts	7 days	Geographic Information Systems (GIS) plays an important role in disaster risk assessment and management. Through lectures and practical exercises, this training theme illustrates the fundamental concepts of GIS and Remote Sensing technologies in the context of DRM which covers the introductory concepts;, definition and scope; significance;, history of GIS data; and the application of GIS and remote sensing on vulnerability/risk mapping	▪ Familiarized with GIS and apply GIS and RS for designing large scale early warning systems ▪ Apply GIS/remote sensing in hazard, vulnerability mapping and risk assessment. ▪ Apply remote sensing data and image processing techniques to monitor hazardous events and assess damage ▪ Employ risk information in emergency preparedness planning ▪ Analyze the basic principles of Remote Sensing and Aerial Photo Interpretation ▪ Explain Satellite-based remote sensing and Digital Image Processing and Interpretation	**Module 1: Concepts of GIS and Remote Sensing** ▪ Introduction to GIS, Remote Sensing and use of open sources world data system and data extraction ▪ Basic principles of GIS, remote sensing and aerial photo interpretation **Module 2: GIS and Remote Sensing Application in DRM** ▪ Analysis and modeling of spatial phenomena ▪ Satellite-based remote sensing and digital imaging ▪ Image processing and its application in DRM **Module 3: Vulnerability Mapping** ▪ Vulnerability map projection ▪ Data processing and interpretation	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Laboratory based practical exercise ▪ Individual work ▪ Group work	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Creating and editing spatial data ▪ Global positioning system (GPS)		
12	Software-Based Data Analysis and Interpretation Techniques	All experts working in the area of ICT and communi-cation	5 days	This training covers both quantitative and qualitative methods for conducting meaningful inquiry and research. It also deals with research intent, design, methodology and technique, format and presentation, data management and analysis and statistical methods with the application of sophisticated software such as SPSS, STATA, LEAP, and other sophisticated software available.	▪ Effective and efficient data manipulation ▪ Prepare research and project proposals in their area of expertise ▪ Accurately collect, analyze, and report data ▪ Present complex data or situations clearly ▪ Review and analyze research findings ▪ Demonstrate the application of digital/automated tools in DRM data analysis and management	**Module 1: Introduction** ▪ Basic research/ assessment concepts ▪ Developing a hypothesis, a research problem, and related questions **Module 2: Methodology** ▪ Data collection ▪ Qualitative research methods ▪ Quantitative research methods ▪ Mixed methods research **Module 3: Data Analysis Techniques** ▪ Data analysis techniques and software applications (SPSS, STATA, ...) ▪ Application of data through mobile phone, GIS, ...	▪ Participant-centered adult learning approach ▪ Lecture ▪ Laboratory-based practical exercise ▪ Group discussion and presentation ▪ Individual work and presentation	Pre- and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Leveraging technology in DRM data collection analysis and decision support system **Module 4: Reporting and Dissemination** ▪ Report writing and interpretation ▪ Completing the research projects and programs ▪ Results dissemination to the end users		
13	Disaster Risk Assessment	Technical staffs working on DRR and CCA	5 days	This training course is about the fundamentals of disaster terminologies, concepts, applications, and assessment methods. It will expose trainees to disaster risk theories, explore various DRM models and management systems, introduce to disaster risk reduction knowledge management, disaster risk assessment findings and risk mapping	▪ Inculcate basic concepts, terminologies, models, and theories in DRM ▪ Analyze the dynamics of disaster risks ▪ Examine the common disaster risk assessment methods, tools, indicators, and formats ▪ Independently conduct DRR assessments	**Module 1: Introduction** ▪ Hazards and disaster risks ▪ Disasters and disaster risks on the global scene ▪ Vulnerability/ capacity and resilience **Module 2: DRM Models and Theories** ▪ Disaster/disaster risk theories and models	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Group discussions ▪ Group-based exercises & presentations ▪ Self-assessment exercises	Pre-and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Disaster risk management approaches ▪ DRM frameworks and strategies **Module 3: Disaster Risk Assessment** ▪ Importance of disaster risk assessment ▪ Common formats of disaster risk assessment ▪ Basic components and steps of disaster risk identification and assessment ▪ Assessment tools and indicators ▪ Hazard/disaster risk mapping ▪ Assessment result interpretation ▪ Intervention strategies		
14	Disaster Risk Profiling	Zonal and woreda level experts/ graduate trainees working on DRM and CCA	5 days	This training theme will focus on the essences and historical developments, causes and consequences,	▪ Examine the meanings and essentialities of disaster risk profiling	**Module 1: Concepts of Disaster Risk Profiling** ▪ The historical developments and essences of disaster risk profiling	▪ Participant-centered adult learning approach ▪ Power point presentation	Pre- and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
14				measures, indicators and data analysis strategies and communications of disaster risk profiling programs.	▪ Identify underlying, root and immediate causes of disaster risks ▪ Analyze the components of disaster risks profiling along with the measures and indicators	▪ Causes, consequences, and mitigation measures of common disaster risks in Ethiopia **Module 2: Risk Profiling Methods** ▪ Indicators and measures of disaster risk profiling ▪ Data collection procedures ▪ Data analysis methods ▪ Disaster risk profiling information dissemination and communication strategies	▪ Group discussion and debates ▪ Case study analysis and presentation ▪ Individual assignment & presentation	
15	Drought Management and Predictions	Experts at all levels of administration	7 days	This theme presents the basic concepts of drought hazards, the different characteristics of drought as a hazard; underlying vulnerability factors to the impacts of drought hazards as well as assessment of drought;, drought management strategies; challenges and opportunities of drought management in Ethiopia	▪ Identify the tools available for drought risk management ▪ Familiarize with the different drought prediction models ▪ Review the dimensions and concepts of drought ▪ Define the different types of drought-associated	**Module 1: Basics of Drought Management** ▪ Introduction to drought risk management ▪ Types, causes and triggering factors of drought ▪ Characteristics of drought ▪ Vulnerability to drought	▪ Participant-centered adult learning approach ▪ Lecture ▪ Discussion ▪ Individual work ▪ Group work ▪ Case assessments ▪ Individual and group presentation	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ secondary and tertiary hazards ▪ Identify the causes and triggering factors of drought ▪ Explain the different measures, approaches and characteristics of drought Examine the impacts of drought on socio-economic and environmental resources ▪ Apply the drought assessment and prediction tools and models ▪ Analyze the different drought management strategies ▪ Identify the challenges and opportunities of drought management in Ethiopia	**Module 2: Impacts of Drought** ▪ Socio-economic and environmental impacts of drought ▪ Drought risk assessment methods and tools including climate modelling **Module 3: Drought Management and Predictions** ▪ Drought risk management modeling ▪ Drought management strategies and interventions ▪ Challenges of drought management ▪ Water shade management as a draught management strategy ▪ Pre-drought measures: sustainability issues, long-term planning, drought forecasting and warning, and drought risk maps		

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
16	Flood Forecasting Systems and Models	Heads and experts at federal and regional levels	7 days	This theme covers hydrologic problems, such as forecasting and observing heavy precipitation, floods and how such features impact flood control, hydroelectric power, irrigation, and similar fields of engineering and water resource management.	▪ Describe the processes of hydrological cycle ▪ Describe the significance of hydrologic cycle to local and global climate changes ▪ Discuss the implications of human interventions on the hydrological cycle ▪ Understand hydro-meteorological processes and the equations that describe them ▪ Examine fundamental hydro-meteorological problems associated with drought, water resource management, and flooding	**Module 1: Introduction** ▪ Introduction to hydro-meteorology ▪ Flood and flood vulnerabilities and response ▪ Precipitation types, measurement, variations in space and time, area estimates & extreme values. **Module 2: Flood Modeling** ▪ Evapo-transpiration: measurement and computation models ▪ Global numerical weather prediction models ▪ Optional downscaling of global precipitation ▪ Regional numerical weather prediction model ▪ Catchment hydrology modeling ▪ High-resolution flood inundation model	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Discussion and debating ▪ Simulation exercise	Pre- post training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Interception methods of measurement and calculation ▪ River/stream flow measurements and analysis **Module 3: Hygrometry** ▪ Hydrological observations ▪ Data processing and analysis ▪ Water resources management ▪ Thematic Auto-Meteorology weather monitoring and forecasting	▪ Laboratory-based individual practice ▪ Group-based practice ▪ Individual and group presentation	
17	Contingency Planning/ Shock Responsive Planning	All sectors working on DRR	5 Days	Designed to provide trainees the concepts and techniques of designating and implementing contingency planning with the active involvement of the partner sectors, organizations and the community at large	▪ Synthesize the principles of contingency planning ▪ Analyze stakeholders and partners in contingency planning ▪ Give examples of the uses and limits of contingency planning and a description of its place in the planning continuum	**Module 1: Basics of Contingency Planning** ▪ Essences of contingency planning ▪ Contingency planning principles ▪ Stakeholders and partners' involvement in the planning process	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Group discussion and debates ▪ Individual assignment and presentation-based on case studies	Pre-and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Describe the importance of the contingency planning process and tools ▪ Demonstrate tools and approaches needed to prepare and maintain contingency plans ▪ Analyze the quality and usefulness of contingency plans for emergency management	**Module 2: Contingency Planning Tools and Methods** ▪ Contingency planning tools ▪ Contingency planning scenarios ▪ Projecting contingency needs ▪ Contingency planning resource assessment ▪ Contingency planning development **Module 3: Implementation Strategies** ▪ Potential gaps identification ▪ Identification of functional working groups ▪ Functions of the sector teams ▪ Follow up/control ▪ Evaluation and learning		

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
18	Damage and Loss Assessment (ex-post)	All levels working on emergency management and disaster recovery	5 days	The training theme is designed to provide trainees better understanding on disaster damage and loss estimations to save lives and potential damages. Furthermore, the training theme provides ample background for disaster recovery after once hit by disaster.	▪ Explain the meaning and importance of damage and loss assessment ▪ Identify the planning methods, approaches and tools of the assessment ▪ Examine the data sources, collection methods, analyses methods, results interpretation and communication	**Module 1: Introduction** ▪ Introduction to damage and loss assessment ▪ Purpose of the assessment ▪ Planning the assessment ▪ Triggering mechanisms for the assessment **Module 2: Data Gathering and Assessment** ▪ General baseline data definition and gathering ▪ Identification of stakeholders ▪ Assessment team composition ▪ Consultations with the national government and other assessment partners ▪ Local facilities for assessment **Module 3: Assessment Methods and Approaches** ▪ Assessment frameworks and methodology	▪ Power point presentation ▪ Group assignment and presentation ▪ Field visit to the nearby affected areas ▪ Individual report writing and presentation	Interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Damage and loss assessment ▪ Report production & communication ▪ Execution of the assessment		
19	Environmental Social Impact Assessment (ESIA)	All experts and officials working on DRR and CCA at all levels	7 days	Knowledge on the principles of environmental impact assessment (EIA), definition, history and law- related to EIA, tools to evaluate environmental impacts, principles of EIA on physical, biological, human use and quality of life.	▪ Describe the essences of environment ▪ Explore the national environmental policy of Ethiopia ▪ Identify the basic EIA components and techniques through scenarios ▪ Present and explain the components and decision making processes involved in environmental impact assessment ▪ Acquaint with environmental conservation planning and practices ▪ Create a visual representation of data that comprises an environmental impact assessment	**Module 1: Introduction to EIA** ▪ Overview of the environment ▪ Components of the environment ▪ Process and components of EIA (screening, scoping and auditing) ▪ EIA results report writing **Module 2: Environmental Conservation** ▪ Natural resource management and conservation planning and practices ▪ Socio-economic and environmental balance/ecological balance of nature	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Discussion and debate ▪ Individual work ▪ Group work ▪ Individual and group presentation	Pre-and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
					▪ Introduce environmental sensitive development and investment planning	**Module 3: Planning and Implementation** ▪ Relocation, resettlements, refuges, environmental justices		
20	Monitoring, Evaluation (M&E) and Learning	All sectors working in DRM and CCA	5 days	The training theme will expose trainees to get familiar with the control and follow-ups of the projects and program implementation as well as to mid-term and terminal evaluations. Projects are usually evaluated based on the basic parameters of effectiveness, efficiency, impact, relevance, and sustainability. To these ends, the processes and applications of project monitoring and evaluation familiarity is an integral part of the competency that DRM and CCA experts are required to acquire.	▪ Describe the essences of project M&E ▪ Identify the major project M&E parameters ▪ Identify the approaches for M&E during the course of project implementation as well as after its termination ▪ Able to establish SMART project performance indicators ▪ Comprehend the practical applications of M&E with respect to the required data, measurement units, analysis and interpretation of results ▪ Work on M&E statistical analysis tools	**Module 1: Concepts of Monitoring and Evaluation** ▪ Concepts and implications of M&E ▪ Purposes and scope of the M&E system ▪ Types of monitoring and evaluation ▪ Monitoring, evaluation, reviews, and audits **Module 2: Standards and Frameworks of M&E** ▪ M&E standards and ethics ▪ Plan for M&E human resources and capacity building ▪ Participatory monitoring and evaluation ▪ Development of Log frame matrix	The training will be delivered through combination of methods including interactive teaching-learning and group project preparation and presentation, review and reflection.	Questionnaire and interview

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Results based monitoring-results-based management **Module 3: M&E Data Analysis and Interpretation** ▪ Data analysis dimensions setting ▪ Data collection and management plan ▪ Data sources and collection ▪ M&E data analysis methods: Experimental and quasi-experimental quantitative data analysis methods and models ▪ Interpretation of analysis results ▪ Monitoring and evaluation planning for DRM program ▪ DRM best practices identification, documentation and sharing ▪ Reporting styles and methods ▪ Results dissemination and learning		

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
21	Early Warning System	Early warning experts at all levels of adminis-tration[18] and graduate trainees	5 days	This training focuses on how to design and apply end-to-end multi-hazard early warning systems.	After taking this training course, trainees will be able to: ▪ Define basic terminologies and concepts related to end-to-end multi-hazard EWS ▪ Detect, monitor and forecast droughts and floods ▪ Use risk assessments and maps to design end-to-end multi-hazard EWS ▪ Develop risk communication strategies ▪ Communicate scientific information in user-friendly formats ▪ Develop Standard Operation Plans (SOPs) for end-to-end multi-hazard EWS	**Module 1: Introduction to Multi-Hazard EWS** ▪ Basic terminologies and concepts related to DRM and end-to-end multi-hazard EWS ▪ Tools for end-to-end multi-hazard EWS ▪ Enabling environment for end-to-end multi-hazard EWS **Module 2: Hazard Detection, Monitoring and Forecasting** ▪ Hazard detection, monitoring and forecasting: drought ▪ Hazard detection, monitoring and forecasting: flood ▪ Case studies	▪ Participant-centered adult learning approach ▪ Lecture ▪ Discussion ▪ Individual work ▪ Group work ▪ Case assessments ▪ Individual and group presentations	Pre- and post-test, survey

[18] The particular set of training in early warning system will be adapted as per the levels of training coverage (federal, regional, zonal, woreda or mix of all or some) and the specific types of early warning training would be decided as per the identified and common disaster risks. Thus, drought early warning training would be given to those drought prone areas, flood early warning training would be given to flood prone areas, etc...

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						Module 3: Risk Assessment and Risk Communication for EWS ▪ How to use risk assessments for EWS ▪ How to communicate risk for effective EWS **Module 4: Standard Operating Procedures for EWS** ▪ Development of standard operating procedures for multi-hazard EWS **Module 5: Monitoring and Evaluation of EWS** ▪ Tools and indicators for M&E of EWS		
22	Disaster Risk Information Management (DRIM)	All DRM staff	3 days	The general purpose of the training theme is to equip training participants with the concepts of information, data, data collection mechanisms, disaster risk and emergency information system and emergency information management.	▪ Define emergency information management ▪ Differentiate data and information ▪ Discuss the importance/ relevance of information management system	**Module 1: Basics of DRIM** ▪ Fundamentals of disaster information management ▪ Data and information sources of disaster risk management	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Group discussion and presentation	Pre- and post-training interviews and questionnaires-based evaluation

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
22					▪ Identify types of disaster information management ▪ Analyze disaster-related data ▪ Identify information needs in emergency management ▪ Describe the components, resources required, processes, and sources of information	**Module 2: DRIM Techniques and Applications** ▪ Techniques and tools for disaster risk and emergency information management ▪ Data analysis and information production software application ▪ Information dissemination and decision-making process ▪ Automation of DRM information management and application of virtual working environment	▪ Individual assignment and presentation	
23	Search and Rescue (SAR)	All levels of administration heads and experts	5 days	This training theme is prepared for both the top, middle and bottom level managers and experts working in the areas of emergency responses. The theme begins with the philosophy of SAR and raise various important international standards, frameworks, principles and	▪ Develop basic knowledge of how search and rescue is organized at local, national and international levels ▪ Develop an awareness of available SAR assets, their deployment, and co-ordination, to affect a rescue.	**Module 1: Concepts of SAR** ▪ The philosophy of SAR ▪ International SAR conventions ▪ Basic SAR charts ▪ National SAR plans & procedures ▪ Search & rescue team operations	▪ Participant-centered adult learning approach ▪ Power point presentation ▪ Simulation exercise ▪ Group discussion and presentation	Pre- and post-training interviews and questionnaires-based evaluation

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
23				governing articles whereby SAR participants need to develop and practice prior to the emergency response deployment	▪ Aware of the various sophisticated SAR approaches with international standards	**Module 2: SAR Operation Systems** ▪ Operational control of SAR ▪ Responsibilities of Senior Search and Rescue Officer ▪ Rescue coordination centers ▪ International SAR boundaries and areas of responsibility ▪ SAR satellites ▪ SAR agencies and their capabilities/ aircraft/assets ▪ Initial search procedures and rescue planning ▪ SAR implementation	▪ Individual assignment and presentation ▪ Video demonstration	
24	DRM Resource Mobilization, Fund Raising and Advocacy	Experts working in the area of DRM resource mobilization, fund raising and project/ program management	3 days	Disasters can happen anywhere and at any time. Specifically, in developing countries, the resources to react well are often lacking. Being prepared and knowing how to raise and mobilize funds in emergency situations is of key importance to be able to react and to save lives.	After this training, trainees will be able to: ▪ Aware of the need for consistent and sustained resource flows and the importance of systematic resource mobilization efforts	**Module 1: Introduction** ▪ Concepts of resource mobilization and fund raising ▪ Overview of resource mobilization and fund raising in the global, regional and national levels	▪ Participant-centered adult learning approach ▪ PowerPoint presentation ▪ Discussion ▪ Individual work ▪ Group work	Pre- and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
				When the disaster is of a certain scope, the willingness to help is high – but to actually benefit from it and save the lives of beneficiaries, it is important to know the techniques of raising and mobilizing funds and well prepared in advance.	▪ Understand how, based on such analysis, resource planning can be carried out and appropriate resource mobilization done ▪ Understand innovative means of resource mobilization being pursued in the national and international levels ▪ Well aware of the humanitarian policy, strategy and standards	▪ Resource mobilization cycle Approaches to resource mobilization **Module 2: Fund Raising Planning and Analysis** ▪ Humanitarian fund raising and the international landscape ▪ Fund raising methods and approaches ▪ Humanitarian pooled funding mechanism ▪ Emergency response funds planning ▪ Country based pooled funds analysis **Module 3: Policy, Strategy and Standards** ▪ Resource mobilization policy and strategy ▪ Fund raising policy ▪ Fundraising code of conduct ▪ Ethics and donor's Bill of rights	▪ Case assessments ▪ Individual and group presentations	

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
						▪ Policy for corporate sector partnerships **Module 4: Advocacy** ▪ Principles and approaches of advocacy ▪ Targets of advocacy ▪ Essentials and purposes of advocacy ▪ Role of data and evidence for advocacy		
25	Emergency Operation Management	Staff members/ experts working in the area of emergency response and management	3 Days	Nations experience a diverse set of threats, hazards, and events. The size, frequency, complexity, and scope of these incidents involve a range of personnel and organizations to coordinate emergencies to save lives, stabilize the incident, and protect property and the environment. their success depends on a common, interoperable	▪ At the end of this training theme, trainees will be able to: ▪ Describe the attributes of an effective MAC/EOC/ICS[19] interface. ▪ Identify EOC strategies and approaches ▪ Analyze the physical, cognitive, and behavioral signs and signals of stress.	**Module 1: Introduction** ▪ Overview of MAC, EOC and ICS ▪ EOC functions ▪ EOC/ICS interface ▪ Emergency information analysis, management & communication **Module 2: EOC Strategies** ▪ Strategic design and formulation ▪ Maintaining a positive climate in the EOC		

[19] EOC- Emergency Operation Center; MAC- Multiagency Coordination, and ICS - Incident Command System

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
				approach to sharing resources, coordinating and managing incidents, and communicating information.	▪ Familiarize on the provision of effective psychological support ▪ Internalize the basic knowledge of EOC ordering process	▪ Basic essentialities in ensuring the readiness of an EOC. ▪ Staff planning ▪ Activation & deactivation ▪ Coordination of emergency activities **Module 3: Victims Support System** ▪ Stress management ▪ Decision making ▪ Simulation exercise ▪ Summary and transition of ordering process	▪ Participant-centered adult learning approach ▪ PowerPoint presentation ▪ Discussion ▪ Individual work ▪ Group work ▪ Case assessments ▪ Individual and group presentations	Pre- and post-training interview and questionnaire
26	Urban DRM	Experts working in the area of urban DRM and interested urban residences	3 days	Reducing disaster risk caused by natural hazards in urban areas is largely a development issue and needs to be addressed within the context of a wider urban development framework. Reducing disaster risk will contribute to strengthening urban resilience and sustainable urban development. The theme is designed to provide the	At the end of the training, participants will be able to: ▪ Explain the approaches and methods for disaster management and their implementation in the urban context. ▪ Describe the nature, extent of threat and significance of countermeasures required for urban risk mitigation.	**Module 1. Introduction** ▪ Risks and vulnerabilities identification in the urban context ▪ Urban disaster risks: perspectives & approaches **Module 2: Urban Disaster Risk Impact:** ▪ Urban disaster impact ▪ Role of urban planning for risk mitigation	▪ Participant-centered adult learning approach ▪ PowerPoint presentation ▪ Discussion ▪ Individual work ▪ Group work ▪ Case assessments ▪ Individual and group presentation	Pre- and post-training interview and questionnaire

S. N.	Training Theme	Target Groups[17]	Duration	Descriptions	Objectives	Contents/ Modules	Mode of Delivery	Assessment Method
				knowledge and skills on urban risks, the possible impacts, mitigation strategies and future trends to the participants.	▪ Identify the disaster management interventions ▪ Explain the need and nature of integration of urban risk concerns into the urban development process ▪ Describe the future strategies for DRR in an urban context ▪ Appreciate the practice of urban disaster risk mitigation in Ethiopia	▪ Environmental impacts on urban contexts ▪ Implications of urban transport to DRR ▪ Health Issues for urban disaster risk Climate change and urban disaster risks **Module 3: Action Planning & Strategies for Urban DRR** ▪ Mainstreaming DRR in urban development policies and governance ▪ Frameworks for urban risk reduction ▪ DRR planning & mitigation frameworks & strategies ▪ Risk assessment & vulnerability analysis ▪ Frameworks for building resilient cities ▪ Experience of Ethiopian urban DRR		

3. Lists of Online Training Courses

S.N.	Name of Countries, Institutes and Training Courses	
	The Philippines[20]	
1	Community-Based Disaster Risk Reduction & Management	Comprehensive Natural Disaster Risk Management Framework
2	Rapid Damage Assessment & Needs Analysis	Community-based Disaster Risk Management
3	Disaster Prevention and Mitigation	Safe Cities
4	Disaster Preparedness	Damage and Reconstruction Needs Assessment
5	Disaster Response	Financial Strategies for Managing the Economic Impacts of Natural Disasters
6	Disaster Rehabilitation and Recovery	Earthquake Risk Reduction
7	Public Service Continuity Planning	Climate Change & Disaster Risk Management
8	Post-Disasters Needs Assessment	Land Use Planning for Urban Risk Reduction
9	Local DRR and Management Planning	-
10	Incident Command System	-
11	Exercise Design	-
12	Emergency Operation Center	-
13	Contingency Planning	-
14	Basic Disaster Concepts	-
15	Philippine DRR and Management System	-
	Thailand: Asian Institute of Technology[21]	
1	Managing Disasters	
2	Remote Sensing and GIS for Disaster Mitigation	
3	Climate Hazards and Early Warning Systems	
4	Community-Based Disaster Risk Reduction and Management: Theory and Practice	
5	Disaster Governance, Policy and Risk Management	
6	Disaster Response and Emergency Management	
7	Mitigation of Earthquake Disasters	
8	Floods and Droughts	
9	Human Conflicts and Humanitarian Emergency Management	
10	Disaster Management and Humanitarian Assistance	
11	Multi-stakeholder Engagement for Disaster Risk Reduction	
UNOCHA Service- ReliefWeb Institute of Development Studies[22]		
S.N.	**Name of Courses**	
1	Disaster Risk Reduction and Management	
2	Building the Resilience of Essential Services Post-COVID	
3	Building Resilience Through Disaster Risk Reduction and Climate Change Adaptation	
4	Housing, Land, and Property in Shelter Programs	
5	European and International Human Rights Standards in Disaster Settings	
6	Health Systems Through Crisis and Recovery	

[20] WBI distance learning program on natural disaster risk management: https://www.preventionweb.net/events/view/2309?id=2309
[21] Asian Institute of Technology, Thailand: https://www.ait.ac.th/admissions/eligibility/course-catalogue/serd-set_main/serd-set_dpmm/
[22] https://reliefweb.int/training

S.N.	Name of Countries, Institutes and Training Courses
7	Relief and Recovery Orientation Course
8	Conflict Mediation and Peace-Building
9	Negotiation Skills for Humanitarian Aid Workers
10	Hostile Environment Awareness Training
11	Finding New Donors - Research and Networking
12	Fundraising Strategy in Times of the Corona Virus
13	Monitoring and Evaluation Fundamentals
14	Funds Raising in Humanitarian Emergencies
GEDRR- World Bank Groups in Partnership with the Republic of Korea, Ministry of of Economy and Finance[23]	
S.N.	**Training Courses**
1	Climate Change Mitigation
2	Disaster Risk Management
3	Climate Risk Management
4	Climate Science
5	Climate Forecasting
6	Climate Finance
7	Environmental Impact Assessment
8	Gender and Disaster Management
9	Safe and Resilient Cities
10	Disaster Risk Finance
11	Disaster Resilience
12	Fundamentals of Disaster Risk Finance
13	Post-Disaster Needs Assessment
14	Integrated Urban Flood Risk Management

4. Regional and Woreda Level FGDs Checklist

I. Background Information

Region/Zone/Woreda: _____Organization's Name_____

S.N.	Name of Participants	Sex	Age	Levels of Education	Field of Study	Department/ Work Process	Years of Services in that Department	Tel. No.
1								
2								
3								
4								
5								

[23] https://olc.worldbank.org

II. Training Need Assessment and Institutional Mapping

1. How do you understand hazards, disaster risks, disasters, vulnerability and resilience?
2. How do you understand the concepts of DRM, DRR and CCA?
3. Do you know the major national and international frameworks whereby the National DRM Policy and Strategy, and CRGE of Ethiopia built on? If yes, please mention.
4. How is the organizational set up of your sector/department working on DRM and/or CCA? (Prob. institutional arrangements, enabling environments, human resources, logistics, finance, etc…)
5. Explain the extent to which the concept of DRM and CCA are mainstreamed in your organization? (Prob. the extent to which your institution has included the issues of DRM/DRR and CCA information use in the short, mid and long-term plans, policies and strategies).
6. What responsibility does your institution has in relation to DRM and CCA?
7. How do you judge the quality and effectiveness of the delivery of the responsibilities?
8. Is there appropriate organizational set up for delivery of the specific roles and responsibilities in the organization?
9. What are the major DRR and CCA related information you are communicating with different stakeholders/agencies?
10. Discuss the major sources of DRR and CCA weather information production and sources your organization ever used.
11. Explain when and how you manipulated those information from such sources.
12. What are the major ways of DRR and CCA information communication and dissemination mediums to the respective levels of organizations?
13. Explain the challengesand/or barriers that hinder the communication between experts of the federal, regional, and woreda levels.
14. How is the overall meteorological forecast and dissemination status in your organization?
15. Explain the extent to which weather and climate forecasts used for decision support system in your organization.
16. Is there any system and/or platform where your organization can interact with actors including all the stakeholders in the issues related to DRR and CCA related information production, communication and dissemination to the next level of administration? To what extent is the system/platform efficient? If it is inefficient, what are the problems?
17. Does the organization have the right composition of DRM professionals with the required skill sets and experience? If not what is missing?
18. Do you think that all experts and stakeholders working on DRR/CCA have the required technical capacity to execute their responsibilities related to various hazards/risks? If not, explain?
19. How do you evaluate the DRM and CCA training accomplishments and the subsequent professional developments in your organization?

20. Has your organization conducted any training on DRM and CCA? If yes, please provide the details of the training.

S.N.	Name of the Training	Training Provider	Number of Days	Remark
1				
2				
3				
4				

21. Describe the key challenges for your sector/organization in effectively preparing for disasters risk reduction; contingency plans/preparedness plans; insurance; and implementation (Prob.: knowledge, skill, attitude experience, needs, data/information, technology, funds, time, management, communication facilities or others).

22. Which training themes do you suggest as desired training themes? Cascade from the MOST to the LEAST prioritized training themes.

Priority	Name of the Training Themes	Duration in Days	Whom? Institutions in Domestic/Abroad
1			
2			
3			
4			

23. Do you think that identification of DRM and CCA training needs is integrated across the organizations? If "Yes" provide an example and if "No" why?

24. Does the organization has the human resource (HR) management function which organizes overall training needs and delivery? If not, why?

25. How does the organization identifies, prioritizes and selects training needs, and who takes what trainings?

26. Discuss the women's involvement in DRM and CCA trainings and overall participation.

27. Any additional overall comments: _____.

A. Federal, Regional, Zonal and Woreda Sectors KIIs Checklist

I. Background Information

Name of Federal, Region/Zone/Woreda Sector: _____

S.N.	Name of Participant	Sex	Age	Levels of Education	Field of Study	Department/ Work Process	Position	Tel. No.

II. Training Needs Assessment and Institutional Mapping

1. Does your organization works on DRM and CCA? If yes, explain the specific working areas?

2. Explain the organizational set up of your sector/department working on DRM and/or CCA?

3. Explain the human, financial and material resources used to run the DRM/DRR/CCA activities?

4. Explain the extent to which the concept of DRR and CCA are mainstreamed in your organization?

5. How do you judge the planning, implementation, monitoring& evaluation capacities of your organization on DRM and CCA tasks?

6. What are the mechanisms in place in your organization to engage stakeholders? How effective the leadership to ensure successful participatory planning and implementations of programs?

7. How are the effectiveness of existing operational systems and awareness of the staff about the existing guidelines, procedures and systems of the organization?

8. How do you assess the operational contexts/enabling environments of your organization?

9. How do you judge the levels of understanding on risks that affects the organization's smooth operation and measures taken to ensure continuity of operations?

10. How do you evaluate the training accomplishments and the subsequent professional developments of your organization?

11. Do you think that your organization is equipped with right composition of DRM professionals, skill sets and competencies required to perform on its mandate? If not what skill set is lacking?

12. What are the major DRR and CCA related information you are communicating with d/t stakeholders/agencies?

13. What are the major ways of DRR/CCA information communication and dissemination mediums to the federal/regional/zonal/woreda/kebele administrations/communities?

14. How is the overall meteorological forecast and dissemination status in your organization?

15. The extent to which weather and climate forecasts used for decision support system in your organization.

16. Is there any system and/or platform where your organization can interact with actors including all the stakeholders in the issues related to DRR and CCA? If yes, to what extent is the system/ platform efficient? If it is inefficient, what were the problems?

17. Do you think that all the experts and stakeholders working on DRM and CCA have the required technical capacity to execute their responsibilities related to various hazards/risks?If not, what capacities, capabilities and competencies do they lack?

18. Which DRM and CCA trainings do you suggest to be taken potentially? Cascade from the MOST to the LEAST prioritized training themes?

19. Mention the major DRM/DRR and CCA related trainings your organization have conducted so far. Please provide details of the training themes, training providers, and number of participants and training days.

20. Discuss the extent to which your institution has mainstreamed the issues of DRM and CCA in the short, medium and long-term plans, policies and strategies.

21. Describe the key SWOTs of your sector/organization in effectively preparing and implementing DRM and CCA trainings.

22. Explain how the training strategy of the organization address gender issues and women staff specific needs?

23. Explain the women's involvement in the training process and overall representations.

24. Any additional comments: _____

5. KIIs Checklists for Universities and Research Institutes

I. Background Information

Organization's Name:_____

S.N.	Name of Participant	Sex	Age	Levels of Education	Field of Study	Department/ Work Process	Position	Tel. No.

II. Training and Research Related Data/Information

1. Name the departments/teams/work processes working in the areas of DRM and CCA.
2. Does the organization have a unit responsible to analyze training needs and facilitate planning and monitoring of technical capacity building?
3. List the major training tasks in the area of DRM and CCA
4. List of DRM and CCA related training themes provided so far.
5. List the DRM related research themesconducted so far.
6. How do you evaluate the relevance, effectiveness and dependability of the DRM research agenda/priorities to the target users of the research products? Are there systematic mechanisms in place for checking the effectiveness and relevance?
7. Capacity gaps observed while performing those DRM and CCA training and research:

   Training:_____

   Research: _____

6. List the desired/potential training needs _____
7. List the desired/ potential research needs: _____
8. Potential areas of cooperation with federal, regional, zonal and woreda DRM offices):_____.
9. List of existing DRM & CCA related education programs (under and postgraduate programs)[24]

S.N.	Name of the Program	Level of the Program	Name's of Modular Theme	Total Number of Graduates Since Establishment
1				
		Under/ Postgraduate or both		

[24] Question 9 &10 are applicable for higher educational institutions

10. Basic contents of the curriculum in the respective programs (mention in terms of modular curriculum modules and respective contents. _____

11. Key gaps observed in the areas of DRM research: _____

15. Potential areas of cooperation/complementation with other sectors_____

16. Please list any suggestions what the new EDRMC study, research and training directorate may complement with your institute: _____.

6. Questionnaire Survey

Part 1: Background Information

Name	Sex	Age	Highest Levels of Education	Profession	Current Position	Experience in DRM and CCA in Years
	M=Male F=Female		Diploma/BA/ BSC/ MA /MSc/ DVM/PhD	Major Field of Study		

Part 2: General Levels of Understanding & Awareness about DRM and CCA

Please indicate the degree of your agreement about your levels of knowledge, skill and attitude (KSA) on the under listed DRM and CCA thematic areas. Please read the descriptions of the levels vis-a-vis the likert scale measures carefully before you start answering questions and put a tick mark (√) under.

2.1 Knowledge, skill and attitude towards DRM and CCA Training and Research Strategy

A) Knowledge, skill and attitude towards DRM and CCA: Tick on one fits with you (√)

S.N	Description	(√)
1	I do not have any knowledge, experience and skill; I need immediate training intervention from the scratch	
2	I do have little awareness but no detail knowledge and skill; I need trainings soon	
3	I do not know about my status on these topics	
4	I do have sufficient knowledge but lack practical skills; I need practical advanced training	
5	There is sufficient KSA- no need of training intervention	

B) Research and Training Strategy of your organization

S.N	Description	(√)
1	There is no clearly stated strategy	
2	The strategy is not as such clear and specific though the strategic components are there	
3	Moderately clear or specific understanding of what the organization aspires to become or achieve	
4	A clear, specific statement of what the organization aspires to become or achieve. Well-known to most but not all staff. Sometimes used to direct actions and to set priorities	

5	A clear, specific and forceful understanding of what the organization aspires to become or to achieve. Well-communicated and broadly held within the organization. Consistently used to direct actions and set priorities	

C) Operational Policies, Procedures, and Systems

Description	(√)
No documented operational policies and procedures	
Documented a few operational policies and procedures	
Documented half of the operational policies and procedures	
Almost all complete and appropriate operational policies and procedures are documented and properly in use	
Complete and appropriate operational policies and procedures documented and in use	

D) DRM and CCA Information Systems

Description	(√)
Documented information system policies and procedures	
Documented pieces of information system policies and procedures, but they are incomplete or inappropriate	
Partially documented information system policies and procedures	
Documented most information system	
A staff member (or outside provider) designated to manage the information system	
Completely & appropriately documented information system policies & procedures	
Availability and use of ICT that can serve the information communication and documentation	

E) Staffing Levels of the Organization

Description	Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Formal staffing plan					
Positions/vacancies that are documented					
Management and technical positions filled by staff without the right qualifications or skills					
System to ensure that positions are filled quickly					
High turnover and severe problems with staff attendance					
Retention procedures					

F) Volunteers and Interns Training and Recruitment

Description	Tick on One of the Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Policy for selecting or managing volunteers/interns					
Training program for volunteers / interns					
Availability of job descriptions					
Performance standards or feedback process					
Supervisory guidance to support volunteers/interns					

G) Budget Allocation for DRM/DRR and CCA Training and research

Description	Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Recurrent budget allocation					
Project/Capital budget					

H) Resource Mobilization

Description	Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Presence of business plan/ funding strategy					
Estimation of future resource needs in advance					
Presence of a system to nurture an in-house talent pool					
Identification of sectoral resources persons/focal points					
Identification of additional resources or opportunities to support its programs & activities					
Presence of communication strategy for resource mobilization					

I) DRM and CCA Communication Strategy

Descriptions	Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Complete communication strategy					
Tasked staff member(s) with communication strategy management including documentation oversight					
A process for testing materials/ messages and revising based on test results					

Developed its own contextualized and oriented staff					

J) Knowledge Management and Cooperation

Descriptions	Scale of Constructs(√)				
	V. Low	Low	Moderate	High	V. High
Active links with appropriate organizations to share best practices or program experiences					
A process for routinely sharing technical expertise and experiences with staff and stakeholders					
Applied best practices to its program and shares information with stakeholders and appropriate staff					
Annual planning that includes reviews and integration of new/current knowledge and best practices					

2.2 Prioritizing Training Interventions-The prioritizing training interventions as per the above description in the given thematic areas.

Thematic Areas		[25]Levels of KSA (√)				
		1	2	3	4	5
A. General Awareness DRM/CCA Conventions, Policies and Straegies						
• Your level of awareness about Ethiopian DRM policies, strategies, programs, etc.	DRM policy& strategy					
	DRM-SPIF					
	GTP 2					
	CRGE					
	Guideline for Mainstreaming DRM into Investment Decision in Ethiopia					
	Woreda disaster risk profiling document/ risk mitigation/ adaptation planning guideline					
• Your level of understanding about DRM and CCA operating manuals and procedures.						
B. Levels of Understnading on DRR & CCA						
• Similarity & difference between DRR & CCA						
• DRR & CCA information data manipulation						
• DRR & CCA information data production						
• Socio-economic & environmental impacts of hazards/disaster risks						
• Disaster risk/Vulnerability assessment						
• DRR & CCA data/information interpretation						
• Climate change and variability						

[25] 1. very low, 2. Low, 3. Moderate, 4. High, and 5. Very high

• Climate and weather forcasting models and tools	• NDVI					
	• Sattelite imagery					
	• LEAP					
	• FEWS NET					
	• GIS and remote sensing					
• DRR & CCA information based decision						
• The quality of training taken related to DRR & CCA						
• Concepts and applications of DRR & CCA information based systems						
• Sources of climate and weather information						
• Proper EWI communication to the experts, decision makers and community						
C. Generic Levels of KSA on DRM and CCA Training Themes						
• Climate change adaptation/mitigation awareness						
• Climate change adaptation strategy identification and development						
• Monitoring &evaluation systems						
• Environmental impact assessment						
• Disaster risk management /Disaster risk reduction						
• Environmental hygiene &sanitation						
• Climate change & urbanization						
• Flood forecasting & early warning systems						
• Drought forecasting & early warning systems						
• Land cover & land use changes &diagnostics						
• Disaster risk profiling concepts & implications						
• Disaster risk and vulnerability assessment						
• DRR & CC adaptation & mitigation framework						
• Climate change related policy issues						
• Proper uptodate technology utilization,like softwares, etc…						
• Using various global mitigation scenarios						
• Awareness about greenhouse gas reporting (CoPs, IPCC, UNFCCC, etc.)						
• Climate change & water resources monitoring						
• Climate change scenario analysis						
• Climate change forecasting/projection						
• Community based DRR and CCA						
• Mainstreaming DRR & CCA						
• Multi-hazard and multi-sectoral approaches of DRM and CCA						
• Emergency and contingency planning and implementation strategies						
• Strengths of the research and training strategy if any						

Part 3: General Questions about Trainings Taken

List out training topics related to DRM and CCA that you have taken so far.

No.	Training Areas/ Themes	Duration in Days	Training Provider	Domestic/ Abroad	Comment, if any
1					
2					
3					
4					

Part 4: General Questions about Training Potential Needs

List out training topics related to DRR and CCA that you need to take potentially to execute your current and future DRM and CCA plan effectively. Please list down the training topics you propose in order of priority (from high priories to least priorities).

S.N.	Potntial Training Area/ Themes	Reasons for Recommending the Training Topics?
1		
2		
3		
4		

7. Selected Study Areas and Participants of the TNA

I. Regional and Zonal Level Target Area Selection

S.N	Region	Total Number of Zones	Number of Targeted Zones/ Sub-Cities[26]
1	Oromia	20	3
2	Afar	5	2
3	Somali	11	2
4	Amhara	11	3
5	AA City Administration[27]	10	2
	Total	**57**	**12[28]**

II. Woreda Level Sample Selection

S.N	Regions	Number of Total Woredas	Number of Targeted Woredas
1	Oromia	287	3
2	Afar	34	2
3	Somali	94	2
4	Amhara	169	3

[26] The numbers of zones relies on the woreda agro-ecology and humanitarian response cluster hot spot classification ranking as it is the umbrella of woredas with varied agro-ecologies and hot spot rankings.
[27] Two sub-cities (Bole and Akaki Kality) were targeted based on the level of risk/disaster history and vulnerability to various risks associated with location and purposes (residential and industrial areas).
[28] Ten (10) zones and two (2) sub-cities were targeted at the zonal level

5	AA City Administration	99	2
	Total	**683**	**12**

III. Federal KIIs Selection

S.N	Name of Federal Level Ministry/Commission/ Agency / Authority	KIIs	FGDs
1	National Disaster Risk Management Commission	3	1
2	Ministry of Agriculture/Pastoral Development	2	-
3	Ministry of Health	2	-
4	Ministry of Education	1	-
5	Ministry of Water Irrigation & Energy	1	-
6	Ministry of Transport	1	-
7	Ministry of Finance & Economic Cooperation	1	-
8	Ministry of Defense	1	-
9	Ministry of Peace	1	-
10	Ministry of Labor and Social Affairs	1	-
11	Ministry of Science and Higher Education	2	-
12	Plan and Development Commission	1	-
13	Environmental Protection, Forest and Climate Change Commission	1	-
14	National Meteorological Agency	1	-
	Sub-total	**20**	**1**

IV. UN Agencies and NGOs/CSOs

S.N	Name of Federal Level Ministry/Commission/ Agency / Authority	KIIs	FGDs
1	UNDP	3	-
2	UNOCHA	2	-
3	USAID	2	-
4	SCI	1	-
5	CRS	1	-
6	CCRDA	1	-
7	Ethiopian Red Cross Society	1	-
	Sub-total	**7**	**-**

V. Regional Level FGDs and KIIs in Four Regions and One City Administration (Oromia, Amhara, Afar, Somali & Addis Abab a City Government) Bureaus/Commissions/Agencies

S.N	Sectors	KIIs	FGDs
1	Disaster Risk Management	10	One FGD from key sectors in four regions and AA City Administration
2	Agriculture/Pastoral Development	5	
3	Health	5	
4	Education	5	
5	Water Irrigation & Energy	5	
6	Urban Development and Construction	5	
7	Transport	5	
8	Finance	5	
9	Industry	5	
10	Peace and Security	5	
11	Labor and Social Affairs	5	
12	Environmental Protection, Forest and Climate Change	5	
	Sub-total	**65**[29]	**5**

VI. Zonal Level KIIs

S.N	Sector Office	Amhara (3 Zones)	Oromia (3 Zones)	Afar (2 Zones)	Somali (2 Zones)	AA City Administration (2 Sub-Cities)
1	Disaster Risk Management	3	3	2	2	2
2	Agriculture Development	3	3	2	2	2
3	Health	3	3	2	2	2
4	Education	3	3	2	2	2
5	Water Irrigation & Energy	3	3	2	2	2
6	Urban Development & Construction	3	3	2	2	2
7	Transport	3	3	2	2	2
8	Finance	3	3	2	2	2
9	Industry	3	3	2	2	2
10	Peace & Security	3	3	2	2	2
11	Environmental Protection, Forest & Climate Change	3	3	2	2	2
	Total	**33**	**33**	**22**	**22**	**22**

[29] Two key informants from each regions' DRM offices and Addis Ababa City Government Fire and Emergency Management Commission were conducted (10). On the other hand, there was one key informant from each of the sectors of the region and city administration (5).

VII. Woreda Level KIIs[30]

S.N	Sector Office	Amhara (3 Woredas)	Oromia (3 Woredas)	Afar (2 Woredas)	Somali (2 Woredas)	AA City Government (2 Woredas)
1	Disaster Risk Management	3	3	2	2	2
2	Agriculture Development	3	3	2	2	2
3	Health	3	3	2	2	2
4	Education	3	3	2	2	2
5	Water Irrigation & Energy	3	3	2	2	2
6	Urban Development & Construction	3	3	2	2	2
7	Transport	3	3	2	2	2
8	Finance	3	3	2	2	2
9	Industry	3	3	2	2	2
10	Peace & Security	3	3	2	2	2
11	Environmental Protection, Forest & Climate Change	3	3	2	2	2
	Total	**33**	**33**	**22**	**22**	**22**

VII. DRM Oriented Universities and Research Institutes

S.N	Name	KIIs
1	Bahir Dar University	1
2	Samara University	1
3	Jigjiga University	1
4	International Livestock Research Institute (ILRI)	1
5	Ethiopian Public Health Institute (EPHI)	1
6	Ethiopian Agriculture Research Institute	1
7	African Center for Disaster Risk Management	1
	Total	**7**

[30] One FGD from each woreda sectors were conducted i.e total of 12 FGDs.

VIII. Summary of Sample Selected Regions, Zones and Woredas

S.N.	Region	Zone	Woreda	Hot Spot Ranking	Agro-Ecology
1	Oromia East Hararghe	Bale	Agarfa	3	Highland
		West Arsi	Arsi Negelle	2	Rift Valley
		East Hararghe	Babile	1	Midland
2	Amhara	North Wollo	Guba Lafto	1	Lowland
		South Gondar	Lay Gayint	2	Midland
		North Shewa	Basso Worena	3	Highland
3	Afar	Zone 1	Mille	1	Lowlands
		Zone 3	Amibara	2	
4	Somalia	Jarar	Ararso	1	Lowlands
		Fafan	Kebri Beyah	2	
5	AA City Administration	Akaki Kality sub-city	Woreda 09	Industrial zone & construction prone woreda	
		Bole sub-city	Woreda 15	Residential area	
Total	**5**	**12**	**12**		

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